ALAMOS GOLD INC.

Lynn Lake Gold Project
Environmental Impact Statement

Federal IR Responses
Round 1, Package 3

Stantec

Prepared by:

Stantec Consulting Ltd.

August 4, 2021

Table of Contents

LIST OF APPENDICES

INTRODUCTION

The Impact Assessment Agency of Canada (the Agency) provided the third package of the first round (Round 1 Package 3) of Information Requests (IRs) on January 22, 2020, for the Lynn Like Gold Project Environmental Impact Statement (EIS) submitted by Alamos Gold Inc. (Alamos) on May 25, 2020. Upon review of the EIS, the Agency, federal authorities, and Indigenous Nations identified areas where additional information would be required. The Agency directed that this additional information is necessary to determine whether the Project is likely to cause significant adverse environmental effects and to inform the Agency's preparation of the Environmental Assessment (EA) Report under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012).

Alamos confirms that each of the 59 IRs provided in Round 1 Package 3 have been fully addressed and answered as clearly and succinctly as possible. A fulsome response to each IR is provided in the following sections in reference to the original request. Where required to complete the response, attachments have been provided in Appendix A.

Alamos has followed the Agency's direction and has considered the following while responding to the Information Requests:

- The context and rationale for the required information for every question.
- Applied a precautionary approach, given that some studies and plans may not be complete at this time.
- Provided additional information (wherever possible) to assuage uncertainty and to provide clearly defined, detailed follow-up program measures, including proposed further mitigation measures.
- Presented complete or summarized information and discussion within the information request responses, rather than limited responses to references to applicable reports.

On May 11, 2021, a supplemental filing was submitted to the Agency regarding the MacLellan site Water Balance/Water Quality Model Update Following Mine Rock Storage Area (MRSA) Refinement. As documented in this filing, Alamos has redesigned the MRSA at the MacLellan site, which has resulted in a reduction in the Project Development Area (PDA) at the MacLellan site. This change in PDA has been incorporated into the Round 1, Package 3 IR responses. No changes to the local assessment area for any VCs has been proposed from what was presented in the EIS.

An updated assessment of the effects of the Project on the groundwater, surface water, and fish and fish habitat valued components (VCs) at the MacLellan site was presented in the supplemental filing. No changes to the determination of significance of effects of the Project or cumulative effects of these VC were identified. No change to the conclusions of the EIS or the assessment of other VCs assessed in the EIS has been identified.

On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report, dated May 21, 2021, is composed of Traditional Land and Resource Use (TLRU) and

Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Following a thorough review of the Mathias Colomb Cree Nation TLRU Report, data were summarized into related topics that represent the information, concerns, and recommendations shared by Mathias Colomb Cree Nation and reviewed against the results of the May 2020 EIS. The results of this review are provided in a response to Mathias Colomb Cree Nation Traditional Land and Resource Use Information including a table summarizing Project mitigation measures in Appendix B.

Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. While the information contained in the TLRU Report identified additional site-specific traditional use by Mathias Colomb Cree Nation, the TLRU Report did not identify new potential Project effects, effects pathways or effects to sites, traditional resources, activities, or practices that had not been previously assessed in the EIS.

No change to the conclusions of the EIS, to the determination of significance of effects of the Project or cumulative effects of the Project on the Valued Components assessed in the EIS were identified as a result of the information provided in the TLRU Report. Information provided in the TLRU Report has been incorporated in the responses to the Round 1, Package 3 IR responses, as appropriate.

Alamos is committed to discussing and resolving any further information requests throughout the review process.

RESPONSE TO IAAC-146

ID:	**IAAC-146**
Expert Department or Group:	MCCN-51
Guideline Reference	3.2.3 Spatial and temporal boundaries
EIS Reference	8.4.2.3 Project Residual Effects 11.1.4.1 Spatial Boundaries
Information Request:	a. Describe the spatial extent of the direct and indirect effects to vegetation and wetlands and how spatial boundaries account for the full potential scope of effects. i. Clarify how a 1 km buffer area was selected for the LAA, considering that indirect effects to vegetation and wetlands are anticipated to extend beyond this area. b. Clarify and describe how the selection of the spatial boundaries for vegetation and wetlands considered Indigenous knowledge and community knowledge, and how potential impacts to rights were considered in the selection of the spatial boundaries. c. Describe whether any boundaries need to be updated based on the information provided in parts a and b. If boundaries are updated, provided an updated effects assessment and identify any changes to the conclusions. Describe any mitigation measures, monitoring, and follow-up as necessary.
Response:	a. The Gordon site is expected to cover 269.4 hectares (ha) and the MacLellan site is expected to cover 937.9 ha (Environmental Impact Statement [EIS], Volume 2, Chapter 11, Section 11.4.3). Existing vegetation and wetlands within the sites will be directly affected due to removal from clearing during Project construction. Existing vegetation and wetlands may also be indirectly affected by dust from road use, drilling and blasting and rock removal, weed introduction and spread, and changes in surface and groundwater. To assess direct and indirect effects on vegetation and wetlands from the Project, local assessment areas (LAAs) were established. The LAAs are 1 km buffers around the Project Development Areas (PDAs) of the Gordon and MacLellan sites, plus a 100 m buffer around the furthest groundwater drawdown contours. The LAAs include the full extent of vegetation and wetland clearing and associated changes in surface water flow patterns, and the furthest expected extent of groundwater drawdown. An LAA consisting of a 1 km buffer around Provincial Road (PR) 391 between the Gordon and MacLellan sites was also included to assess indirect effects from dust deposition due to Project vehicle traffic. With proposed mitigation, dust is expected to be deposited on vegetation adjacent to roads and disturbed areas. i. A 1 km buffer around PDAs was selected for the LAAs as this includes the furthest extent of expected changes to vegetation and is large enough to be representative of the spatial distribution of native vegetation communities potentially affected. Indirect effects are not anticipated to extend beyond 1 km. b. The initial selection of spatial and temporal boundaries for vegetation and wetlands reflect available Indigenous and community knowledge gained from a combination of sources, which include literature review, field programs and Alamos' Indigenous engagement efforts. As stated in Volume 1, Chapter 4, Section 4.3.2 of the Environmental Impact Statement (EIS), spatial boundaries for the assessment

ID:	IAAC-146
	were selected based on the geographic extent over which Project activities and their effects on vegetation and wetlands are likely to occur, as well as other ecological, technical, and social considerations. Information provided by Indigenous Nations and communities helped identify Project effect pathways, such as dust and changes in wetland water levels. Identified plant collection areas are not intersected by the PDAs or LAAs. Identified plant collection areas include: Anson Lake, Black Sturgeon Lake, shore of Burge Lake, Churchill River, Cockeram Lake, Eden Lake, Frances Lake (north end of lake), Gap Lake, Glad Lake, Gold Lake, Goldsand Lake, Hughes Lakes, Jackson Lake (medicinal plants), Laurie River, Lynn Lake, Moses Lake, Muskeg Lake, Portage from Eden Lake to Granville Lake and Churchill River to Pukatawagan, Ralph Lake, Russel Lake, area between Zed and Little Brightsand Lake, Zed Lake. The initial selection of spatial boundaries reflects available Indigenous and community knowledge gained from a combination of sources, which include literature review, field programs and Alamos' Indigenous engagement efforts. As stated in Volume 1, Chapter 4, Section 4.3.2 of the EIS, spatial boundaries for the assessment were selected based on the geographic extent over which Project activities and their effects on vegetations and wetlands, and hence the ability to exercise Indigenous rights that depend upon these resources, are likely to occur, as well as other ecological, technical, and social considerations. Information has been obtained from Indigenous Nations through Project-specific TLRU studies and the Indigenous engagement program for the Project has largely served to confirm the selection of spatial boundaries. TLRU studies completed by Indigenous Nations may identify spatial boundaries in relation to their traditional lands or traditional territories. Project-specific TLRU information has been shared by Marcel Colomb First Nation who applied the spatial boundaries used for the environmental assessment in their study, and the Manitoba Metis Federation (MMF), who chose boundaries that differ from the environmental assessment. The MMF spatial boundaries were larger (100 km buffer of the Project). The EIS applied spatial data from the MMF TLRU study within the corresponding spatial boundaries for baseline condition and effects assessment. Since boundaries identified by various Indigenous Nations often vary considerably, it is necessary to define consistent spatial boundaries in the EIS based upon the predicted geographic extent of potential effects in order to establish consistent assessment boundaries and permit comparable residual effects characterizations. While physical effects of the Project are not expected to extend beyond the regional assessment area (RAA), information regarding traditional use sites, activities, and resources, including preferred harvesting sites, beyond the RAA are considered where that information has been provided by Indigenous Nations. c. Based on the information provided in parts a. and b. above, no update to the assessment boundaries used for vegetation and wetlands is considered to be warranted. Although information obtained through engagement with Indigenous Nations indicates where plants are collected, this information does not necessitate modification of the spatial boundaries of the assessment since the Project will not affect vegetation beyond the selected assessment boundaries. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No new sensitive receptors have been identified and no changes to the selected

ID:	IAAC-146
	assessment boundaries or the conclusions of the EIS are proposed based on the additional information received. A response to comment MCCN-51 from Mathias Colomb Cree Nation was provided by Alamos directly to that Indigenous Nation in February 2021. The direct response to MCCN-51 included the information provided herein (i.e., in this response to IAAC-146) and sought additional comment from Mathias Colomb Cree Nation. No further comments have been received from Mathias Colomb Cree Nation. Alamos' engagement with Indigenous Nations will be ongoing for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-147

ID:	**IAAC-147**
Expert Department or Group:	MCCN-52
Guideline Reference	6.1.4 Riparian, Wetland, and Terrestrial Environments 6.2.3 Changes to riparian, wetland and terrestrial environments
EIS Reference	11.4.6 Project Residual Effects Tables 11-7 and 11-8
Information Request:	a. Provide a discussion and tabular summary for each wetland class of the area and percent of area potentially affected by indirect Project effects within the LAA and RAA during Project construction, operation, decommissioning and closure phases. b. Clarify the definition of indirect losses and the difference from direct losses for vegetation and wetlands. c. Provide a tabular summary of the cumulative area potentially affected by direct and indirect effects to vegetation and wetlands within the LAA and RAA during Project construction, operation, decommissioning and closure. Include a summary of all direct and indirect losses and effects, and provide an overview of the total area potentially affected directly and indirectly by the Project.
Response:	a. The species cover and composition of wetlands intersected by the Gordon and MacLellan local assessment areas (LAAs) may be indirectly affected by changes in surface water and groundwater patterns caused by the Project (Volume 2, Chapter 11, Section 11.4.5 of the Environmental Impact Statement [EIS]). Overland surface water flow patterns may be altered due to vegetation clearing and site development at the Gordon and MacLellan Project development areas (PDAs) and this may alter water levels in adjacent wetlands. Changes in groundwater levels due to site dewatering may also extend to fen, swamp and marsh wetlands in the LAAs. Effects to bogs from changes in groundwater levels are not expected as bogs typically receive water only from precipitation, have low water flow, and the water table is generally 40 to 60 cm below the peat surface (Halsey et al. 1997). The PDA values in Table IAAC-147-1 and Table 147-2 (in attached Appendix A) equal areas directly affected and the LAA wetland values equal areas potential indirectly affected. Fens, swamps and marshes occupy 660.0 hectares (ha) of the Gordon site LAA (Table IAAC-147-1) and 603.2 ha of the MacLellan site LAA (Table IAAC-147-2). Project clearing will result in the direct loss of 46.2 ha of fen, swamp and marsh in the Gordon site LAA and 114.5 ha in the MacLellan site LAA. Plant species cover, composition, and structure, and decomposition rates may change in the remaining wetland areas due to altered water levels and water permanency, and some wetlands may be completely lost. Indirect effects to wetlands are expected to persist until the open pits fill and groundwater levels return to baseline/existing conditions. b. Direct effects for the purpose of the assessment are considered activities that result from a primary Project action. Direct Project effects consisted of fragmentation of patches of vegetation, and loss of plant communities, species of conservation concern (SOCC) and plants of interest to Indigenous Nations from site clearing. Indirect effects are the result of a linkage to an intermediate action or pathway, and included alterations and loss of wetlands, and associated SOCC and

ID:	IAAC-147
	plants of interest to Indigenous Nations, due to site dewatering that lowers groundwater levels, dust and introduction or spread of weeds. c. Table IAAC-147-1 and Table IAAC-147-2 attached to this response (Appendix A) provide tabular summaries of the cumulative areas potentially affected by direct and indirect effects to vegetation and wetlands within the Gordon and MacLellan site LAAs and regional assessment area (RAA) during Project construction, operation, and decommissioning/closure. The PDA values equal areas directly affected and the LAA wetland values equal areas potential indirectly affected. The Gordon site is expected to directly affect 269.5 ha (119.4 ha of native upland and 64.8 ha of wetland). The Gordon site may indirectly result in the loss of 660.0 ha of wetland (i.e., fen, swamp and marsh) (Table IAAC-147-1). The MacLellan site is expected to directly affect 987.5 ha (476.8 ha of native upland and 336.2 ha of wetland) (Table IAAC-147-2). The MacLellan site may indirectly result in the loss of 603.3 ha of wetland (i.e., fen, swamp and marsh). Indirect effects to wetlands are expected to persist until mine pits fill and groundwater levels return to existing conditions. **Reference:** Halsey, L., D. Vitt and S. Zoltai. 1997. Climatic and Physiographic Controls on Wetland Type and Distributions in Manitoba, Canada. Wetlands. 17: 243-262.
Attachment:	Appendix A, Attachment IAAC-147

RESPONSE TO IAAC-148

ID:	**IAAC-148**
Expert Department or Group:	DFO-7
Guideline Reference	6.1.6 Fish and fish habitat 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.1 Fish and fish habitat
EIS Reference	11.2.2 Overview 11.4.2.3 Project Residual Effects
Information Request:	a. Confirm whether the wetlands identified in the LAA support fish and/or fish habitat. If fish and/or fish habitat are present, provide a full description and assessment, including: i. the spatial extent of the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, and migration routes; and ii. a description of primary and secondary productivity of aquatic resources in terms of abundance and distribution in affected water bodies with a characterization of season variability.
Response:	a. (including i and ii) As discussed in Volume 2, Chapter 11 of the Environmental Impact Statement (EIS), four types of wetlands were identified in the Gordon site and MacLellan site Local Assessment Areas (LAAs) from satellite imagery interpreted by a wetland ecologist: fens, bogs, marshes, and swamps. Fens and bogs are organic wetland types that do not have open-water, nor do they have inlet or outlet channels that connect them to waterbodies with open water. For this reason, fens and bogs are not fish-bearing wetlands and are not considered further in this response. Marshes and swamps are mineral wetland types that have open water and may or may not be connected to other waterbodies with open water. No marsh-type wetlands were identified in the Gordon site LAA or MacLellan site LAA. Therefore, marsh wetlands are not considered further in this response. Two types of swamps were identified in the Gordon site LAA and MacLellan site LAA from satellite imagery: “shrubby swamps” and “treed swamps”. “Shrubby swamps” are permanently wetted and contain >25% shrub cover (i.e., willows) and <25% tree cover. “Treed swamps” contain >25% tree cover in the form of black spruce and tamarack, species that are tolerant of wet conditions but cannot survive continuous or long-duration flooding. Based on the flood tolerance of these tree species, the presence of water in these treed swamps is ephemeral. Evidence for the fish-bearing status of swamps within the Project Development Areas (PDAs) at the Gordon site and MacLellan site was provided by field surveys conducted during high and low flows specifically to determine the distribution of fish-bearing watercourses and waterbodies at the Gordon and MacLellan sites. Prior to conducting the field surveys, known and potential watercourses and waterbodies (including swamps) were identified using 1:50,000 CANVEC imagery and LiDAR data. The CANVEC imagery was used to identify larger watercourses and waterbodies while the LiDAR data was used to identify topographical depressions where stream channels and wetlands could exist. Six discreet swamps were identified within or partially within the PDA at the Gordon site based on satellite imagery interpretation (Map IAAC-148-1 attached to this response). Three of these swamps are “shrubby swamps” and three are “treed

ID:	IAAC-148
	swamps". The three "treed swamps" are located within or adjacent to the proposed Mine Rock Storage Area (MRSA) footprint. None of these "treed swamps" are fish-bearing because they are not connected to any fish-bearing watercourse or waterbody and are shallow enough (i.e., <50 cm) to freeze to the bottom in winter. The isolated status of these "treed swamps" was confirmed during field surveys conducted during low flows in summer 2016 and during high and low flows in spring and summer 2020 (spring flows in 2020 represented a 1:15 wet year flood). One "shrubby swamp" located within the MRSA footprint is also non-fish-bearing for these same reasons. The other two "shrubby swamps" are fish-bearing: one is located adjacent to the fish-bearing Farley Lake and one is drained by the fish-bearing Gordon Lake tributary, FAR7-A1. While these "shrubby swamps" are located within the Gordon site PDA, neither will be affected by Project infrastructure as they are located within the buffered area around the Project and not under any proposed infrastructure. The fish-bearing status of other swamps identified in the Gordon site LAA has not been confirmed. This is because the surveys conducted in 2016 and 2020 to determine the fish-bearing status of watercourses and waterbodies potentially affected by mine infrastructure at the Gordon site were limited to those within the Gordon PDA. However, those swamps adjacent to fish-bearing lakes or connected to fish-bearing streams by defined channels are assumed to be fish-bearing, at least during high water conditions. These swamps in the LAA will not be affected by the Project during any mine phase. Between 50 and 60 discreet swamps were identified within, partially within, or adjacent to the PDA at the MacLellan site based on satellite imagery interpretation (Map IAAC-148-2 attached to this response). These include 12 "shrubby swamps" and between 40 and 50 "treed swamps". The "shrubby swamps" include fish-bearing swamps around the perimeter of East Pond, adjacent to the East Pond outlet channel (KEE3-B2-A1), adjacent to headwater Minton Lake tributaries COC2-LOB2-MIN5 and COC2-LOB2-MIN5-C1, and adjacent to the headwaters of Keewatin River tributary KEE3-B2. Of these, only the "shrubby swamps" around East Pond and adjacent to the East Pond outlet channel will be affected by the Project (due to water draw-down caused by development of the open pit). The spatial area of these "shrubby swamps", and their use by brook stickleback for spawning, rearing, and potential overwintering, will be included in the calculation of harmful alteration, disruption, or destruction (HADD) of fish habitat and in the fish habitat offset plan submitted to Fisheries and Oceans Canada (DFO) as part of the Project's Section 35(2)(b) *Fisheries Act* authorization application; no other fish species present in the MacLellan site LAA, besides brook stickleback, use East Pond or its outlet channel or these "shrubby swamps" for any part of their life histories. The MRSA has been redesigned to avoid any interaction with the fish-bearing "shrubby swamps" drained by the headwater tributaries of Minton Lake (i.e., COC2-LOB2-MIN5 and COC2-LOB2-MIN5-C1) and drained by the Keewatin River tributary KEE3-B2. The "shrubby swamps" also include non-fish-bearing swamps located in topographic low spots near the open pit and the overburden stockpile, and in topographic high spots near the location of the proposed tailings management facility (TMF) and MRSA. These "shrubby swamps" are non-fish-bearing because they are not connected to any fish-bearing watercourse, as determined by field surveys conducted in the summers of 2016 and 2019 and in the spring and

ID:	IAAC-148
	summer of 2020, and they are sufficiently shallow to freeze to the bottom in winter (i.e., <50 cm). The MRSA was redesigned following the spring 2020 survey to avoid "treed swamps" drained by the fish-bearing Keewatin River tributary KEE3-B2 and by the headwater Minton Lake tributaries COC2-LOB2-MIN5 and COC2-LOB2-MIN5-C1. The remaining "treed swamps" located within the MacLellan PDA are non-fish-bearing because they are not connected to any fish-bearing watercourse (as determined by the surveys conducted in the summers of 2016 and 2019 and in the spring and summer of 2020) and are sufficiently shallow (i.e., <50 cm) to freeze to the bottom in winter. These include non-fish-bearing "treed swamps" located in topographic low spots within the footprints of the proposed open pit, ore stockpile, processing mill, overburden stockpile, explosive magazine, and storm-water pond, and in topographic high spots within the footprints of the proposed tailings management facility (TMF) and MRSA. The only fish-bearing "treed swamps" within the MacLellan site LAA that are expected to be affected by the Project are those located adjacent to the East Pond outlet channel (KEE3-B2-A1). These "treed swamps" would be affected for the same reason as the "shrubby swamps" located adjacent to this same channel (i.e., due to water draw-down caused by development of the open pit). The spatial area of these "treed swamps", and their use by brook stickleback for spawning, rearing, and potential overwintering, will be included in the calculation of harmful alteration, disruption, or destruction (HADD) of fish habitat and in the fish habitat offset plan submitted to Fisheries and Oceans Canada (DFO) as part of the Project's Section 35(2)(b) *Fisheries Act* authorization application; no other fish species present in the MacLellan site LAA, besides brook stickleback, use East Pond or its outlet channel or these "treed swamps" for any part of their life histories. The fish-bearing status of all other swamps identified in the MacLellan site LAA has not been confirmed. This is because the surveys conducted in 2016, 2019, and 2020 to determine the fish-bearing status of watercourses and waterbodies potentially affected by mine infrastructure at the MacLellan site were limited to those within the MacLellan PDA. However, those swamps adjacent to fish-bearing lakes or connected to fish-bearing streams by defined channels are assumed to be fish-bearing, at least during high water conditions. These other swamps in the LAA will not be affected by the Project during any mine phase.
Attachment:	Appendix A, Attachment IAAC-148

RESPONSE TO IAAC-149

ID:	**IAAC-149**
Expert Department or Group:	IAAC
Guideline Reference	1.3 Project Location 3.1 Project components 3.2.1 Site preparation and construction 6.1.4 Riparian, Wetland and Terrestrial Environments
EIS Reference	2.7.2 Site Preparation Maps 5-1 and 5-2 6.4.2.2 Project Pathways 11.4.5.2 Mitigation Maps 22-1a to 22- 2c Volume 5, Appendix A Lynn Lake Gold Project, Air Quality Impact Assessment Technical Modelling Report Appendix F F.4.1.4 Land Clearing
Information Request:	a. Describe specific site clearing activities proposed at the ore milling and processing plant, open pits, stockpiles, TMF area, internal access roads, and ancillary facilities, including any grading, open burn, and excavation activities that are proposed. b. Indicate how site preparation activities will consider wetland and sensitive areas as well as terrain constrains. Clarify how wetlands and sensitive areas will be removed during site preparation activities. c. Indicate how and where materials removed during site preparation will be stored.
Response:	a. Site preparation activities are described in Volume 1, Chapter 2, Section 2.7.2 of the Environmental Impact Statement (EIS) and include removal of existing buildings (MacLellan site); vegetation clearing and earthworks (both sites), and development of the temporary construction camp (MacLellan site). In the EIS it was conservatively assumed that all of the area within the PDA would be cleared. Cleared merchantable timber will be offered for sale and remaining cleared vegetation will be mulched and stored on-site for future use in active closure activities. Clearing activities will involve the use of heavy machinery including bulldozers and excavators, and will generally take the following approach: • Pre-construction surveys as required. • Removal of merchantable timber. • Clearing to remove other woody vegetation. Mulching of this material and stockpiling on-site for future use. • Grubbing to remove stumps, roots, and other remaining vegetation. • Removal of topsoil and some overburden (where required for geotechnical stability, such as TMF dam and building locations) with stockpiling on-site for future use. • Infilling of wetland areas by placing clean, tested (non-acid generating) borrow material on top of remaining vegetation, topsoil, and organics.

ID:	IAAC-149
	General weed management activities on the Project sites include: • Keep equipment free of soil and debris because equipment can spread propagules (e.g., seeds, rhizomes). To limit the transport and spread of propagules of non-native invasive plant species, equipment and vehicles should be limited in areas of weed infestations and cleaning/washing stations for equipment (e.g., vehicles, boots, equipment) should be established at the entry/exit point(s) during construction. • Monitor topsoil and subsoil piles for the establishment of regulated weed species. • Apply weed control measures (e.g., mowing, herbicide application) to targeted areas within the PDAs with known non-native invasive species infestations (e.g., overburden stockpiles, soil piles, etc.). Measures to manage clearing activities on Project sites include: • Vegetation clearing will occur during dry or frozen conditions, when possible. • Vegetation clearing will be conducted using mechanical/manual practices. • A protective layer such as matting or biodegradable geotextile and clay ramps or other approved materials will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential for rutting, admixing (i.e., mixing of soil layers) or compaction. • Sensitive areas adjacent to the PDA, such as wetlands, will be buffered by 30 m and clearly marked prior to clearing. • Cleared merchantable timber will be sold and remaining cleared vegetation will be stored on-site for future use in active closure activities. A scaling plan must be submitted to and approved by the Department of Agriculture and Resource Development to receive a timber permit under *The Forest Act* prior to clearing timber. • Limits of vegetation clearing will be clearly marked and marking maintained for the duration of construction. • The limits of vegetation clearing will be visually examined to confirm limits are clearly marked and that clearing works stay within approved work areas. • Grading will be directed away from wetlands, where practicable. • Ground level cutting/mowing/mulching of wetland vegetation will be conducted instead of grubbing, where practicable. • Grading within wetland boundaries will be reduced unless required for site-specific purposes. • Cross drainage will be maintained to allow water to move freely from one side of the road to the other in areas of permanent or temporary access roads. • Frost packing, snow, ice, geotextile swamp mats or access mats will be used for access through wet areas. • Vegetation cover along the boundaries of high activity areas (e.g., access roads) will be maintained where possible to reduce sensory (noise and visual) disturbance.

ID:	IAAC-149
	Soils will be stockpiled during site preparation for later use in Project rehabilitation. Salvaged upland topsoil and peat/mineral mix will be stored in separate stockpiles. Soil stockpiles will be stored separately from overburden. Stockpile material type (i.e., topsoil, peat, overburden) and location will be documented by the Environmental Monitor, and stockpile type will be identified with signage. General soil storage management for the Gordon and MacLellan site PDAs are summarized below: • Soil storage sites will not be moved or further disturbed to prevent admixing and soil loss. • Soil erosion will be managed by limiting the height and slope of stockpiles. Where possible, slopes will be 3:1 (H:V). • Whenever possible, stockpiles will be orientated to reduce wind exposure and will not be stored at high points on the landscape. • Where required, erosion control measures will be implemented on soil storage sites to mitigate soil erosion and surface runoff (e.g., seeding with native species, application of mulch or geotextile). Where burning is required for site preparation, open burning will be performed in accordance with *The Wildfires Act* of Manitoba. A burning permit will be acquired. Fires will not be started if conditions could lead to the fire burning out of control and controls will be in place prior to burning material, including a minimum 6 m wide strip of land free of material that may catch fire, or covered by snow or water. Burning material will not be placed where it could cause a fire to spread and burning will be supervised until the fire is out. b. Mitigation measures as described in Volume 2, Chapter 11, Section 11.4.5.2 of the EIS outline how site preparation activities will consider wetlands and sensitive areas. For example, sediment fencing and other appropriate measures will be used to prevent erosion and siltation into adjacent wetlands; ground level cutting of wetland vegetation instead of grubbing will be conducted where practicable, and grading will be directed away from wetlands, where practicable. Sensitive areas, such as wetlands adjacent to the PDA, will be buffered by 30 m and clearly marked prior to clearing. Vegetation in wetlands and sensitive areas intersected by the Gordon or MacLellan site PDAs will be cleared and either stripped or infilled to accommodate Project development. Stripping will involve the removal of vegetation and soils using heavy equipment to the required depth to support Project infrastructure. Infilling will involve the removal of merchantable timber and other woody vegetation and unstable soils as required, and the placement of clean, tested (non-acid generating) borrow material to achieve the required geotechnical properties and elevation to support Project infrastructure. The mitigation measures described in part a. of this response will be employed during both of these activities. Should draining of wetlands be required prior to stripping or infilling, mitigation measures will be employed to control the release of water to the surrounding environment. This will include the use of sediment and erosion controls, filter bags or structures, or other methods to prevent the release of sediment laden water, and to direct and moderate flow to prevent soil erosion. A protective layer, such as matting or biodegradable geotextile and clay ramps or other approved materials, will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential

ID:	IAAC-149
	for rutting, admixing or compaction. See a. above for further details on how site preparation activities will consider wetland and sensitive areas as well as terrain constraints and how wetlands and sensitive areas will be removed during site preparation activities. c. Available organics (including the stockpiling of timber and/or topsoil) will be stockpiled at available on-site locations (e.g. topsoil stockpiled in portion of topsoil storage area [part of overburden storage area]) for future use in site closure/ decommissioning. Merchantable timber will be temporarily stored at designated locations on-site and transported off-site once sold.
Attachment:	No

RESPONSE TO IAAC-150

ID:	**IAAC-150**
Expert Department or Group:	IAAC
Guideline Reference	6.4 Mitigation measures
EIS Reference	11.4.2.2 Mitigation 11.4.3.2 Mitigation 11.4.3.3 Project Residual Effects 11.4.4.2 Mitigation 11.4.5.2 Mitigation Table 11-5 Table 20B-1
Information Request:	a. Clarify how the TMF will contribute to the direct and indirect loss of wetland function. b. Describe why the pathways of interaction between the TMF and wetland function were deselected. c. Identify and describe mitigation measures proposed to minimize Change in Wetland Functions. i. Include mitigation measures that will address effects to vegetation and wetlands from the TMF. ii. Include mitigation measures proposed to address effects from dewatering and the direct loss of wetlands. iii. Clarify whether and how mitigation measures will reduce or control the extent of Change in Wetland Functions.
Response:	a. Effects to wetlands, direct and indirect, including the tailings management facility (TMF), are assessed for construction and clearing of the overall MacLellan site. Construction and clearing of the MacLellan site, including the area of the TMF, will directly affect 114.5 ha (i.e., due to clearing) and up to 603.2 ha indirectly (i.e., due to altered surface and groundwater flows; see response to IAAC-147). Clearing for the MacLellan site includes 65 ha of wetland in the planned TMF footprint. Overland surface water flow patterns may be altered due to vegetation clearing and site development at the MacLellan Project Development Area (PDA) potentially altering water levels in adjacent wetlands. Changes in groundwater levels due to site dewatering may also extend to fen, swamp and marsh wetlands in the LAAs. Effects to bogs from changes in groundwater levels are not expected as bogs typically receive water only from precipitation, have low water flow, and the water table is generally 40 to 60 cm below the peat surface (Halsey et al. 1997). Plant species cover, composition, structure, and decomposition rates may change in the remaining wetland areas due to altered water levels and water permanency, and some wetlands may be completely lost. Indirect effects to wetlands are expected to persist until the open pits fill and groundwater levels return to baseline/existing conditions. b. Effects of the TMF on wetland functions were deselected from the potential Project-environment interactions with vegetation and wetlands (Volume 2, Chapter 11, Table 11-5 of the Environmental Impact Assessment [EIS]) because the pathways for effects on wetland functions (as identified in Volume 2, Chapter 11, Table 11-1 of the EIS) are as follows:

ID:	IAAC-150
	• Direct loss or alteration of wetland area or change in wetland type from vegetation clearing or alteration of surface or groundwater flow patterns. • Indirect loss or alteration of wetland area, structure, or function (i.e., nutrient cycling and carbon sequestration). These effect pathways are primarily associated with site preparation during construction at the Gordon and MacLellan sites, which will entail activities such as the removal of existing buildings, removal of contaminated materials, vegetation clearing and earthworks (including vegetation clearing and earthworks within the TMF footprint prior to TMF construction), and development of a temporary construction camp at the MacLellan site. Seepage water associated with the TMF will be collected in ditches and pumped back to the TMF. Accordingly, the potential Project interactions with vegetation and wetlands selected in Table 11-5 include site preparation at both sites during construction; water development and control at both sites during construction; water management at both sites during operation; and emissions, discharges, and wastes at both sites during construction and operation. Volume 2, Chapter 11 of the EIS assesses the effects of each of these potential Project interactions with vegetation and wetlands at the MacLellan site, thereby also assessing the potential effects of construction and operation of the TMF on vegetation and wetlands (including a potential change in wetland functions) through the identified effect pathways. c. i, ii, and iii. Mitigation measures for reducing Project effects to vegetation and wetlands, including changes to wetland function from vegetation clearing, from the MacLellan site, including the TMF, are identified in Volume 2, Chapter 11, Section 11.4.5.2 of the EIS. Mitigation measures include: using fencing or other appropriate measures to prevent erosion and siltation into wetlands and associated indirect effects on wetland water quality and water levels, maintaining cross drainage to allow water to move freely from one side of roads to the other in areas of permanent or temporary access roads to reduce potential indirect changes in wetland water levels, establishing undisturbed 30 m buffers around wetlands where possible, and reducing the vegetation removal to the extent practicable to reduce direct loss of wetlands and indirect effects to water quality. These measures will help reduce the area of vegetation removal and maintain wetland hydrology. Water collected during site dewatering will be stored in management ponds located at the Gordon and MacLellan sites, tested if required, and released to the environment once federal and provincial requirements are met. Released water will help maintain wetland conditions (i.e., mitigate indirect effects) near the release points and hydrologically connected wetlands, such as adjacent swamps and fens. Vegetation clearing will occur during Project construction, and mitigation measures will be established prior to clearing and remain in place through operation until the completion of decommissioning and closure. Effects to wetland function will still occur in the groundwater drawdown area further from the water release points. See response to a. above for water management from the TMF. Alamos will work with Manitoba Agriculture and Resource Development to determine if appropriate off-sets or financial compensation for unavoidable wetland effects from access roads and crossings are required.
Attachment:	No

RESPONSE TO IAAC-151

ID:	**IAAC-151**
Expert Department or Group:	MCCN-53
Guideline Reference	6.1.4 Riparian, wetland, and terrestrial environments
EIS Reference	11.2 Existing Conditions for Vegetation and Wetlands Table 11-4
Information Request:	a. Describe the availability, abundance, and distribution of plant species of importance to each Indigenous Group in the LAA and RAA. Provide a map and a tabular summary of the habitats (i.e., land cover classes) for plant species of importance within the PDA, LAA, and RAA.
Response:	a. Table IAAC-151-1 (Appendix A) details the land cover types where plant species of interest to Indigenous Nations are expected to occur and the observed abundance of the plant species from Project survey data. Plants of interest to Indigenous Nations are expected to occur in all land cover types present in the Project Development Area (PDA), local assessment area (LAA), and regional assessment area (RAA), including areas of disturbed land. Conifer, bog and mixedwood land cover types provide most of the habitat for plants of interest to Indigenous Nations. Conifer and bog land cover types each provide habitat for 14 plants and mixedwood provides habitat for 10 plants. In addition, more than one land cover type provides habitat for many of the plants of interest to Indigenous Nations. See Volume 2, Chapter 11, Section 11.2.2 of the Environmental Impact Statement (EIS) and Table 11-3 for land cover type abundance in the LAA and RAA. See Map 11-3a, 11-4a, and 11-2c for land cover type distribution in the LAA of the Gordon site at baseline/existing and closure, respectively. See Map 11-3b, 11-4b for land cover type distribution in the LAA of the MacLellan site at baseline/existing and closure, respectively. Map IAAC-151-1 shows the spatial distribution of land cover types in the RAA, and areas intersected by the Gordon and MacLellan sites PDAs. The vegetation and wetlands assessment considers potential effects of the Project on direct and indirect change to vegetation species, community diversity, and wetland function, including the distribution and abundance of native plant communities, species of conservation concern, and traditional use plants. While the vegetation and wetlands assessment acknowledges vegetation and wetlands are valued by Indigenous peoples and assesses effects on plants of interest to Indigenous peoples identified through the engagement program for the Project, the vegetation and wetlands assessment itself does not assess or predict effects on other valued components. However, conclusions of the vegetation and wetlands assessment have been incorporated in the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. Volume 2, Chapter 17, Sections 17.4.2 and 17.4.3 of the EIS assesses the pathway of effects on vegetation and wetlands on current use including changes to availability of and access to resources and harvesting areas. Vegetation clearing is the primary pathways for a direct change in availability of traditional resources during site preparation activities. No changes to vegetation species, communities or wetland function are anticipated beyond the local assessment area for the

ID:	IAAC-151
	vegetation and wetlands valued component. Locations of plant communities of importance to Indigenous Nations are mapped in Project-specific TLRU studies from Marcel Colomb First Nation and Manitoba Metis Federation in Volume 2, Chapter 17, Appendix 17A.
Attachment:	Appendix A, Attachment IAAC-151

RESPONSE TO IAAC-152

ID:	**IAAC-152**
Expert Department or Group:	CCN-67 CCN-68 CCN-73 CCN-79 MCCN-54 SDFN-73 SDFN-76 SDFN-81 SDFN-87
Guideline Reference	6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.4 Indigenous peoples
EIS Reference	11.1.2.1Indigenous Engagement 11.2.2 Overview 11.4.4.3 Project Residual Effect 11.4.6 Project Residual Effects Tables 11-7 and 11-8
Information Request:	a. Considering the responses to IAAC-147 and IAAC- 151, for each species of importance to Indigenous Groups, calculate the total area of habitat present under existing conditions, as well as the total area that will be directly or indirectly affected by the Project. i. Provide a table summarizing the total area and percent change in area for each species' habitat within the PDA, LAA, and RAA under existing conditions, construction, operation, decommissioning and closure phases. If summarized by habitat type rather than by species, clearly link species and their occurrence in these habitats. b. Describe how the assessment of effects to vegetation and wetlands considered the specific locales where plants of importance for traditional purposes may occur and how they were considered in the assessment of existing habitats and conditions for vegetation and wetlands. c. Describe how changes (as a result of direct and indirect effects) in the area of key habitats may affect the abundance, distribution, and quality of these plant species of importance. d. Considering the response to IAAC-157, describe the potential indirect effects to plant species of importance from the potential long-term residual effects to wetland function.
Response:	a. (including i). Table IAAC-151-1 (see IAAC-151 response) details the land cover types where plant species of interest to Indigenous Nations are expected to occur. Plants of interest to Indigenous Nations are expected to occur in all land cover types present in the Project development area (PDA), local assessment area (LAA), and regional assessment area (RAA). Conifer, bog and mixedwood land cover types provide most of the habitat for plants of interest to Indigenous Nations. Based on field survey data and publicly available information, conifer and bog land cover types each provide habitat for 14 plants and mixedwood provides habitat for 10 plants. In addition, more than one land cover type provides habitat for many of the plants of interest to Indigenous Nations. Tables IAAC-146-1 and 146-2 (see IAAC-146 response) present the total area and percent change in area of land cover classes supporting plants of importance to Indigenous Nations within the PDA, LAA, and RAA under existing conditions, construction, operation, decommissioning/closure phases. Map IAAC-151-1 (see IAAC-151 response) shows the spatial distribution of land cover types in the RAA, and areas intersected by the Gordon and MacLellan site PDAs. The Gordon and MacLellan site PDAs have been selected to avoid undisturbed native land cover types where possible, taking advantage of existing historical mine disturbance and using existing roads

ID:	IAAC-152
	where possible. Commercially available native plant species of interest to Indigenous Nations will be included in reclamation seed mixes to help support future Indigenous Nations use of the area following Project closure. b. Identified plant collection areas were reviewed for potential Project effects and no identified plant collection areas are intersected by the PDAs or LAAs. Identified plant collection areas include: Anson Lake, Black Sturgeon Lake, shore of Burge Lake, Churchill River, Cockeram Lake, Eden Lake, Frances Lake (north end of lake), Gap Lake, Glad Lake, Gold Lake, Goldsand Lake, Hughes Lakes, Jackson Lake (medicinal plants), Laurie River, Lynn Lake, Moses Lake, Muskeg Lake, Portage from Eden Lake to Granville Lake and Churchill River to Pukatawagan, Ralph Lake, Russel Lake, area between Zed and Little Brightsand Lake, Zed Lake. As indicated in the response to part a, plant species of interest to Indigenous Nations can occur in all land cover classes intersected by the PDA and LAA. c. and d. Information on key habitats for plants of importance to Indigenous Nations (e.g., areas of higher abundance important for the maintenance of the species) is not available for the Boreal Shield Ecozone in which the RAA is located, or Manitoba. The Forest Ecosystem Classification for Manitoba (Zoladeski et al. 1995) does not provide plant composition details for forested communities in Manitoba. Information on plant composition of wetlands in Manitoba is also not available. Habitats (i.e., land cover types) supporting plants of interest to Indigenous Nations were determined from Indigenous engagement, Project field surveys and publicly available information. This information focused on habitats occurring in the PDA and LAA and, although useful for identifying habitats in which the plants occur, it is not sufficient to identify key habitats. Regional datasets are required for identification of key habitat associations and collection of such information is beyond the scope of the Project EIS. Direct effects from the Gordon site will reduce the abundance of land cover types during construction and operations and after site decommissioning and closure by a minimum of 1.2% (swamp treed) to a maximum of 14.7% (mixedwood dense) compared to existing conditions in the LAA, and by a minimum of <0.1% (bog treed, fen treed, swamp treed and water) to a maximum of 1.3% (mixedwood dense) compared to existing conditions in the RAA (Table IAAC-147-1, Appendix A). Direct effects from the MacLellan site will reduce the abundance of land cover types during construction and operations and after site decommissioning and closure by a minimum of 1.4% (water) to a maximum of 36.2% (conifer open) compared to existing conditions in the LAA, and by a minimum of <0.1% (shrubland and water) to 1.2% (fen patterned) compared to existing conditions in the RAA (Table IAAC-147-2, Appendix A). Mixedwood dense and fen shrubby are the only land cover types reduced by more than 10% in the Gordon site LAA. Ten land cover types (conifer open, conifer dense, conifer sparse, bog shrubby, bog treed, fen graminoid, fen patterned, fen treed, swamp shrubby and swamp treed) will be reduced by more than 10% in the MacLellan site LAA. The affected land cover types are widely distributed in the LAAs and the RAA. Following decommissioning and closure of the Gordon and MacLellan sites, 1008 ha will be reclaimed, with 763.9 ha reclaimed to native upland. Reclaimed native upland will be seeded with native plant species, including commercially available plant species of interest to Indigenous Nations. Indirect effects may occur from weed introduction and spread, dust deposition and groundwater drawdown. These indirect effects will likely be greatest close to the Project sites and mitigation is expected to be effective at limiting changes to land cover types and plants of interest to Indigenous Nations.

ID:	IAAC-152
	See Volume 2, Chapter 11, Section 11.4 and Section 11.5 of the EIS for a full list of mitigation measures. Construction and operation at the Gordon site will require dewatering of the open pit and will result in groundwater drawdown of at least 1 m within 800 m of the open pit. Construction and operation at the MacLellan site will also require dewatering of the open pit and will result in groundwater drawdown of at least 1 m within 1,200 m of the open pit. Changes in wetland conditions due to groundwater drawdown may favour plants adapted to drier conditions, such as blueberries (*Vaccinium* spp.) and spruce (*Picea* spp.), and may result in localized losses or reduced abundance of plants better suited to wetter conditions, such as sweet flag/muskrat root (*Acorus calamus/Acorus americanus*). These changes may persist for the life of the Project until the mine pits fill and groundwater levels return to pre-disturbance levels. Indirect effects to bogs from groundwater drawdown are not expected as they typically receive water only from precipitation (Halsey et al. 1997). The land cover types supporting plant species of interest to Indigenous Nations, determined from Indigenous Nations engagement, field surveys and publicly available information, will remain abundant in the LAAs and RAA following Project construction, operation and closure and reclamation. The Gordon and MacLellan site PDAs were selected to avoid undisturbed native land cover types where possible, taking advantage of existing mine site disturbance and using existing roads. Commercially available native plant species of interest to Indigenous Nations will be included in reclamation seed mixes to help support future Indigenous Nations use of the area following Project closure. **References:** Flora of North America. 2020. Available at: http://beta.floranorthamerica.org/Main_Page. Accessed: December 2020. Halsey, L., D. Vitt, and S. Zoltai. 1997. Climatic and Physiographic Controls on Wetland Type and Distributions in Manitoba, Canada. Wetlands. 17: 243-262. Johnson, D., L. Kershaw, A. MacKinnon, and J. Pojar. 2017. Plants of the Western Forest Alberta, Saskatchewan & Manitoba Boreal and Aspen Parkland. Lone Pine Pub. Edmonton, Alberta. 392 pp. Lincoff, G.H. 1981. National Audubon Society Field Guide to North American Mushrooms. Alfred A. Knopf, Inc. New York, NY. 498pp. Zoladeski, C.A., G.M. Wickware, R.J. Delorme, R.A Sims, and I.G.W. Corns. 1995. Forest Ecosystem Classification for Manitoba: Field Guide. Special Report 2. Natural Resources Canada, Canadian Forest Service, Northern Forestry Centre, Edmonton.
Attachment:	No

RESPONSE TO IAAC-153

ID:	**IAAC-153**
Expert Department or Group:	CCN-69 IAAC SDFN-77
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised 6.4 Mitigation Measures
EIS Reference	11.4.2.2 Mitigation 11.4.3.2 Mitigation 11.4.4.2 Mitigation 11.4.5.2 Mitigation Table 20B-1
Information Request:	a. Provide specific technically and economically feasible mitigation measures for Change in Landscape Diversity and Change in Wetland Functions, for all phases of the Project (construction, operation, and decommissioning and closure). i. Clarify how the TMF capping and the establishment of the 30 m buffer for wetland in the PDA will mitigate Change in Landscape Diversity and Change in Wetland Functions across all phases of the Project. b. Clarify and describe the mitigation measures that are considered and will be implemented for Change in Landscape Diversity; Change in Community Diversity; Change in Species Diversity; and Change in Wetland Functions. Describe any proposed mitigation measures that are undergoing development, for all Project phases. c. Clarify how mitigation measures for effects to vegetation and wetlands, through Change in Landscape Diversity; Change in Community Diversity; Change in Species Diversity; and Change in Wetland Functions, considered Aboriginal traditional knowledge and potential impacts to Indigenous peoples and their rights.
Response:	a. (including i.) Technically and economically feasible mitigation measures for potential Project effects to landscape diversity and wetland functions from construction and operation are provided in Volume 2, Chapter 11, Section 11.4.2.2 and Section 11.4.5.2 of the Environmental Impact Statement (EIS). Wetland loss will occur from development of the Gordon and MacLellan sites, but mitigation, including discussions with Manitoba Agriculture and Resource Development on potential wetland offset or financial compensation, described in this response will help reduce effects to wetlands beyond or adjacent to the PDAs. Standard mitigation practices include reducing removal of upland and wetland vegetation to the extent practicable, use of sediment fencing to prevent erosion and siltation into wetlands, and establishing 30 m buffers around wetlands where possible. The establishment of the buffers around wetlands, where possible, will limit effects to wetland water quality as maintained upland vegetation will intercept sediment. The buffer will also support the maintenance of plant composition and structure by limiting changes in light and wind conditions in the wetlands. Many plants are sensitive to light conditions and changes in wind conditions could lead to altered tree and shrub structure. Reclamation, specifically the application of a native seed mix, is intended to mitigate effects to landscape diversity and wetland functions during decommissioning/closure. Native seeding will provide native plant cover, reducing the ability of weeds to establish and controlling sediment inputs to

ID:	IAAC-153
	surrounding wetlands. Capping the tailings management facility (TMF), and applying a reclamation seed mix, is intended to reduce potential sediment inputs to wetlands near the Project development area (PDA) and limit changes to wetland water quality. Alamos will work with Manitoba Agriculture and Resource Development to determine if appropriate off-sets or financial compensation for unavoidable wetland effects from access roads and crossings are required. b. Proposed mitigation measures for managing effects to landscape diversity are provided in Volume 2, Chapter 11, Section 11.4.2.2 of the EIS, measures for community diversity are provided in Volume 2, Chapter 11, Section 11.4.3.2, measures for species diversity are provided in Volume 2, Chapter 11, Section 11.4.4.2, and measures for wetland functions are provided in Volume 2, Chapter 11, Section 11.4.5.2. The proposed native seed mix is being refined to include commercially available plants of interest to Indigenous Nations. No additional mitigation measures have been identified. c. Proposed mitigation for potential Project effects to landscape diversity, community diversity, species diversity and wetland functions included was influenced by traditional knowledge (TK) and traditional land and resource use (TLRU) information learned from Project-specific TLRU studies and through engagement with participating Indigenous Nations. Volume 2, Chapter 17, Section 17.1.4 provides details of specific species of plants and their use and significance to each of the participating Indigenous Nations and these were considered in the assessment of effects and development of mitigation measures. Plants of traditional importance for food considered in the effects assessment include cranberry (highbush), strawberry, chokecherry, Saskatoon berry, moss berry (lingonberry/bog cranberry), raspberry, moose berry (lowbush cranberry), orange berry (cloudberry), wild carrot, Labrador tea, and mint among others. Plants of traditional importance for medicine considered in the effects assessment include rat root, spruce (gum), Seneca root, beaver pineapple (small yellow pond lily), frog's ears, and chaga (tree fungus) among others. Plants of traditional importance for construction, fuel, and traditional crafts considered in the effects assessment include jack pine, spruce, aspen, birch, willow and sphagnum moss. Mitigation, such as restricting vegetation removal to the approved footprint, buffering sensitive areas where possible, controlling erosion and reclaiming disturbed areas with a native seed mix with commercially available plants of interest to Indigenous Nations, will limit effects to vegetation and wetlands and promote the reestablishment of desired species following Project closure and decommissioning. While the vegetation and wetlands assessment acknowledges vegetation and wetlands are valued by Indigenous peoples and assesses effects on plants of interest to Indigenous peoples identified through the engagement program for the Project, the vegetation and wetlands assessment itself does not assess or predict effects on other valued components, including Indigenous rights. However, conclusions of the vegetation and wetlands assessment are incorporated into the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. Specifically, Volume 2, Chapter 19, Section 19.9.3 of the EIS describes the effects on Indigenous and Treaty rights in the context of availability and health of vegetation used for traditional purposes and incorporates information and results

ID:	**IAAC-153**
	from other VC chapters such vegetation and wetlands. An overview of the information used to inform this assessment is described and presented in Volume 2, Chapter 19, Section 19.1.2.2 and Table 19-1 of the EIS. Although the assessment of potential Project-related effects vegetation and wetlands informed the assessment of potential Project-related effects on current use and on Indigenous and Treaty rights, vegetation and wetlands were not used as a proxy for the assessment of those rights.
Attachment:	No

RESPONSE TO IAAC-154

ID:	**IAAC-154**
Expert Department or Group:	CCN-75 IAAC SDFN-83
Guideline Reference	1.4 Regulatory framework and the role of government 6.4 Mitigation measures
EIS Reference	11.1.1 Regulatory and Policy Setting 11.4.3 Change in Community Diversity 11.4.4 Change in Species Diversity 11.4.5 Change in Wetland Functions 11.4.6 Project Residual Effects Table 11-9
Information Request:	a. Provide an outline of the requirements for the Project under *The Water Rights Act* for a wetland offsetting, restoration or enhancement plan, and an outline of the proposed approach. b. Provide an outline of the use of the Federal Policy on Wetland Conservation as a guiding document and implications for mitigations. c. Provide proposed mitigation measures that would reduce or control the adverse environmental effects to Change in Community Diversity; Change in Species Diversity; and Change in Wetland Functions, respectively. Identify replacement, restoration, compensation or other means, as may be required by federal, provincial, regional, and municipal level regulatory approvals. d. Describe how any additional compensatory measures will contribute to or change the assessment of net gain or loss of wetlands.
Response:	a. The construction of water control works, including drainage, that temporarily or permanently alter the level or flow of water in a waterbody, including wetlands, is regulated by *The Water Rights Act* of Manitoba. The *Act* was amended in 2018 to include wetland offsetting requirements for wetland loss (Government of Manitoba 2019). Alteration or loss of class 3 (seasonal), class 4 (semi-permanent) or class 5 (permanent) wetlands require a license under *The Water Rights Act* and a restoration or enhancement plan prior to disturbance. Swamp wetlands described in this assessment may require a license and restoration or enhancement plan prior to disturbance; however, the *Act* is intended for wetland alterations in the prairie region of Manitoba (Fedorchuk 2021, pers. comm.). No marsh class wetlands, including class 3, 4, or 5, are expected to be lost as a result of the Project (see Volume 2, Chapter 11 of the EIS, Appendix C, Table 11C-1 and Table 11C-2). The Manitoba Boreal Wetlands Conservation Codes of Practice (Manitoba Agriculture and Resource Development 2020) provides guidelines for the management of effects to wetlands from roads including avoidance, minimization and off-sets. Alamos will work with Manitoba Agriculture and Resource Development to determine if appropriate off-sets (e.g., wetland restoration or reclamation) or financial compensation for unavoidable wetland effects from access roads and crossings are required. b. The Federal Policy on Wetland Conservation (Government of Canada 1991) was used to support the need for assessment of potential effects to wetlands and potential effects to other biophysical resources, such as wildlife, that use wetlands. To help avoid or reduce Project effects to wetlands, existing vegetation was

ID:	IAAC-154
	mapped to better understand the location and types of wetlands potentially affected, and opportunities for measures such as protective matting, establishment of 30 m buffers and maintenance of ground vegetation layers and water flow paths were identified. See Volume 2, Chapter 11, Section 11.4.5.2 of the EIS for a complete list of wetland mitigation measures. c. Proposed mitigation measures to help reduce or control Project effects to community diversity, species diversity and wetland functions include equipment arriving at site clean and free of soil and vegetative debris, buffering sensitive areas, such as wetlands, by 30 m where possible, installing silt fencing to reduce deleterious substances from entering wetlands or waterbodies, conducting vegetation clearing when the ground is dry or frozen (where possible), applying a native seed mix to reduce invasive plant establishment and spread, collecting seed or transplanting species of conservation concern (SOCC) if observed occurrences cannot be avoided, and reducing vegetation removal in wetlands to the extent possible. See Volume 2, Chapter 11, Section 11.4 of the EIS for a complete list of mitigation measures. Alamos will work with Manitoba Agriculture and Resource Development to determine if appropriate off-sets or financial compensation for unavoidable wetland effects from access roads and crossings are required. No federally or provincially protected plant species at risk were identified in the Project development area (PDA) and Project effects are not expected based on the habitat requirements for federal and provincial species at risk. There are no known municipal regulatory requirements for wetland loss or alteration and regulatory approval under the Federal Policy on Wetland Conservation (Government of Canada 1991) is not expected as the Project is not located in an area of high historical wetland loss, is not located on federal lands or waters, and is not receiving federal funds. Alamos will work with Manitoba Agriculture and Resource Development to determine if appropriate off-sets (e.g., wetland restoration or reclamation) or financial compensation for unavoidable wetland effects from access roads and crossings are required. d. Wetland compensatory measures could reduce the level of alteration to wetland functions by the Project provided measures are conducted in the local assessment area (LAA). For example, if wetland reclamation or financial compensation is required by Manitoba Agriculture and Resource Development for access roads or crossings, the area of permanent wetland loss due to the Project would be reduced and associated functions provided. **References:** Government of Canada. 1991. Federal Policy on Wetland Conservation. Director General, Canadian Wildlife Service, Ottawa, Ontario. Fedorchuk, F. 2021. Manitoba Agriculture and Resource Development, Manitoba Forestry Branch, Winnipeg, MB. Phone Call on Manitoba Wetland Compensation Requirements for the Boreal Area. February, 10, 2021. Manitoba Agriculture and Resource Development. 2020. Boreal Wetlands Conservation. Codes of Practice. 40 pp.
Attachment:	No

RESPONSE TO IAAC-155

ID:	**IAAC-155**
Expert Department or Group:	CCN-71 CCN-72 CCN-74 SDFN-79 SDFN-80 SDFN-82
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.4 Mitigation measures
EIS Reference	11.4.4.2 Mitigation 11.4.4.3 Project Residual Effect
Information Request:	a. Provide specific mitigation measures that will address the remaining moderate to high, direct and indirect effects and uncertainties (i.e., abundance) surrounding plant SOCCs and plant species of importance to Indigenous Groups during all phases of the Project. b. Identify how Indigenous Groups will be involved in the development, implementation, and follow-up of any mitigation measures for plant species of importance (i.e., harvested species).
Response:	a. To address the remaining moderate to high, direct and indirect effects and uncertainties (i.e., abundance) surrounding plant species of conservation concern (SOCC) and plant species of importance to Indigenous Nations, seed or live stakes of SOCC plant occurrences affected directly or indirectly by the construction or operation phases of the Project will be collected and applied to appropriate habitat outside the local assessment area (LAA) and monitored to evaluate success. Seed of boreal locoweed (*Oxytropis borealis*), a SOCC which was observed on a reclaimed mine rock stockpile at the Gordon site, and seed or live stakes of the SOCC shrubby willow (*Salix arbusculoides*), which was observed 200 m north of the Gordon Project Development Area (PDA) and will be potentially indirectly affected by groundwater drawdown, will be collected and planted in appropriate habitats within the regional assessment area (RAA), outside of the LAA to help mitigate effects to SOCC. Effects to SOCC are not expected during Project decommissioning, reclamation or closure as existing occurrences will be mitigated during construction or operation and moved beyond the extent of expected effects (i.e., LAA). Reclaimed native upland will also be seeded with native plant species, including commercially available plant species of interest to Indigenous Nations, to address direct effects to plants of importance to Indigenous Nations. Indirect effects may occur from weed introduction and spread, dust deposition and groundwater drawdown. These indirect effects will likely be greatest close to the Project sites and mitigation is expected to be effective at limiting changes to land cover types and plants of interest to Indigenous Nations. Key mitigation for indirect effects includes: • Equipment will arrive at Project site clean and free of soil and vegetative debris. Equipment will be inspected and if deemed to be in appropriate condition, will be approved for use and identified with a suitable marker or tag. Equipment that does not arrive at the Project site in appropriate condition will not be allowed on the construction footprint until it has been cleaned, re-inspected, and deemed suitable for use.

ID:	IAAC-155
	• Silt fencing will be installed and maintained to reduce deleterious substances from entering adjacent to wetlands or waterbodies (Volume 3, Chapter 23, Section 23.5.13 of the Environmental Impact Statement [EIS]). • Vegetation clearing will occur during dry and frozen conditions, when possible. • A native seed mix will be used to assist in reducing invasive plant species spread and establishment as well as for erosion control on exposed soils. • Topsoil and subsoil piles will be monitored for invasive plant species growth during construction and corrective measures (e.g., spraying, mowing, hand-pulling) will be implemented to avoid growth and establishment. • Dust suppression, as described in Volume 1, Chapter 6 of the EIS, will be applied. • Conducting ground level cutting/mowing/mulching of wetland vegetation instead of grubbing, where practicable. See Volume 2, Chapter 11, Section 11.4 and Section 11.5 of the EIS for a full list of mitigation measures. b. Alamos plans to engage with directly affected Indigenous Nations with respect to ongoing environmental management and monitoring plans. Alamos is committed to ongoing engagement with potentially affected Indigenous Nations. Management and monitoring plans will describe (as applicable) the location of interventions, planned protocols, lists of measured parameters, analytical methods employed, schedule, resources required as well as parameters to be monitored, methodology and equipment to be used, frequency, duration of monitoring, adaptive management triggers/thresholds, and reporting requirements. Finalization of management and monitoring plans will occur during the permitting stage of Project planning (i.e., following receipt of a federal Decision Statement for the Project under CEAA 2012 and provincial licences for the Project under *The Environment Act* of Manitoba) and will be completed prior to the start of Project construction. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. Information on conceptual monitoring and management plans was provided to Indigenous Nations on April 21 (registered mail) and April 22 (email), 2021. Alamos has not received any comments from Indigenous Nations regarding this material to date. As described in Section 23.3 in Volume 3, Chapter 23 of the EIS, as results become available from follow-up and monitoring programs, they will be shared with Indigenous Nations, in a fashion, frequency, and format determined to be appropriate to the applicable audience. A communication mechanism for providing data will be established to distribute information and accept inquiries from Indigenous Nations. Alamos currently maintains a local office/presence in Lynn Lake that facilitates ongoing communications. During operation, Alamos will maintain an office at the MacLellan site and will consider maintaining a smaller office in Lynn Lake during Project operation to further facilitate communication.
Attachment:	No

RESPONSE TO IAAC-156

ID:	**IAAC-156**
Expert Department or Group:	CCN-70 SDFN-78
Guideline Reference	6.4 Mitigation measures
EIS Reference	11.4.2 Change in Landscape Diversity 11.4.3 Change in Community Diversity
Information Request:	a. Provide clarity on the use of seed mixes in mitigation measures including the identification of contexts in which seeding will occur (i.e., Project phases, following specific activities, reclamation/closure, etc.) and potential effects of seed mixes to other plant species (e.g., SAR, SOCC, species of importance). b. Identify how the selection of the seed mixes will involve and be informed by Indigenous Groups and consider plants species of importance to Indigenous Groups.
Response:	a. A native upland and reclamation seed mix will be applied during Project decommissioning/closure, and where appropriate during Project operation, to mitigate weed abundance and erosion. No effects to species at risk (SAR) are expected due to application of seed mixes as no SAR were documented in the regional assessment area (RAA) and none of the plant species listed by the Manitoba Conservation Data Centre for the Churchill River Upland are listed under the Species at Risk Act. The species composition of the seed mixes has not been determined. To avoid potential effects to species of conservation concern (SOCC) and plants of importance to Indigenous Nations, invasive non-native plants will be avoided. Commercially available plants of interest to Indigenous Nations will be used where appropriate. b. Alamos will meet with Indigenous Nations potentially affected by the Project to identify commercially available seeds of plant species of interest for reclaiming native upland affected by the Project.
Attachment:	No

RESPONSE TO IAAC-157

ID:	**IAAC-157**
Expert Department or Group:	CCN-76 CCN-77 CCN-79 SDFN-84 SDFN-85 SDFN-87
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.5 Significance of residual effects
EIS Reference	11.4.6 Project Residual Effects 11.7.1Significance of Project Residual Effects
Information Request:	a. Describe all considerations and factors that were used to draw conclusions about magnitude and significance of Project residual effects on vegetation and wetlands. i. Clarify how direct and indirect loss of wetlands were considered in the conclusions. (Consider the response to IAAC-147 part c.) ii. Clarify how magnitude, geographic extent, timing, duration, frequency, reversibility, ecological and social context, and Aboriginal traditional knowledge was considered in the conclusion on significance of effects. iii. Clarify how the duration of effects (10 years post reclamation at the Gordon site and 50 years post reclamation at the MacLellan site), were considered in the significance conclusion. Describe the potential extent of interruption in current use of lands and resources by Indigenous peoples, the exercise of rights, and the displacement of Indigenous harvesters from the area.
Response:	a. Factors used to draw conclusions about the magnitude of effects included changes to native vegetation patch size, native land cover type abundance, species of conservation concern (SOCC) occurrences and potential habitat, weed abundance and potential introduction of weeds, and potential for changes in traditional plants (Volume 2, Chapter 11, Section 11.1.5 of the Environmental Impact Statement [EIS]). Effects were considered low if there was a change in the distribution and abundance of the factors but no loss within the local assessment area (LAA), including no loss of large intact native vegetation patches, and no new weeds introduced; moderate if there was loss in the LAA and likely new weed introduction; and high if there was loss in the regional assessment area (RAA) (see Volume 2, Chapter 11, Table 11-2 of the EIS). Uncertainty in existing conditions, potential effects and mitigation success resulted in a higher magnitude rating for SOCC and wetlands. The significance of effects was determined using the residual effects characterization factors identified in Table 11-2 (see Volume 2, Chapter 11, Section 11.1.5 of the EIS), available ecological information on land cover types, SOCC, plants of importance to Indigenous Nations and identified collection locations of plants of interest to Indigenous Nations. 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. While the vegetation and wetlands assessment acknowledges vegetation and wetlands are valued by Indigenous peoples and assesses effects on plants of interest to Indigenous peoples identified through the engagement program for the Project, the vegetation and wetlands assessment itself does not assess or predict effects on other valued components. However, conclusions of the vegetation and wetlands assessment have been incorporated in the assessment of Project effects

ID:	IAAC-157
	on current use by Indigenous peoples in Volume 2, Chapter 17 and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. i. Direct loss of wetland area due to vegetation clearing at the Gordon and MacLellan sites, and potential indirect loss of wetland area and function due to groundwater drawdown were considered in determining the significance of Project effects on wetlands. Although the Project will reduce wetland abundance and functions provided by wetlands in the LAAs and RAA, no wetland class will be lost and all wetland classes affected will remain abundant in the RAA (see Tables IAAC-147-1 and IAAC-147-2 in response to IAAC-147). ii. Magnitude, geographic extent, timing, duration, frequency, reversibility, ecological and social context, and available Indigenous traditional knowledge (i.e., plants of interest to Indigenous Nations) were used to evaluate whether or not a Project effect (Volume 2, Chapter 11, Section 11.4 of the EIS) or Project contribution to cumulative effects (Volume 2, Chapter 11, Section 11.5 of the EIS) were significant by informing the potential for an effect to threaten the persistence or viability of a plant community, plant species, including plants of interest to Indigenous Nations, and wetland function. Project effects that are restricted to the LAA, short-term, and reversible, for example, would not threaten the persistence or viability of a community or plant species. These effects would not be considered significant unless the effect was inconsistent with goals, objectives or recovery plans, action plans and management plans. Volume 2, Chapter 17, Section 17.4.2 of the EIS elaborates on the interaction of effects on vegetation and wetlands and current use including direct and indirect change to vegetation species, community diversity, and wetland function. Changes to availability of and access to resources and harvesting areas are assessed relative to the changes identified in Volume 2, Chapter 11 of the EIS. The conclusions of this assessment supported the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3 of the EIS. An overview of the effects that were incorporated into the assessment of Indigenous and Treaty rights from other VC chapters, such as the vegetation and wetlands assessment, among other VCs (i.e., the Current Use VC) are presented in Volume 2, Chapter 19, Table 19-1 and described in Section 19.1.2.2. iii. As described in Volume 1, Chapter 4, Section 4.3 of the EIS, threshold criteria or standards beyond which a residual environmental effect is considered significant are identified for each environmental effect. A significant adverse residual effect on vegetation and wetlands is defined in Volume 2, Chapter 11, Section 11.1.6 of the EIS as a residual effect that: • Threatens the long-term persistence or viability of a plant species or community in the RAA, including effects that are contrary to or inconsistent with the goals, objectives or activities of recovery plans, action plans and management plans, or • Threatens the long-term persistence or viability of wetland functions and vegetation species of interest to Indigenous communities or contravenes federal or provincial guidelines within the RAA. These significance criteria were weighted equally in the assessment of Project-related effects on vegetation and wetlands.

ID:	IAAC-157
	The duration of potential effects on vegetation and wetlands (10 years post reclamation at the Gordon site and 50 years post reclamation at the MacLellan site) was included in the determination of potential loss of wetlands and change in functions. Given the duration of potential effects, effects were considered long-term and potentially irreversible. However, residual effects were not considered significant because the affected wetland types will remain abundant in the RAA. The reduction in wetland abundance due to the Project (including 10 years post reclamation at the Gordon site and 50 years post reclamation at the MacLellan site) will not result in a loss of wetland community type, a loss of plants that occur in the wetland types affected, or a loss of wetland functions in the RAA (Volume 2, Chapter 11, Section 11.4.5 of the EIS). With application of the mitigation measures identified in Volume 2, Chapter 11, Section 11.4 of the EIS, the residual effects of the Project on vegetation and wetlands (including 10 years post reclamation at the Gordon site and 50 years post reclamation at the MacLellan site) are not predicted to threaten the long-term persistence or viability of a plant species or community in the RAA, nor are they predicted to threaten the long-term persistence or viability of wetland functions and vegetation species of interest to Indigenous communities. The residual effects of the Project on vegetation and wetlands (including 10 years post reclamation at the Gordon site and 50 years post reclamation at the MacLellan site) are similarly not predicted to be contrary to or inconsistent with the goals, objectives or activities of recovery plans, action plans and management plans, nor are they predicted to contravene federal or provincial guidelines (Volume 2, Chapter 11, Section 11.1.1 of the EIS). Therefore, the determination of significance provided in Volume 2, Chapter 11, Section 11.7.1 of the EIS (i.e., that residual effects of the Project on vegetation and wetlands are predicted to be not significant) includes consideration of the duration of effects. As noted above in a. above, the vegetation and wetlands assessment does not assess or predict effects on other valued components, including traditional land and resource use, and therefore the potential extent of interruption in current use of lands and resources by Indigenous peoples, the exercise of rights, and the displacement of Indigenous harvesters from the area were not considered in the significance determination for vegetation and wetlands. However, conclusions of the vegetation and wetlands assessment are incorporated into the assessment of Project effects on traditional land and resource use in Volume 2, Chapter 17. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5 of the EIS assessed changes to access to and availability of plant resources in the context of effects which adversely alter the experience of plant harvesting for Indigenous peoples and their perceived values of current use resources, sites or areas that may result in avoidance. The indirect effects on habitat (i.e., habitat alteration) including alteration to habitat perception is expected to vary depending on the Project component, pathway, and measurable parameter but all effects are limited to within 1 km of the Project Development Area. The significance determination for traditional land and resource use is defined in Volume 2, Chapter 17, Section 17.1.7 of the EIS as “a long-term loss of availability of traditional use resources or access to lands relied on for current use practices or current use sites and areas, such that will be substantially diminished or lost from the RAA.” The significance

ID:	IAAC-157
	determination for traditional land and resource use considered each local Indigenous Nation's current and future use of lands and resources for traditional purposes during the Project construction, operation, and closure, including potential extent of interruption in current use of lands and resources by Indigenous peoples, the exercise of rights, and the displacement of Indigenous harvesters from the area. The significance determination for traditional land and resource use in Volume 2, Chapter 17, Section 17.7.1 concluded that mitigation, the residual environmental effects from the Project on the traditional land and resource use are not significant because they do not result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous Nations to continue traditional practices outside of the PDA will be maintained.
Attachment:	No

RESPONSE TO IAAC-158

ID:	**IAAC-158**
Expert Department or Group:	CCN-78 SDFN-86
Guideline Reference	6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.4 Indigenous peoples 6.6.3 Cumulative effects assessment
EIS Reference	11.5 Assessment of Cumulative Environmental Effects on Vegetation and Wetlands
Information Request:	a. Describe how the potential interaction of pathways of effects (direct and indirect) were considered and how interaction of pathways of effects to landscape diversity, wetland function, and species diversity have potential to contribute to each other and cumulatively interact. b. Update the cumulative effects assessment for vegetation and wetlands to consider the cumulative effects on current use of lands and resources for traditional purposes. Consider the timeframes and potential impacts of post-closure phases for the sites spanning 10-50 years. i. Describe how effects to species of importance to Indigenous Groups and subsequent impacts to rights-based activities were considered in the cumulative effects assessment, any related mitigation measures, and residual effects for all phases of the Project. ii. Describe how indirect effects to species of importance to Indigenous Groups were considered in the residual and cumulative effects assessments.
Response:	a. Potential interaction of direct and indirect effects were considered for changes to community diversity, wetland function and species diversity. As discussed in Volume 2, Chapter 11, Section 11.4.3 and Section 11.4.4 of the Environmental Impact Assessment (EIS), development of the Gordon and MacLellan sites will not only result in the loss of native upland and wetland land cover classes, but dust deposition and weed establishment or spread could further alter species composition of the remaining areas. These changes could include further reduction in the abundance of plants of interest to Indigenous Nations and undocumented species of conservation concern (SOCC) occurring near the Project sites. Changes in the abundance of plants of interest to Indigenous Nations and SOCC due to potentially altered wetland hydrology from site dewatering were also considered in Volume 2, Chapter 11, Section 11.4.4 of the EIS. The abundance of plants of interest to Indigenous Nations and SOCC will be reduced due direct loss of wetland area from Project clearing and potentially indirectly altered in remaining wetland areas due to altered wetland hydrology. Wetlands will, however, remain abundant in the regional assessment area (RAA) (see IAAC-147 response and Table IAAC-147-1 and Table IAAC-147-2 in Appendix A) and no known collection locations of plants of interest to Indigenous Nations will be lost. Drier conditions in remaining wetland areas may increase the abundance of plants of interest to Indigenous Nations preferring drier conditions and reduce the abundance of plants of interest preferring wetter conditions. SOCC abundance is assumed to be reduced. Interaction of direct and indirect effects on wetland function included the direct loss of wetland area and indirect changes in wetland hydrology and potential contribution to changes in permafrost. As discussed in Volume 2, Chapter 11, Section 11.4.5 of the EIS, wetland function will be directly reduced from site

ID:	IAAC-158
	clearing of wetlands and indirectly reduced due to altered wetland hydrology and potential permafrost thawing from groundwater drawdown associated with site dewatering at Gordon and MacLellan sites. These indirect effects may further reduce wetland functions of nutrient cycling and decomposition, carbon sequestration and plant composition and structure. Indirect effects to landscape diversity (i.e., number of patches, patch size and patch perimeter length) are not expected. Remaining patches will remain native and changes in the composition of remaining patches were assessed in the community diversity, species diversity and wetland function sections. b. (including part i). The vegetation and wetland cumulative effects assessment (Volume 2, Chapter 11, Section 11.5 of the EIS) included consideration of potential cumulative effects to vegetation and wetlands for traditional purposes. Potential cumulative loss or reduced abundance of plants of interest to Indigenous Nations due to future physical activities other than the Project were identified. Activities included mineral exploration and development, recreation, resource use, and traditional land use. Cumulative effects on plants of interest to Indigenous Nations are expected to occur continuously following construction, operation, and decommissioning and closure of the Project (including 10 to 50 years following decommissioning and closure of the Gordon and MacLellan sites) and construction of future projects. Cumulative effects may be reversible or irreversible. Effects, however, could not be quantified as data on the extent of future projects and abundance of plants of interest to Indigenous Nations in the RAA are not available (Volume 2, Chapter 11, Section 11.5.4 of the EIS). Project-specific mitigation measures, such as restricting disturbance to approved areas, having equipment arrive clean and free of soil and vegetative debris, buffering sensitive areas where possible, and avoiding known plant collection areas, will also reduce potential cumulative effects (see Volume 2, Chapter 11, Sections 11.4 for a complete list of Project mitigation measures). Future projects are expected to use standard mitigation measures as appropriate to reduce cumulative effects. See the response to a. above for how potential Project residual effects on plants of interest to Indigenous Nations were assessed. While the vegetation and wetlands assessment acknowledges vegetation and wetlands are valued by Indigenous peoples and assesses effects on plants of interest to Indigenous peoples identified through the engagement program for the Project, the vegetation and wetlands assessment itself does not assess or predict effects on other valued components. However, conclusions of the vegetation and wetlands assessment are incorporated into the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 of the EIS and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. Specifically, Volume 2, Chapter 17, Section 17.5 of the EIS assesses cumulative effects on availability and access to traditional lands and resource use as informed by the results of the biophysical VC chapters, including the direct, indirect, and cumulative effects to species of importance to Indigenous Nations as described in the assessment of vegetation and wetlands. Based on this assessment, the Project is anticipated to contribute adversely to effects on the availability of and access to traditionally used resources and to cultural and spiritual sites and areas; however, the magnitude is anticipated to be low due to the small number and widespread nature of past, present and future projects and activities and the history of disturbance in RAA. For the assessment of Indigenous rights, Volume 2, Chapter 19, Section 19.9.3 of the EIS describes the effects on Indigenous and Treaty rights and incorporates information and results from other VC chapters such the direct,

ID:	IAAC-158
	indirect, and cumulative effects of vegetation and wetlands (Volume 2, Chapter 11), availability and access to traditional resources (Volume 2, Chapter 17) and consequently the health and socio-economic conditions of Indigenous peoples (Volume 2, Chapter 19). An overview of the information used to inform this assessment is presented in Volume 2, Chapter 19, Table 19-1 and described in Section 19.1.2.2 of the EIS. ii. See the response to a. above for how potential Project residual indirect effects on plants of interest to Indigenous Nations were considered. Similar to the Project effects assessment, residual cumulative indirect effects to plants of interest to Indigenous Nations from future projects could occur from changes in remaining native upland and wetland communities due to dust, weed establishment or spread, and changes in wetland conditions, including hydrology and permafrost.
Attachment:	No

RESPONSE TO IAAC-159

ID:	**IAAC-159**
Expert Department or Group:	CCN-131 MCCN-102 MCCN-103 SDFN-152
Guideline Reference	8.0 Follow-up and Monitoring Programs
EIS Reference	23.5 Environmental Monitoring and Management Plans
Information Request:	a. Provide details of the follow-up and monitoring programs for the following plans, describing the parameters to be measured, planned timing for follow up studies, monitoring methods, and reporting mechanisms: i. Soil Management and Rehabilitation Plan ii. Vegetation and Weed Management Plan iii. Considering the responses provided for Round 1 Package 1, IAAC-39, clarify how the Surface Water Monitoring and Management Plan and Erosion and Sediment Control Plan will account for follow-up and monitoring specific to vegetation and wetlands. b. Describe how Indigenous Groups will be involved in the development, implementation, monitoring, and follow-up activities for vegetation and wetlands, in the context of the Soil Management and Rehabilitation Plan; Vegetation and Weed Management Plan; Erosion and Sediment Control Plan; and the Surface Water Monitoring and Management Plan. Consider the response provided for Round 1 Package 1, IAAC-39.
Response:	a. The Environmental Management and Monitoring Program (EMMP) sets out the scope for developing and implementing environmental management, follow-up, and monitoring programs. Plans developed under the EMMP will describe the various commitments and requirements (i.e., EIS commitments, regulatory requirements, terms and conditions of Project-specific regulatory approvals, and corporate policies and procedures) related to mitigation and management of the potential effects of the Project. Several of the plans will also include follow-up and monitoring programs that will be designed to accomplish one or more of the following objectives: • To verify the accuracy of the effects assessment. • To determine the effectiveness of measures implemented to mitigate the adverse effects of the Project. • To monitor compliance with regulatory approvals, permits and authorizations. Follow-up programs are typically recommended where there is uncertainty in the Project residual or cumulative effects prediction or known effectiveness of mitigation measures, or where there is a particular risk. In cases where there is uncertainty about the outcome of effects, adaptive management measures are applied. Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated Project effect. Information learned from monitoring actual Project effects is applied and compared to predicted effects. Where a variance between the actual and predicted effects occurs, a determination is made as to whether modifications or other actions are necessary to revise the existing mitigation measures. In cases where there may be no other

ID:	IAAC-159
	mitigating options available, the appropriate information will be shared with the applicable regulatory authorities in a timely manner. The goal of the monitoring program is to provide information to guide any necessary measures and controls to reduce the potential for environmental degradation during the Project phases, and to provide defined action plans and emergency response procedures related to human and environmental health and safety. The EMMP and associated plans demonstrate Alamos' commitment to an appropriate process of environmental protection and management of adverse effects through effective implementation of mitigation measures (Volume 3, Chapter 23, Section 23.1 of the Environmental Impact Statement [EIS]). A general level of detail was provided in the EIS regarding the expected Management and Monitoring Plans (see Volume 3, Chapter 23, Section 23.5). Management and Monitoring Plans will be substantively developed based on the final design details as well as the conditions of EA approval and permitting. Table IAAC-159-1 (attached in Appendix A) provides further details and explanations on the listed Plans from Valued Component chapters and Volume 1, Chapter 2 (Project Description). Management and monitoring plans will describe (as applicable) the location of interventions, planned protocols, lists of measured parameters, analytical methods employed, schedule, resources required as well as parameters to be monitored, methodology and equipment to be used, frequency, duration of monitoring, adaptive management triggers/thresholds, and reporting requirements. Finalization of management and monitoring plans will occur during the permitting stage of Project planning (i.e., following receipt of a federal Decision Statement for the Project under CEAA 2012 and provincial licences for the Project under *The Environment Act* of Manitoba) and will be completed prior to the start of Project construction. i. The monitoring program for the conceptual Soil Management and Rehabilitation Plan (SMRP) has been developed in accordance with the conceptual Vegetation and Weed Management Plan (VWMP). Soil monitoring measures will be the same for both the Gordon site and the MacLellan site. Soil stockpiles will be monitored during construction and operation. Post-reclamation re-vegetation success monitoring will be conducted to facilitate self-sufficient post-reclamation vegetative cover. More specifically, implementation of the SMRP will entail the following follow-up and monitoring activities: • During the construction phase, monitoring methods will generally be through visual inspection and documentation by qualified personnel. Measurable parameters to be monitored include: – The stripping and movement of salvaged topsoil and peat from salvage areas to storage location(s). – Soil salvage for appropriate depths. – Soil handling activities; provide guidance on best management practices. Qualified personnel will also provide on-site guidance on compaction, rutting, and admixing mitigation measures, as required; and monitor, determine, and communicate the need to temporarily halt construction or soil salvage activities due to extreme windy or wet weather conditions

ID:	IAAC-159
	and/or provide alternative activities of salvaging soils of low erosion risk, as necessary. Sampling and analyses of excavated topsoil and peat will be carried out to verify acceptable soil quality criteria for land capability and reclamation suitability. • As the mine open pits advance and Project development expands during the operation phase, qualified personnel will continue to visually monitor and document the movement of excavated topsoil and peat from excavation area to storage location(s); inspect soil stockpiles for compaction, rutting, and admixing; and provide guidance on best management practices, as required. Erosion control measures on storage areas will be inspected as outlined in the Erosion and Sediment Control Plan (ESCP). Surface water and groundwater will be sampled in accordance with the ESCP, the Surface Water Monitoring and Management Plan (SWMMP), and the Groundwater Management and Monitoring Plan (GWMMP). Contamination of soil can occur from unplanned releases of unwanted substances from regular operation activities as well as from surface and groundwater run off or contact onto soil storage areas. Monitoring for soil contamination includes collecting soil samples for analysis under Canadian Council of Ministers of the Environment (CCME) guidelines for Industrial Use, when deemed necessary (CCME 2019). • During the decommissioning/closure phase, qualified personnel will visually monitor/document the movement of stored topsoil and peat from storage location(s) to final placement on reclaimed areas; provide guidance on placement activities of reclamation material for compaction, rutting, and admixing; provide guidance on best management practices, as required; monitor for extreme windy or wet weather conditions and determine the need to temporarily halt soil placement activities, as required. Sampling and analyses of topsoil and peat at final placement will be conducted to verify land capability and reclamation suitability properties of the cover soil. Contamination of soil can also occur when surface water and groundwater with possible contaminants run off or come into contact with areas that have been reclaimed during decommissioning/closure. As noted above, monitoring for soil contamination on reclaimed soil sites includes collecting soil samples for analysis under CCME (2019) guidelines for Industrial Use, when deemed necessary. Surface water and groundwater will be sampled, in accordance with the ESCP, the SWMMP, and the GWMMP, to monitor the potential migration of metal contaminants into soil at final placement. Soil monitoring will be conducted concurrent with vegetation monitoring during the post-closure phase of the Project. Soil quality sampling and analyses will be completed five years after revegetation to determine the soil conditions for revegetation success. Re-vegetation success issues identified during monitoring will be addressed by applying supplementary mitigation measures for soils such as implementing additional erosion controls to mitigate soil runoff on poorly revegetated areas and/or adding soil amendments where needed. Reclaimed areas will be considered successfully reclaimed when re-vegetation is assessed to be composed of mostly native species that are self-sufficient.

ID:	IAAC-159
	Reports from monitoring programs will be submitted annually to regulatory authorities and shared with interested Indigenous Nations and stakeholders. The reporting requirements (i.e., number of reports, timing) will be determined following Project approval. Attached Table IAAC-159-1 (in Appendix A) summarizes monitoring activities during the construction, operation, and decommissioning/closure phases of the Project. Attached Table IAAC-159-2 (in Appendix A) summarizes the soil monitoring schedule by activity during each Project phase. ii. The VWMP will include: • Monitoring of transplanted/seeded species of conservation concern (SOCC) at recipient sites. • Spatial mapping of the actual Project footprint using GIS with comparison to plan. • Project footprint tracking through construction to document the extent of vegetation clearing and quantify direct effects to wetlands. • Verification of indirect wetland effects. • Project footprint tracking through operations to document the extent of vegetation clearing and quantify direct effects to wetlands. • Post-reclamation monitoring undertaken for at least five years after revegetation to determine success. Monitoring will be completed in the revegetated areas to determine the following: – Sustainable vegetation community has been established and successional processes are occurring on the sites. – Vegetation community functions (i.e., erosion control) have been restored. – Soil development is occurring (in accordance with the SMRP). Native vegetation communities, wetlands, and non-native invasive species will be monitored during the life of mine to document the following: • Erosion and/or soil movement (in accordance with the SMRP). • Plant species composition (desirable/seeded species presence or absence). • Plant litter quality and quantity. • Plant cover, diversity, and vigour (i.e., height). • Regulated weed abundance and density. • Surface water and hydrology (in accordance with the SWMMP). • Incidental observations of wildlife. Following construction and revegetation, monitoring will focus on assessing the rate of establishment of a healthy vegetation cover, and mitigation of soil erosion (in accordance with the SMRP). A qualified biologist will complete an inspection of the revegetation during the peak growing season of the calendar year following initial seeding to determine if reseeding or weed control measures area required during the fall. Monitoring thresholds for the revegetated sites are outlined in the attached Table IAAC-159-3 (in Appendix A). Monitoring is expected for the first five years following revegetation.

ID:	IAAC-159
	Pre-determined, randomly selected fixed sampling plots will be established at/prior to the commencement of monitoring. At each sampling plot, plant cover; diversity and vigour; litter quality and quantity; and regulated weed abundance density will be assessed. In addition, representative control plots outside of the PDAs will be selected to determine benchmark plant cover. Plots will be placed at least 10 m apart from each other. Depending on the extent of revegetation, at least three plots will be sampled in each native vegetation community (from baseline conditions) using 0.5 m x 0.5 m quadrats. A permanent marker (e.g., metal stake/nail with label flush to the ground) will be placed in the southwest corner of each quadrat. The quadrat will be square to the cardinal directions. Universal Transverse Mercator (UTM) coordinates will be recorded for the permanent marker at each plot using a Global Positioning System (GPS) with an accuracy of at least 3 m. At each assessment location, vegetation cover of all vascular plant species will be recorded using the Braun-Blanquet cover-abundance scale, as well as total ground cover of non-vascular plants, litter, surface water, and bare ground. Cover and height of each shrub/tree species will also be recorded, if present. Photographs and spatial coordinates of each plot will also be recorded. Photographs showing general site conditions will be taken at fixed locations including the ground cover and four cardinal directions (quadrat included). A plot-based assessment will be used over the entire revegetated area, whereas sensitive features, weed infestations, wetlands, mine rock storage areas (MRSAs), and soil stockpiles will be inspected using a rapid assessment. The rapid assessment includes a random meander for issues of vegetation establishment (e.g., areas of bare ground, signs of erosion, etc.) as well as SOCC, plants of interest to Indigenous Nations, and non-native invasive species. The monitoring locations include areas that have been revegetated, areas of known weed infestations, sensitive features, wetland complexes, and SOCC transplant locations, if conducted. In addition, overburden, soil stockpiles, and MRSAs are to be monitored for signs of physical instability (slope stability, erosion, and vegetation cover). Attached Table IAAC-159-4 (in Appendix A) illustrates the monitoring schedule by activity during construction, operation, decommissioning, closure, and post-closure. Permanent closure will occur when the site is stable, and monitoring is no longer required. For vegetation and wetlands this would occur when vegetation has sufficiently re-established to control erosion and is on a trajectory to a self-sustaining cover with the desired species composition of early successional development. Revegetated areas are to be assessed in the late summer unless otherwise specified. Reports from monitoring programs will be submitted annually to regulatory authorities and shared with interested Indigenous Nations and stakeholders. Annual reporting will be used to document the applied mitigation measures, methods, results, and recommendations for future monitoring or adaptive management. The annual reports will include figures of the PDAs with the location and boundaries of the disturbance, survey locations, regulated weed infestations, and any other environmental constraints. The annual monitoring data will be reviewed internally by Alamos and used to implement adaptive management as appropriate. iii. Changes in surface water quantity and/or quality can affect upland and riparian vegetation and wetland communities that are formed by, or reliant upon,

ID:	IAAC-159
	surface water. Accordingly, the SWMMP will account for follow-up and monitoring specific to vegetation and wetlands by monitoring Project-related changes to surface water quality and quantity downstream of the tailings management facility at the MacLellan site and downstream of the MRSAs at the MacLellan and Gordon sites. The objectives of the SWMMP will be to provide a framework for the following: • Project-specific and best management practices for drainage control and maintenance; dewatering; control of site runoff and seepage; control of groundwater seepage; contact-water collection, storage, and reuse; tailings management; water management (including facilities for collection and treatment); and progressive site rehabilitation (for infiltration and evapotranspiration control), including open pit filling at closure. • A conceptual monitoring plan for surface water quality in near-field, far-field, and reference sites at the Gordon and MacLellan sites, and stream flows and lake levels at sites adjacent to and downstream of the Project (focusing on areas of potential effects) in accordance with regulatory requirements. • An adaptive management plan for surface water quantity and quality that identifies trigger and threshold values and a hierarchical framework for investigation, remediation, and reporting should monitoring show that trigger or threshold values are exceeded. In addition to their applicability to the management and monitoring of Project effects on surface water, the objectives of the SWMMP listed above are also applicable with respect to managing and monitoring the following potential pathways for indirect effects on vegetation and wetlands: • Changes in surface water quantity associated with Project-related drainage effects, dewatering activities, water management activities, progressive site rehabilitation activities, and open pit filling activities at closure. • Changes in surface water quality associated with Project-related runoff and seepage of contact water and non-contact water, contact water and non-contact water management activities, and tailings management activities. Surface water quality and hydrometric monitoring will be conducted during all phases of the Project. The SWMMP will be refined throughout the final design, permitting and licensing processes, during which the locations of surface water quality and hydrometric monitoring stations, and the methodology and frequency of data collection, will be outlined. Preliminary details of the conceptual SWMMP are provided in the response to IAAC-39 (in Round 1, Package 1 of Alamos' IR responses). The ESCP will account for follow-up and monitoring specific to vegetation and wetlands by including monitoring activities that continuously monitor: 1) work areas and 2) ditches, stockpiles, and other earthworks. Monitoring of work areas and ditches, stockpiles, and other earthworks will be conducted continuously during the construction, operation, and decommissioning/closure/post-closure phases of the Project to identify risks associated with erosion and sedimentation. Best Management Practices (BMPs; e.g., Government of Alberta 2011) will be proactively applied to work areas and the effectiveness of those practices will be monitored daily or weekly, as appropriate, particularly prior to and following large rainfall events (>12.5 mm), storms, and spring snow melt. An adaptive

ID:	IAAC-159
	management framework will be used to adjust and modify the application of BMPs as required. Monitoring frequency may be reduced under frozen ground conditions (i.e., in winter). Water quality monitoring for total suspended solids will be undertaken as part of the Aquatic Effects Monitoring Plan and vegetation will be monitored as part of the VWMP which will help assess the effectiveness of the ESCP and through adaptive management the BMPs and mitigations measures can be modified, as appropriate. b. As described in Volume 3, Chapter 23 of the EIS, Alamos will engage with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. This commitment also applies to the design and implementation of monitoring and follow-up activities for vegetation and wetlands in the context of the SMRP, VWMP, ESCP, and SWMMP. Information summarizing Alamos' approach to environmental monitoring and management and outlining the conceptual environmental monitoring and management plans (including the conceptual SMRP, VWMP, ESCP, and SWMMP) was provided to Indigenous Nations on April 26, 2021. A copy of this information package was also shared with IAAC. The information package included a questionnaire to solicit feedback from Indigenous Nations on these plans; however, no feedback has been received to date. Alamos will continue to discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. For example, five Elders of Marcel Colomb First Nation formed a committee with Alamos for environmental monitoring of activities associated with the exploration program deemed to be of high impact (i.e., scout drilling and excavation trenching). In 2020, Marcel Colomb First Nation youth representatives were added to the committee to participate in the environmental monitoring activities. This committee or a similar committee could be engaged for follow up and monitoring of the Project. As results become available from the follow-up and monitoring program, a standard communication procedure will be established to provide data, distribute information, and accept inquiries from Indigenous Nations. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No changes to the conclusions of the EIS or associated follow-up and monitoring programs are proposed based on the additional information received. Responses to comments CCN-131 from Chemawawin Cree Nation, MCCN-102 and MCCN-103 from Mathias Colomb Cree Nation, and SDFN-152 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-159) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project. **References** Canada Land Inventory (CLI). 1967. Land Capability Classification for Forestry. Report No. 5. Canada Department of Forestry and Rural Development.

ID:	**IAAC-159**
	CCME (Canadian Council of Ministers of the Environment). 1999. Canadian soil quality guidelines for the protection of environmental and human health: Introduction. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg. Government of Alberta. 2011. Erosion and sediment control manual. Government of Alberta, Ministry of Transportation. Edmonton, AB.
Attachment:	Appendix A, Attachment IAAC-159

RESPONSE TO IAAC-160

ID:	**IAAC-160**
Expert Department or Group:	IAAC SDFN-94
Guideline Reference	6.1.4 Riparian, Wetland and Terrestrial Environments 6.1.9 Indigenous peoples 6.2.3 Changes to riparian, wetland and terrestrial environments
EIS Reference	12.2.1.1 Background Review 12.2.2.1 Wildlife Species
Information Request:	a. Provide all sources of baseline information (including information on current use of lands and resources) that were used for the determination of wildlife species of importance to be used in the effects assessment for wildlife and wildlife habitat. Describe how this information was gathered / will be gathered and how engagement with Indigenous Groups informed / will inform the selection of wildlife species as "of importance" in the assessment of effects for wildlife and wildlife habitat. b. Provide a comprehensive list of the wildlife species that fall under the definition of "species of importance" for Indigenous Groups in the effects assessment and provide a rationale for any exclusions, and selections of focal/representative species.
Response:	a. As part of the information sharing throughout the engagement process, Project-related information, including for species of importance to Indigenous Nations, was provided in the form of traditional land and resource use (TLRU) studies and other forms of information sharing (see Volume 2, Chapter 12, Section 12.1.2.1 of the Environment Impact Statement [EIS]). This includes Project-specific TLRU studies from Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020); similar reports from three other Indigenous Nations, Peter Ballantyne Cree Nation, Marcel Colomb Cree Nations, and Sayisi Dene First Nation, have yet to be provided. Along with concerns raised by Indigenous Nations through engagement, these sources of baseline information identified key concerns relating to wildlife and wildlife habitat and identified important wildlife species to Indigenous harvesters (generally trapped or hunted species; see Volume 2, Chapter 12, Section 12.1.2.1 of the EIS). The focal species, or assemblages of species, used in the assessment is presented in Table 12-1 in Volume 2, Chapter 12, Section 12.0 of the EIS including rationale for inclusion. b. Table IAAC-160-1 (attached in Appendix A) summarizes all wildlife species mentioned in the above-noted TLRU studies which are considered important species to Marcel Colomb First Nation and the Manitoba Metis Federation, and which species were included as focal species in the assessment (Volume 2, Chapter 12, Section 12.0, Table 12-1 of the EIS). Table IAAC-160-1 provides a comprehensive list of species of importance, and is based on information received to date through engagement with Indigenous Nations. The criteria used to select focal species for assessment included species range and distribution (to identify potential for Project interaction), importance to Indigenous harvesters as identified in Project-specific TLRU studies, conservation status (i.e., species at risk), regulatory considerations (i.e., species with critical habitat), and/or ecological and/or socio-economic importance. As such, species that do not occur in the RAA

ID:	IAAC-160
	(e.g., deer, barren-ground caribou) were not selected as focal species (Table 12-1 in Volume 2, Chapter 12, Section 12.0 of the EIS). **References:** Stantec Consulting Ltd. (Stantec). 2018. A Traditional Land and Resource Use Study for Marcel Colomb First Nation, Manitoba: EA/EIS Version. Prepared for: Marcel Colomb First Nation. Prepared by: Stantec. January 11, 2018. SVS (Shared Value Solutions). 2020. Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study for the Lynn Lake Gold Mine Project: Final Report. Prepared for: Manitoba Metis Federation. February 2020.
Attachment:	Appendix A, Attachment IAAC-160

RESPONSE TO IAAC-161

ID:	**IAAC-161**
Expert Department or Group:	CCN-83 ECCC-28 MCCN-58 SDFN-91 Early Technical Review ECCC-02
Guideline Reference	3.2.2 Valued components to be examined 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
EIS Reference	4.3.2.1 Spatial Boundaries 11.1.4 Boundaries 12.1.4 Boundaries 12.4 Assessment of Residual Environmental Effects on Wildlife and Wildlife Habitat Effects of mine development on woodland caribou Rangifer tarandus distribution; Weir, Mahoney, McLaren, and Ferguson (2007)
Information Request:	a. Describe why the spatial boundaries (i.e., PDA, LAA, and RAA) for wildlife and wildlife habitat were used for the assessment of Project effects to migratory birds, SAR, SOCC, and species of importance to Indigenous Groups and how those boundaries were chosen. b. Provide rationale for the spatial boundaries (i.e., PDA, LAA, and RAA) considered for the Project effects identified for SAR, SOCC, migratory birds, and species of importance to Indigenous Groups (i.e., Boreal Caribou) considering the potential for sensory disturbance from Project activities by comparing to spatial boundaries for other VCs (such as noise and vibration). c. If the spatial boundaries for migratory birds, SAR, SOCC, and species of importance change based off the response to part b, update the assessment of effects as needed. Consider providing an assessment for migratory birds, SAR, SOCC, and species of importance as separate VCs or as sub- VCs of wildlife and wildlife habitat. d. Clarify how the significance of the residual effects assessment accounted for potential effects to migratory birds, SAR, SOCC, and for species of importance to Indigenous Groups. If the residual effects assessment did not account for these, update the assessment of significance for migratory birds, SAR, SOCC, and species of importance to Indigenous Groups based on the information provided in part c.
Response:	a. The following spatial boundaries (see Volume 2, Chapter 12, Section 12.1.4.1 of the Environment Impact Statement [EIS]) were used to assess residual and cumulative Project effects on wildlife and wildlife habitat, including for species at risk (SAR), species of conservation concern (SOCC), migratory birds, and species of importance to Indigenous Nations, in areas surrounding the Gordon and MacLellan sites and access roads: Project Development Area (PDA): encompasses the immediate area in which Project activities and components may occur plus a 30-metre (m) buffer and is the

ID:	IAAC-161
	anticipated area of direct physical disturbance associated with construction and operation of the Project (i.e., the Project footprint). Local Assessment Area (LAA): includes components of the PDA plus a 1-km buffer surrounding each component. The LAA is sufficient at capturing effects to migratory birds, SAR, SOCC, and species of importance to Indigenous Nations because it considers the area in which Project activities might result in indirect habitat loss due to sensory disturbance (i.e., displacement or avoidance; e.g., Laurian et al. 2008; Benitez-Lopez et al. 2010, Shannon et al. 2016) while considering the maximum recommended setback distances for SAR and SOCC (EC 2009; MB CDC 2015). Regional Assessment Area (RAA): includes the PDA, LAA, and an approximate 12-km buffer around components of the PDA. The RAA is used to assess cumulative effects and the significance of Project-specific effects on wildlife and wildlife habitat. The size of the RAA is sufficient at capturing effects to migratory birds, SAR, SOCC, and species of importance to Indigenous Nations because it is based on the home range size of moose, a representative, wide-ranging species which was identified by the Manitoba Department of Agriculture and Resource Development as a key wildlife species of concern. Although moose home ranges vary greatly (< 2 km^2 to > 500 km^2; Thompson and Vukelich 1981; Stenhouse et al. 1995) depending on geographic location, habitat quality, food availability, sex, and age (Snaith and Beazley 2004), the size of the home range (97 km^2) is similar to previously reported estimates in the boreal forest (Hauge and Keith 1981). While the shape of a home range may vary depending on terrain and habitat availability, a circular home range of 97 km^2 would have a diameter of 11.1 km. Using a conservative approach, a 12-km RAA buffer allows for the typical moose home range at the edges of the PDA to be contained within the RAA boundary. b. See a. above for rationale for establishment of the spatial boundaries for the Wildlife and Wildlife Habitat Valued Component (VC). Wildlife have the potential to be disturbed by noise when levels exceed 40 dBA (Shannon et al. 2016). Most of the mine-generated noise is expected to attenuate to 40 dBA at approximately 1 km (Volume 1, Chapter 7 of the EIS). However, it is acknowledged in Volume 2, Chapter 12, Section 12.4.2.4 of the EIS, that the geographic extent of the residual effect to wildlife and wildlife habitat may extend beyond the LAA and into the RAA, due to intermittent noise and vibration attenuation beyond 1 km (e.g., due to blasting). The 2-km Noise and Vibration VC LAA was not adopted by the wildlife assessment because most of the measureable effects to wildlife are anticipated to occur within 1 km. A 2-km LAA would not change conclusions of the wildlife assessment, but would however, dilute direct effects to habitat quantified in the assessment. c. There is no change to the spatial boundaries used in the Wildlife and Wildlife Habitat VC as both are considered appropriate and any potential Project-related environmental effect anticipated to extend beyond the LAA has been assessed accordingly, as described above in 'b'. As a result, no additional assessment or VCs are warranted. d. As described in the response to IAAC-160, migratory birds, SAR, SOCC, and species of importance to Indigenous Nations are incorporated into the existing Wildlife and Wildlife Habitat VC assessment. The determination of significance includes migratory birds, SAR, SOCC, and species of importance to Indigenous Nations and considered potentially different effects (i.e., of change in habitat,

ID:	IAAC-161
	mortality risk, and wildlife health) to SAR and SOCC. As stated in Volume 2, Chapter 12, Section 12.7.1 of the EIS, with mitigation and environmental protection measures, the residual Project effects on wildlife and wildlife habitat (including for migratory birds, SAR, SOCC, and species of importance to Indigenous Nations) are predicted to be not significant. Residual effects are not expected to threaten the long-term persistence or viability of wildlife and wildlife habitat within the RAA, nor are they expected to diminish conservation efforts for the survival, management, and recovery of SAR and SOCC. As in c. above, the existing assessment has considered these species/species types and an updated assessment is not required. **References:** Benitez-Lopez, A., R. Alkemade, and P. Verweij. 2010. The impact of roads and other infrastructure on mammal and bird populations: A meta-analysis. Biological Conservation. 143:1307-1316. EC (Environment Canada). 2009. Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region. Canadian Wildlife Service, Environment Canada, Prairie and Northern Region, Edmonton Alberta. Laurian, C., Dussault, C., Oullet, J.-P., Courtois, R., Poulin, M., Breton, L. 2008. Behavior of moose relative to road network. Journal of Wildlife Management 72(7):1550-1557. MB CDC (Manitoba Conservation Data Centre). 2015. Recommended Development Setback Distances from Birds. Available online at: https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf. Last accessed February 2021. Shannon G., M. McKenna, L. Angeloni, K. Crooks, K. Fristrup, E. Brown, K. Warner, M. Nelson, C. White, J. Briggs J, S. McFarland, and G. Wittemyer. 2016. A synthesis of two decades of research documenting the effects of noise on wildlife. Biol Rev. 91:982–1005. Snaith, T. and K. Beazley. 2004. The distribution, status, and habitat associations of moose in mainland Nova Scotia. Proceedings of the Nova Scotia Institute of Science 42:76-134. Stenhouse G. B, P. B. Latour, L. Kutney, N. MacLean, and G. Glover. 1995. Productivity, survival, and movements of female moose in a low-density population, Northwest Territories, Canada. Arctic 48:57-62. Thompson. I., and M. Vukelich. 1981. Use of logged habitats in winter by moose cows with calves in northeastern Ontario. Canadian Journal of Zoology 59:2103-2114
Attachment:	No

RESPONSE TO IAAC-162

ID:	**IAAC-162**
Expert Department or Group:	ECCC-29 Early Technical Review ECCC-03
Guideline Reference	4.3 Study strategy and methodology 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.3 Species at risk
EIS Reference	12.1.4.2 Temporal Boundaries 12.3 Project Interactions With Wildlife And Wildlife Habitat 12.4.2 Assessment of Change in Habitat Table 12-11
Information Request:	a. Provide a description of how the complete lifespan of the Project was considered in the assessment of the changes to landscape disturbance. Include an assessment of sensory disturbance (including differential potential for sensory disturbance across the Project sites), and indirect effects of the Project for changes to habitat for SAR (including Boreal Caribou). b. Provide a description of the fire history (i.e., areas disturbed by fire and time since the fire) in the RAA and an assessment of any possible forest stand recovery during the life of the Project that would contribute to SAR (including Boreal Caribou) habitat in the RAA. c. Assess how natural changes to future habitat conditions might change the quantification of disturbance for Boreal Caribou habitat, within the RAA over the temporal boundaries of the Project.
Response:	a. The Project is located within the Boreal forest, a dynamic ecosystem naturally shaped by fire. The assessment of Project effects on wildlife and wildlife habitat considered fire as the primary form of landscape disturbance, one that has affected 30.4% of the local assessment area (LAA), as well as the larger regional assessment area (RAA) in the last 40 years (Table IAAC-162-1 in Appendix A). Fire disturbance will continue to alter parts of the LAA and RAA throughout the life of the Project, which was assessed as 31 years from the start of construction to completion of post-closure (Volume 2, Chapter 12, Section 12.1.4.2). Most sensory disturbance (e.g., noise and vibration) is expected to attenuate within 1 km of the Project Development Area (PDA) and is not expected to occur throughout the life of the Project (i.e., it will ceases following the decommissioning phase; Volume 2, Chapter 12, Section 12.4.2.1). Sensory disturbance is expected to be greatest near the sites, particularly during blasting, and less along access roads and PR 391. Sensory disturbance is expected to result in an indirect loss or alteration of habitats located adjacent to the PDA and within the LAA, with decreased species at risk (SAR) use of the LAA during construction and operation. Effects on woodland caribou (*Rangifer tarandus caribou*) are not expected because the species does not inhabit the LAA. This conclusion is based on information from baseline and ongoing Project-specific wildlife field studies, traditional land and resource use studies, traditional ecological knowledge, local knowledge, and the Province of Manitoba's 2020 aerial survey results for the Kamuchawie Management Unit (KMU; Trim 2020, pers. comm.; also see IAAC-166). b. Fire history in the RAA is shown in Map IAAC-162-1 attached to this response (in Appendix A) and is summarized in Table IAAC-162-1 also attached (Appendix A).

ID:	IAAC-162
	If construction was initiated in 2022, and previously burned areas do not re-burn over the next 40 years, 4,321.5 ha of previously burned lands in the RAA may become available to woodland caribou during the pre-construction phase, 10.5 ha during the construction phase, 28,837.1 ha during the operation phase, 318.0 ha during decommissioning and closure, and 16,720.6 ha during the post-closure phase (a total of 45,901.4 ha throughout the life of the Project). c. Fire is expected to continue to naturally alter the RAA over the life of the Project. As some forest patches in the RAA regenerate and become available to woodland caribou, others will burn and become temporarily unavailable. Based on past fire history, approximately one-third of the RAA may be in various stages of regeneration throughout the life of the Project (i.e., 31 years; from 2022 to 2056; Table IAAC-162-1). As described in response 'a' above, evidence suggests that woodland caribou in the KMU do not regularly occur within the RAA, nor have they occurred within the RAA in contemporary times (Stantec Consulting Ltd. 2018, SVS 2020, Trim 2020, pers. comm.; also see Volume 2, Chapter 12, Section 12.2.2.2.). **References:** Environment and Climate Change Canada. 2020. Amended Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada. *Species at Risk Act* Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. xiii + 143pp. Stantec Consulting Ltd. (Stantec). 2018. A Traditional Land and Resource Use Study for Marcel Colomb First Nation, Manitoba: EA/EIS Version. Prepared for: Marcel Colomb First Nation. Prepared by: Stantec. January 11, 2018. SVS (Shared Value Solutions). 2020. Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study for the Lynn Lake Gold Mine Project: Final Report. Prepared for: Manitoba Metis Federation. February 2020. Trim, Vicky. 2020. Wildlife Biologist and Assistant Wildlife Manager (Northeast), Department of Agriculture and Resource Development. Email correspondence with Wildlife Biologist, Stantec Consulting Ltd. Winnipeg, Manitoba, June 22, 2020.
Attachment:	Appendix A, Attachment IAAC-162

RESPONSE TO IAAC-163

ID:	**IAAC-163**
Expert Department or Group:	ECCC-27 IAAC MCCN-57 Early Technical Review ECCC-01
Guideline Reference	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
EIS Reference	4.3.1.1 Selection of Valued Components 12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat 12.1 Scope of Assessment 12.2.2.1 Wildlife Species 12.2.2.3 Habitat 12.4.2 Assessment of Change in Habitat Table 12-1 Volume 4, Appendix N Bird Ba
Information Request:	a. Provide an assessment of direct and indirect changes to habitat specific to migratory birds in terms of anticipated losses, structural changes, and fragmentation of riparian habitat of terrestrial environments and wetlands frequented by migratory birds. i. Provide a summary of potential changes to habitat for migratory birds. ii. Include information on the habitat types (i.e., land cover classes or ecological units) frequented by each category of birds (i.e., migratory and non-migratory), and potential changes in terms of quality, quantity, and distribution for each habitat type. b. Provide species-specific mitigation measures for migratory bird species and species of importance to Indigenous Groups. c. Provide an assessment of direct and indirect effects as well as an assessment of significance of residual effects for the following bird groups: i. migratory bird species present in the Project area (i.e., as described in Chapter 12 and Appendix N); and ii. bird species of importance to Indigenous Groups, such as Mallard, Common Loon, and Lesser Scaup.
Response:	a. The Wildlife and Wildlife Habitat VC assessment uses a habitat-based approach, which focuses on identifying the quantity and composition of land cover types (i.e., habitats) affected by the Project relative to the availability of those land cover classes in the local assessment area (LAA; i.e., within 1 km of the Project), while also identifying how this affects focal species / assemblages. Migratory and non-migratory birds, including species of importance to Indigenous Nations, have been included in the assessment as separate focal species assemblages (Volume 2, Chapter 12, Section 12.0, Table 12-1 of the Environment Impact Statement [EIS] and see response to IAAC-165). Volume 2, Chapter 12, Section 12.4.2 of the EIS provides the assessment for change in habitat for those species assemblages. Attached Table IAAC-163-1 (in Appendix A; from Volume 2, Chapter 12, Section 12.4.2.4, Table 12-12) summarizes the existing and residual conditions for birds relative to each land cover classes within the LAA and attached Map 163-1 (in

ID:	IAAC-163
	Appendix A) illustrates the distribution of those land cover classes within the LAA and RAA. Volume 2, Chapter 12, Section 12.4.2.4 of the EIS provides a thorough description of the residual effects for a direct and indirect change (assessed qualitatively) in habitat, including for birds, for each site and Project phase (i.e., construction, operation, and decommissioning/closure). In summary, an indirect loss or alteration of habitat is expected through sensory disturbance, edge effects, and altered wetland function that can result in habitat avoidance and reduced habitat effectiveness for birds in areas adjacent to the PDA. Sensory disturbances (i.e., noise and artificial light) emitted during construction and operation of the Project are expected to be localized and temporary (i.e., reversible and will cease following the operation phase). The Project will make small contributions to existing edge effects because the sites are already disturbed. The Project will not result in increased habitat fragmentation as core areas of large patches will not be lost (see Volume 2, Chapter 11, Section 11.4.2.3). The PDA will be rehabilitated following guidelines set out in the Conceptual Closure Plan (Volume 3, Chapter 23, Section 23.5.18 of the EIS) with the objective to restore the sites to a satisfactory condition in accordance with provincial legislation. Dewatering activities will be controlled and directed to reduce potential effects to wildlife habitat. However, at the Gordon site, an indirect change in riparian habitat may extend beyond the LAA along Farley Creek, but riparian habitats downstream of the creek will remain unaffected (i.e., Swede Lake, Ellystan Lake; Volume 1, Chapter 9 of the EIS). Riparian, terrestrial, and wetland habitats adjacent to Gordon Lake, Farley Lake, and Farley Creek are likely to be temporarily flooded with pit water, which could alter the vegetation community and habitat for some bird species (e.g., olive-sided flycatcher, rusty blackbird). i. See response to a. above. ii. See response to a. above for changes to migratory and non-migratory bird habitat. b. Volume 2, Chapter 12, Section 12.10 of the EIS summarizes the mitigation measures that will be implemented, where feasible, to mitigate effects to habitat, mortality risk, and wildlife health during the construction, operation, and decommissioning/closure phases at the Gordon and MacLellan sites. In general, these measures apply to all wildlife, including migratory birds and species of importance to Indigenous Nations (Stantec 2018, SVS 2020). Additionally, the Wildlife Monitoring and Management Plan will contain a suite of Project-specific activity restrictions for sensitive wildlife areas or features, including for migratory and non-migratory birds and species important to Indigenous Nations, where provincial guidelines are unavailable (see Table IAAC-163-2, Appendix A). A summary of these mitigation measures is provided in Table IAAC-163-3 (in Appendix A). Also, migratory and non-migratory bird habitat will be rehabilitated following guidelines set out in the Conceptual Closure Plan (Volume 3, Chapter 23, Section 23.5.18 of the EIS) with the objective to restore the sites to a satisfactory condition in accordance with provincial legislation. c. With respect to the bird groups noted: i. Migratory birds are included as a focal species assemblage in the assessment (Volume 2, Chapter 12, Section 12.0, Table 12-1 of the EIS). As described in a. above, the Wildlife and Wildlife Habitat VC assessment provides a thorough

ID:	IAAC-163
	assessment of potential Project-related environmental effects on birds (including subsections specifically discussing migratory birds), for the residual effects for change in habitat (Volume 2, Chapter 12, Section 12.4.2.4 of the EIS), change in mortality risk (Volume 2, Chapter 12, Section 12.4.3.4 of the EIS), and change in wildlife health (Volume 2, Chapter 12, Section 12.4.4.4 of the EIS). A summary of Project interactions with migratory birds, including residual effects, and characterization of those residual effects is provided in the attached Table IAAC-163-4 (in Appendix A) for change in habitat, Table IAAC-163-5 (in Appendix A) for change in mortality risk, and Table IAAC-163-6 (in Appendix A) for change in wildlife health. The criteria for residual effect characterization (Volume 2, Chapter 12, Section 12.1.5, Table 12-3 of the EIS) and the significance definition (Volume 2, Chapter 12, Section 12.1.6 of the EIS) established for the assessment of Wildlife and Wildlife Habitat was applied to all focal species and groups, including for migratory birds. Anticipated residual effects of the Project on migratory birds are not significant. ii. As described in response to c. i. above, the Wildlife and Wildlife Habitat VC assessment provides a thorough assessment of potential Project-related environmental effects on birds (including for species important to Indigenous Nations), for the residual effects for change in habitat (Volume 2, Chapter 12, Section 12.4.2.4 of the EIS) of the EIS, change in mortality risk (Volume 2, Chapter 12, Section 12.4.3.4 of the EIS), and change in wildlife health (Volume 2, Chapter 12, Section 12.4.4.4 of the EIS). Migratory (i.e., waterfowl) and non-migratory (upland gamebirds) bird species important to Indigenous Nations were assessed as part of the migratory bird focal species assemblage identified in Volume 2, Chapter 12, Section 12.0, Table 12-1. Bird species important to Indigenous Nations are presented in Table IAAC-160-1 in IAAC-160, and include waterfowl (ducks, geese, swans) and upland gamebirds (e.g., spruce grouse, willow ptarmigan); mallard, common loon, and lesser scaup have not specifically been identified as important by Indigenous Nations. A summary of project interactions with culturally important species, including residual effects, and characterization of those residual effects is provided in the attached Table IAAC-163-4 for change in habitat, Table IAAC-163-5 (in Appendix A) for change in mortality risk, and Table IAAC-163-6 (in Appendix A) for change in wildlife health. The criteria for residual effect characterization (Volume 2, Chapter 12, Section 12.1.5, Table 12-3 of the EIS) and the significance definition (Volume 2, Chapter 12, Section 12.1.6 of the EIS) established for the assessment of Wildlife and Wildlife Habitat was applied to all focal species and groups, including for culturally important species. Anticipated residual effects of the Project on culturally important species are not significant. **References**: CEAA (Canadian Environmental Assessment Agency). 2017. Guidelines for the Preparation of an Environmental Impact Statement. Pursuant to the *Canadian Environmental Assessment Act*, 2012. Lynn Lake Gold Project, Alamos Gold Inc. Version 2: November 2017. MB CDC (Manitoba Conservation Data Centre). 2015. Recommended Development Setback Distances from Birds. Available at:

ID:	IAAC-163
	https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf. Accessed February 2021. Stantec Consulting Ltd. (Stantec). 2018. A Traditional Land and Resource Use Study for Marcel Colomb First Nation, Manitoba: EA/EIS Version. Prepared for: Marcel Colomb First Nation. Prepared by: Stantec. January 11, 2018. SVS (Shared Value Solutions). 2020. Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study for the Lynn Lake Gold Mine Project: Final Report. Prepared for: Manitoba Metis Federation. February 2020.
Attachment:	Appendix A, Attachment IAAC-163

RESPONSE TO IAAC-164

ID:	**IAAC-164**
Expert Department or Group:	MCCN-55
Guideline Reference	2.4 Application of the precautionary approach 6.3.3 Species at risk 6.4. Mitigation measures
EIS Reference	12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat 12.2.2.2 Species at Risk and Species of Conservation Concern Tables 12-1 and 12-8
Information Request:	a. Provide an assessment of potential effects of the Project on SAR and SOCC (listed COSEWIC species) that were not assessed. Describe the potential Project effects to each of the species. i. Update the effects assessment for wildlife and wildlife habitat using this information. b. Provide mitigation measures and follow- up/monitoring as necessary for the potential effects within the RAA to SAR and SOCC (listed COSEWIC species) identified in part a.
Response:	a. The Wildlife and Wildlife Habitat Valued Component (VC) effects assessment focuses on the species with potential to interact with the Project. As described in Volume 2, Chapter 12, Section 12.0 of the Environmental Impact Statement (EIS) species at risk (SAR) and species of conservation concern (SOCC) that are not known to regularly occupy the regional assessment area (RAA) and are unlikely to be affected by the Project due to a lack of suitable breeding habitat in the RAA, whose geographic ranges overlap the Project are not assessed because it is unlikely that they will interact with the Project. For these reasons, horned grebe (*Podiceps auritus*), yellow rail (*Coturnicops noveboracensis*), short-eared owl (*Asio flammeus*), bank swallow (*Riparia riparia*), and evening grosbeak (*Coccothraustes vespertinus*) are SAR not assessed. Similarly, trumpeter swan (*Cygnus buccinator*) is a SOCC not assessed for the same reasons. The Project does not overlap the modern range of barren-ground caribou (*Rangifer tarandus groenlandicus*) and they are therefore not assessed. The southern border of the modern range (acknowledged by Canadian Wildlife Service and Manitoba Agriculture and Resource Development) is approximately 70 km north of the Project, and information from Indigenous Nations gathered through engagement and Traditional Land and Resource Use studies indicates that barren-ground caribou have not been observed in the vicinity of the Project for several decades. Pond surveys for northern leopard frog (*Lithobates pipiens*) in 2015 and 2016 did not reveal the presence of northern leopard frog, nor are they expected to occur due to range retraction (COSEWIC 2009). As such, northern leopard frog was not assessed (see Volume 2, Chapter 12, Section 12.0 of the EIS). i. Given the rationale provided in ‘a’ above, there remains no pathway of effects for SAR or SOCC not already included in the assessment. Accordingly, an updated effects assessment is not required. b. Part a. of this response summarizes why certain SAR and SOCC were omitted from the assessment. Since these species are not expected to interact with the Project, mitigation measures and follow-up monitoring for potential effects to these

ID:	IAAC-164
	species will not be included in the Wildlife Management and Monitoring Plan. Volume 2, Chapter 12, Section 12.10 of the EIS summarizes the mitigation measures that will be implemented to mitigate potential Project effects on wildlife, including SAR and SOCC expected to interact with the Project, during the construction, operation, and decommissioning/closure phases at the Gordon and MacLellan sites. As stated in Volume 3, Chapter 23, Section 23.5.14 of the EIS, a Wildlife Monitoring and Management Plan (WMMP) will be developed that outlines the wildlife monitoring program for construction, operation, and decommissioning/closure phases to confirm the effectiveness of proposed mitigation measures and verify environmental assessment conclusions for the Project related to wildlife and wildlife habitat (also see response to IAAC-170). The plan will describe the location of interventions, planned protocols, lists of measured parameters, analytical methods employed, schedule, and resources required as well as parameters to be monitored, methodology and equipment to be used, frequency, duration of monitoring, adaptive management triggers, and reporting requirements. Where precise information cannot be determined at this time, information on the approach to determining this information will be provided. For example, situating sampling locations in the receiving environment at exposure and reference locations, and/or co-locating sampling locations and interventions with potential sensitive receptors. Finalization of management and monitoring plans will occur during the permitting stage of Project planning (i.e., following receipt of a federal Decision Statement for the Project under CEAA 2012 and provincial licences for the Project under *The Environment Act* of Manitoba) and will be completed prior to the start of Project construction. Alamos will engage with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. Alamos has committed to adhering to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015). In addition, the WMMP will contain a suite of Project-specific activity restrictions for sensitive wildlife areas or features where provincial guidelines are unavailable (see TAC-GOR-09 and Table IAAC-164-1 in Appendix A). Other mitigation measures for SAR and SOCC include: • Scheduling vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows).

ID:	IAAC-164
	• Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering, install amphibian exclusion screens on intake pumps. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report to the Wildlife and Fisheries Branch of the Department of Agriculture and Resource Development (DARD) for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel

ID:	IAAC-164
	application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Alamos will undertake pre-constructions surveys for bat hibernacula. • Alamos will continue the remote camera survey to share the results with provincial wildlife authorities (e.g., for woodland caribou and wolverine). **References:** Barclay, R.M. 1982. Night roosting behavior of the little brown mat, Myotis lucifugus. Journal of Mammalogy 63(3): 464-474. Barclay, R.M. 1984. Observations on the migration, ecology and reproductive behavior of bats at Delta Marsh, Manitoba. Canadian Field-Naturalist 98(3): 331-336. COSEWIC. 2009. COSEWIC assessment and status report on the Northern Leopard Frog Lithobates pipiens in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ECCC. 2019. General nesting periods of migratory birds. Available online at: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html. Last accessed February 2021. Fenton, M.B., and R.M.R. Barclay. 1980. Myotis lucifugus. 142 Mammalian Species, pp. 1-8. MB CDC (Manitoba Conservation Data Centre). 2015. Recommended Development Setback Distances from Birds. Available at:

ID:	**IAAC-164**
	https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf. Accessed February 2021.
Attachment:	Appendix A, Attachment IAAC-164

RESPONSE TO IAAC-165

ID:	**IAAC-165**
Expert Department or Group:	MCCN-56
Guideline Reference	6.2.3 Changes to riparian, wetland and terrestrial environments
EIS Reference	12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat Table 12-12 Volume 4, Appendix M Mammal Baseline Technical Data Report
Information Request:	a. Provide a map and summary of potential changes to habitat (i.e., similar to what was provided in Table 12-12) for species of importance to Indigenous Groups, such as moose, gray wolf, black bear, and beaver, including the area and percent change within the PDA, LAAs, and RAAs potentially affected by direct and indirect effects of all phases of the Project. b. Provide mitigation measures to address the effects of changes to habitat for species of importance to Indigenous Groups.
Response:	a. See Map-165, Appendix A, Attachment IAAC-165. Species important 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 and all land cover types are considered habitat as a conservative approach in the assessment. Based on their generalist nature, all land cover types within the Regional Assessment Area (RAA; a 12-km buffer of the Project Development Area [PDA]) have the potential to provide habitat for these species (Map IAAC-165). Table 12-7 in Volume 2, Chapter 12, Section 12.2.2 of the Environmental Impact Statement (EIS) summarizes the existing condition of the distribution and quantity of land cover classes in the respective site PDAs relative to the Local Assessment Area (LAA; a 1-km buffer of the PDA) and RAA. Additionally, Table IAAC-165-1 (attached to this response in Appendix A) tabulates the residual effect of habitat loss for moose, gray wolf, black bear, and beaver in the LAA and RAA. The residual change in habitat is 100% loss within the PDA, however some wildlife species are known to inhabit disturbed or anthropogenic habitats (e.g., barn swallow, common nighthawk). Volume 2, Chapter 12, Section 12.4.2.4 and Table 12-12 of the EIS summarizes the residual change in wildlife habitat within the LAA, which is the primary spatial boundary used to assess residual Project effects. Development of the Project PDA will result in the direct loss or alteration of 1,207 ha of wildlife habitat (including 144 ha previously developed lands) in the RAA (176,379 ha), which is a <1% reduction from existing conditions (see Volume 2, Chapter 12, Section 12.5.2.3 of the EIS). Wildlife habitat will be rehabilitated following guidelines set out in the Conceptual Closure Plan (Volume 3, Chapter 23, Section 23.5.18 of the EIS) with the objective to restore the sites to a satisfactory condition in accordance with provincial legislation. For wildlife, this will be a changing continuum as the rehabilitated habitats mature and the corresponding wildlife communities change with it. Indirect change in habitat (i.e., sensory disturbance) was assessed qualitatively as the effects vary by species, season, over time (e.g., habituation). These effects (e.g., noise) can result in reduced habitat effectiveness that is generally confined to

ID:	IAAC-165
	habitats within the LAA (1 km buffer of the PDA) but may occasionally extend into the RAA (e.g., blasting) during the construction and operation phases. b. Volume 2, Chapter 12, Section 12.10 of the EIS summarizes the mitigation measures that will be implemented, where feasible, to mitigate habitat loss or alteration during the construction, operation, and decommissioning/closure phases at the Gordon and MacLellan sites which will also provide mitigation for species of importance to Indigenous Nations. Alamos has also committed the Project to adhering to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015). In addition, the Wildlife Monitoring and Management Plan (WMMP) will contain a suite of Project-specific activity restrictions for sensitive wildlife areas or features where provincial guidelines are unavailable (see Table IAAC-165-2 [attached to this response]). Risk of harm to wildlife will be managed by adhering to timing restrictions and setbacks listed in Table IAAC-165-2 (in Appendix A). Additional Project mitigation measures specific to habitat for species of importance to Indigenous Nations include: • Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (e.g., Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA.

ID:	IAAC-165
	• Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations.

ID:	IAAC-165
	Follow-up and monitoring activities included in the WMMP specific to habitat for species of importance to Indigenous Nations will include: • Alamos will undertake pre-constructions surveys for raptor nests. • Alamos will continue the remote camera survey (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and share the results with provincial wildlife authorities. • Alamos will monitor beaver activity to help manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk. **References:** ECCC. 2019. General nesting periods of migratory birds. Available online at: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html. Last accessed February 2021. MB CDC (Manitoba Conservation Data Centre). 2015. Recommended Development Setback Distances from Birds. Available at: https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf. Accessed February 2021.
Attachment:	Appendix A, Attachment IAAC-165

RESPONSE TO IAAC-166

ID:	**IAAC-166**
Expert Department or Group:	SDFN-95 SDFN-96 SDFN-98 SDFN-99 Advice from ECCC to the Agency
Guideline Reference	2.4 Application of the precautionary approach 4.3 Study strategy and methodology 6.4 Mitigation measures
EIS Reference	12.2.2.2 Species at Risk and Species of Conservation Concern 12.4.2.4 Project Residual Effect for Change in Habitat 12.7.1 Significance of Project Residual Effects
Information Request:	a. Describe the limitations of the information gathered through the use of camera surveys in the effects assessment and on the conclusions drawn about the presence of caribou in the Project area. b. Describe how the effects assessment considered and accounted for the lack of Boreal Caribou range information for the KMU, and the uncertainties in assessing Project contributions to disturbance in the Manitoba North Range (MB9) and the target of 65% undisturbed habitat. c. Describe how the proponent will continue to incorporate best available information for the data on the Boreal Caribou KMU range as well as population size, trend, or distribution data as it becomes available, into monitoring, follow-up, and adaptive management. Describe additional mitigation measures that may need to be implemented. d. Describe how mitigation measures for Boreal Caribou habitat disturbance considered the potential absence of data in parts a and b. i. Identify any mitigation measures that account for the uncertainties identified in parts a and b. ii. Describe the follow-up, monitoring and adaptive management that will verify the effectiveness of mitigation measures and verify the predictions presented in the EIS.
Response:	a. The camera trap study was one of several data gathering techniques used to draw conclusions about the presence of woodland caribou in the Project area. Other information used included aerial survey data, Indigenous and local knowledge, traditional land and resource use study results, and information shared during engagement with provincial and federal regulators. Uncertainty associated with the distribution of woodland caribou relative to the Project was considered in assessing the prediction confidence of the determination of significance for the Wildlife and Wildlife Habitat VC (see Volume 2, Chapter 12, Section 12.8 of the Environmental Impact Statement [EIS]). The camera trap study has employed 32 cameras operating continuously from April 2015 until present and at times up to 52 cameras were used to increase spatial coverage (see Volume 4, Appendix M of the EIS). The survey design limits spatial replication and spatial coverage that would otherwise be increased if cameras were relocated annually. However, the current design will allow for ongoing monitoring during the construction and operation phases of the Project (Volume 2, Chapter 12, Section 12.9 of the EIS) by maintaining long-term data collection locations.

ID:	IAAC-166
	In general, studies that employ remote cameras can be subject other limitations such as: camera model, camera settings, camera detection and triggering systems, camera placement and orientation, temperature differentials, wildlife behavioural responses (e.g., interest in cameras by moose or black bear; Meek et al. 2015). Despite this, remote cameras have been shown to be an effective tool in surveying for wildlife (Wearn and Glover-Kapfer 2019). While there can be spatial and systematic limitations in using remote cameras to understand woodland caribou use of the regional assessment area (RAA), our current understanding of woodland caribou use of the RAA is relatively robust as it is based on a combination of data from field surveys, provincial surveys, and Indigenous and local knowledge. As a result, these limitations of the remote camera study have not resulted in bias in the conclusions drawn about the presence of caribou in the Project area. b. In January 2018, Alamos engaged federal regulators from the Canadian Environmental Assessment Agency, Environment and Climate Change Canada, and the Canadian Wildlife Service (CEAA et al., pers. comm. 2019a) and a second meeting was subsequently held in December 2019 that included the provincial regulator from Manitoba Agriculture and Resource Development (CEAA et al., pers. comm. 2019b) to discuss the potential interaction between the Project and woodland caribou. The meetings established that the federal regulators would like the Project to be assessed as though woodland caribou may interact with the Project but that they would defer to provincial wildlife authorities to provide the best available knowledge about the distribution and abundance of the woodland caribou using the Kamuchawie Management Unit (KMU) while also considering the disturbed state of the management unit. The Province expressed that the amount of new development associated with the Project is relatively small and contributes little to disturbance within the KMU (most disturbance is due to forest fires), and recommends Project focus should be on the monitoring plan and rehabilitation of habitat during the decommissioning/closure phase (CEAA et al., pers. comm. 2019b). Volume 2, Chapter 12, Section 12.4.2.4 of the EIS contains the residual effects assessment of the change in habitat as it relates to woodland caribou and the provincial KMU and the federal Manitoba North Range (MB9), including the target of 65% undisturbed habitat and the composition of natural and anthropogenic within those spatial units (Table 12-13 in Volume 2, Chapter 12, Section 12.4.2.4 of the EIS). As described in a. above, the current, relatively robust understanding of the distribution of woodland caribou was used in the assessment and the uncertainty around the precise distribution of woodland caribou relative to the Project was considered in assessing the prediction confidence of the determination of significance for the Wildlife and Wildlife Habitat VC (see Volume 2, Chapter 12, Section 12.8 of the EIS). Given the uncertainty described above, the assessment relied on information provided by local resource users and in Project-specific traditional land and resource use (TLRU) reports (see Volume 2, Chapter 12, Section 12.1.2.1 of the EIS). This includes Project-specific TLRU studies from Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020). These data sources capture information that spans decades and the results indicate that woodland caribou do not regularly occur within the RAA. Additionally, there are no recent traditional ecological knowledge observations or accounts of rights-based hunting activity for woodland

ID:	IAAC-166
	caribou in the RAA (Stantec 2018; SVS 2020; and Volume 2, Chapter 12, Section 12.2.2.2 of the EIS). Therefore, there is a reduced reliance on formal abundance (e.g., population size and trend within the KMU) and distribution data (typically collected by the province) and a greater reliance on TLRU information, which provides a relatively high degree of confidence regarding caribou distribution, to assess Project effects on woodland caribou and the resulting significance determination (i.e., the Project is not expected to interact with woodland caribou). c. Alamos has been engaging with the Province and understands that efforts to delineate a woodland caribou range within the KMU are underway. The Province completed aerial surveys within the KMU in mid-March 2020 and found small groups of woodland caribou west and south of the RAA (an approximate 12-km buffer of the Project Development Area (PDA); Trim 2020, pers. comm.). There were no woodland caribou detected within the RAA during this survey and there are no recent Traditional Ecological Knowledge observations or accounts of rights-based hunting activity for woodland caribou in the RAA. Any new information related to woodland caribou distribution will be considered in the Wildlife Monitoring and Management Plan (WMMP). As stated in Volume 3, Chapter 23, Section 23.5.14 of the EIS, this Plan will outline the wildlife monitoring program for construction, operation and decommissioning/closure phases to confirm the effectiveness of proposed mitigation measures and verify environmental assessment conclusions for the Project related to wildlife and wildlife habitat (also see IAAC-170). This includes continuing the camera trap study (Volume 2, Chapter 12, Section 12.0 of the EIS), as requested by the Province (CEAA et al., pers. comm. 2019b) and incorporating adaptive management measures (see IAAC-170 response) to provide the ability to implement additional mitigation or monitoring measures if necessary. Mitigation measures may include postponing site preparation activities until after June 30 if boreal caribou are detected within the Local Assessment Area surrounding the sites (i.e., within 1 km of the Project). d. As described in b. above, the assessment, mitigation measures, and WMMP have been conservatively developed under the assumption that woodland caribou may interact with the Project, despite evidence suggesting that the species does not regularly occur within the RAA. Mitigation measures have also been developed in consideration of the provincial woodland caribou recovery strategy (MBWCMC 2015). Additionally, while uncertainties exists relating to formal abundance data (typically collected by the province), there is relatively high confidence in the distribution of the species owing to TLRU data (Stantec 2018; SVS 2020). i. The WMMP will focus on continuing to monitor the distribution of woodland caribou in the RAA and will not seek to reduce uncertainty as it relates to the species' abundance in the RAA as they are unlikely to interact with the Project. The WMMP (see 'ii' below) will incorporate adaptive management framework and mitigation measures that account for the uncertainty of woodland caribou distribution in the RAA, described in a. and b. above, include • Scheduling vegetation clearing activities to occur outside the boreal caribou calving and calf-rearing period from May 1 to June 30; and • Postponing site preparation activities until after June 30 if boreal caribou are detected within the LAA surrounding the sites (i.e., within 1 km of the Project).

ID:	IAAC-166
	More general mitigation measure for change in habitat are also described in Volume 2, Chapter 12, Section 12.4.2.3 of the EIS and include: • Design for limitation of construction footprint (i.e., PDA) to the extent possible. • Design for use of down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Design for restriction of unauthorized access to habitat adjacent to the PDA. • Design for provision of low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Flag environmentally sensitive areas (e.g., mineral licks) prior to clearing and construction, and evaluation of the features for additional mitigation measures (e.g., setbacks). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance. ii. The WMMP includes the commitment to continue the remote camera survey (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and sharing the results with provincial wildlife authorities. The objective of the remote camera study is to assess the presence/absence of woodland caribou in the LAA and RAA and the measurable parameter for the remote camera study is the presence/absence of woodland caribou in the LAA and RAA. Decision triggers and thresholds for action will be incorporated into the WMMP to outline planned actions if woodland caribou are detected within the LAA or RAA, depending on the Project phase. Results from monitoring will be used through an adaptive management process to adjust mitigation measures and to modify plans on an ongoing basis, if required. Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated Project effect. Information learned from monitoring actual Project effects is applied and compared to predicted effects. Where a variance between the actual and predicted effects occurs, a determination is made as to whether modifications or other actions are necessary to revise the existing mitigation measures. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. Information on conceptual monitoring and management plans was provided to Indigenous Nations on April 21 (registered mail) and April 22 (email), 2021. Alamos has not received any comments from Indigenous Nations regarding this material to date. **References:** Canadian Environmental Assessment Agency, Environment and Climate Change Canada, Canadian Wildlife Service, Alamos Gold and Stantec. 2019a. Alamos Gold Preliminary Caribou Assessment Teleconference, January 18, 2019. Canadian Environmental Assessment Agency, Environment and Climate Change Canada, Canadian Wildlife Service, Manitoba Department of Agriculture and

ID:	IAAC-166
	Sustainable Development, Alamos Gold and Stantec. 2019b. Alamos Gold Preliminary Caribou Assessment Teleconference, December 3, 2019. MBWCMC (Manitoba Boreal Woodland Caribou Management Committee). 2015. Conserving a boreal icon, Manitoba's boreal woodland caribou recovery strategy. Manitoba Conservation and Water Stewardship. Winnipeg, Manitoba. 30 pp. Meek, P., G. Ballard, and P. Fleming. The pitfalls of wildlife camera trapping as a survey tool in Australia. *Australian Mammology*. DOI:10.1071/AM14023 Stantec Consulting Ltd. (Stantec). 2018. A Traditional Land and Resource Use Study for Marcel Colomb First Nation, Manitoba: EA/EIS Version. Prepared for: Marcel Colomb First Nation. Prepared by: Stantec. January 11, 2018. SVS (Shared Value Solutions). 2020. Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study for the Lynn Lake Gold Mine Project: Final Report. Prepared for: Manitoba Metis Federation. February 2020. Trim, Vicky. 2020. Wildlife Biologist and Assistant Wildlife Manager (Northeast), Department of Agriculture and Resource Development. Email correspondence with Wildlife Biologist, Stantec Consulting Ltd. Winnipeg, Manitoba, June 22, 2020. Wearn, O. and P. Glover-Kapfer. 2019. Snap happy: camera traps are an effective sampling tool when compared with alternative methods. *Royal Society Open Science*. https://doi.org/10.1098/rsos.181748
Attachment:	No

RESPONSE TO IAAC-167

ID:	**IAAC-167**
Expert Department or Group:	ECCC-30
Guideline Reference	1.4 Regulatory framework and the role of government 2.4 Application of the precautionary approach 4.3 Study strategy and methodology 6.4 Mitigation measures
EIS Reference	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 Amended Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal Population
Information Request:	a. Use the most geographically relevant data and best available information, in the context of caribou management ranges to: i. provide mitigation measures to lessen or avoid effects to Boreal Caribou in the RAA for any new disturbance (i.e., outside of the existing anthropogenic footprint); and ii. provide all proposed mitigation measures that will be implemented, considering all feasible compensative mitigation measures (i.e., offsetting and the proposed methods to restore, enhance, rehabilitate or create caribou habitat) to lessen the residual effects to Boreal Caribou habitat loss. b. Describe how potential residual effects to Boreal Caribou were considered in the conclusion of no significant effects to wildlife and wildlife habitat.
Response:	a. In relation to the Kamuchawie Management Unit (KMU): i. Mitigation measures have been developed in consideration of the provincial woodland caribou recovery strategy (MBWCMC 2015) and as described in the response to IAAC-166, the WMMP will incorporate an adaptive management framework and mitigation measures that have been developed to reduce harm to woodland caribou and their habitats, and include: • Scheduling vegetation clearing activities to occur outside the boreal caribou calving and calf-rearing period from May 1 to June 30; and • Postponing site preparation activities until after June 30 if boreal caribou are detected within the LAA surrounding the sites (i.e., within 1 km of the Project). More general mitigation measures are also described in Volume 2, Chapter 12, Section 12.4.2.3 and 12.4.3.3 of the EIS and include: • Design for limitation of construction footprint (i.e., PDA) to the extent possible. • Design for use of down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Design for restriction of unauthorized access to habitat adjacent to the PDA.

ID:	IAAC-167
	• Design for provision of low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Flag environmentally sensitive areas (e.g., mineral licks) prior to clearing and construction, and evaluation of the features for additional mitigation measures (e.g., setbacks). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance. • Implementing road safety measures such as speed limits and signage to reduce the chance for wildlife collisions both on site and between sites. • Noise and light abatement measures for machinery and buildings will be used where practicable to reduce sensory disturbance to wildlife. ii. The proposed mitigation measures for woodland caribou do not include habitat compensation because there is no evidence to suggest the Project will affect critical habitat for the species. Based on previous discussions with federal and provincial regulators (see response to IAAC-166 b.), the Province has expressed a preference for the Project to focus mitigation efforts using the adaptive management framework of the monitoring plan and to engage in rehabilitation of habitat during the decommissioning/closure phase (CEAA et al., pers. comm. 2019). b. Evidence to date suggests that woodland caribou are unlikely to interact with the Project given their known distribution within the KMU and development of the existing sites will contribute a small amount of additive habitat loss (205 ha) that is 0.01% of the KMU and 1.4% of the Local Assessment Area (see response to IAAC-166 and Volume 2, Chapter 12, Section 12.4.2.4 of the EIS). Following mitigation to reduce harm to the species or its habitat (e.g., scheduling vegetation clearing activities to occur outside the boreal caribou calving and calf-rearing period from May 1 to June 30, implementation of the Wildlife Monitoring and Management Plan, and implementation the Closure Plan [i.e., that outlines the rehabilitation strategy for the decommissioning/closure phase]), the magnitude of the residual effects is characterized as low because there is a limited pathway of effects for the Project to interact with woodland caribou. The small amount of habitat being affected, the level of existing disturbance, and the lack of evidence to suggest woodland caribou may interact with the Project have contributed to the determination of significance (see response to IAAC-168 for how SAR/SOCC were incorporated into the determination of significance). **References:** Canadian Environmental Assessment Agency, Environment and Climate Change Canada, Canadian Wildlife Service, Manitoba Department of Agriculture and Sustainable Development, Alamos Gold and Stantec. 2019. Alamos Gold Preliminary Caribou Assessment Teleconference, December 3, 2019. MBWCMC (Manitoba Boreal Woodland Caribou Management Committee). 2015. Conserving a boreal icon, Manitoba's boreal woodland caribou recovery strategy. Manitoba Conservation and Water Stewardship. Winnipeg, Manitoba. 30 pp.

ID:	**IAAC-167**
Attachment:	No

RESPONSE TO IAAC-168

ID:	**IAAC-168**
Expert Department or Group:	ECCC-25
Guideline Reference	6.4 Mitigation measures 6.5 Significance of residual effects
EIS Reference	12.4.2.3 Mitigation for Change in Habitat 12.4.3.3 Mitigation 12.4.4.3 Mitigation Table 12-16
Information Request:	a. Describe the mitigation and adaptive management measures for each SAR, SOCC, and species of importance to Indigenous Groups that will be employed to: i. address direct, indirect, and cumulative effects; and ii. ensure that these effects are minimized or avoided. b. Describe how the determination of "low" magnitude effect for mortality risk for wildlife and wildlife habitat considered SAR and SOCC, as effects to these species may have the potential to be greater in magnitude. i. If SAR and SOCC were not included in the determination of significance and the low magnitude characterization for mortality risk, update the effects assessment to include these SAR and SOCC. ii. Describe how mitigation measures identified in part a are considered in the determination of magnitude of effects.
Response:	a. Volume 2, Chapter 12, Section 12.10 of the Environmental Impact Statement (EIS) summarizes the mitigation measures that will be implemented, pending final design, to mitigate effects to habitat, mortality risk, and wildlife health during the construction, operation, and decommissioning/closure phases of the Project. In general, these measures apply to all wildlife, including migratory birds, SAR/SOCC, and species of importance to Indigenous Nations (Stantec 2018, SVS 2020). Additionally, the Wildlife Monitoring and Management Plan will contain a suite of Project-specific activity restrictions for sensitive wildlife areas or features, including for migratory and non-migratory birds and species important to Indigenous Nations, where provincial guidelines are unavailable. A summary of these mitigation measures is provided in Table IAAC-168-1 (attached to this response in Appendix A). Additionally, mitigation measures for cumulative effects include: • Adherence to the Project-specific Wildlife Monitoring and Management Plan (Volume 3, Chapter 23, Section 23.5.15). • Implementation of the Conceptual Closure Plan (Volume 3, Chapter 23, Section 23.5.18). • Continuation of the remote camera study in the RAA to monitor large mammal distributions. • Implementation of reclamation plans that involve revegetating or decommissioning new access trails and/or roads. • Use of existing roads and trails where possible. • Implementation of road safety measures such as speed limits and signage to reduce the chance for wildlife collisions both on-site and between sites.

ID:	IAAC-168
	• Implementation of measures to control access on access roads during the decommissioning/closure phase (e.g., gates). SAR and SOCC are not uniquely susceptible to a change in mortality risk during the construction phase in comparison to other species. Implementing mitigation measures and adhering to timing restrictions and/or MB CDC (2014) activity restriction setback buffers will reduce the potential Project effects on SAR and SOCC. Common nighthawk is the species most likely to be affected as they can nest in disturbed habitats and are present within the LAA. Mitigation measures and adherence to timing restrictions and/or activity restriction buffers for clearing and construction will reduce the potential Project effects on migratory birds breeding in the LAA. Results from monitoring will be used through an adaptive management process to adjust mitigation measures and to modify plans on an ongoing basis, if required. Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated Project effect. Information learned from monitoring actual Project effects is applied and compared to predicted effects. Where a variance between the actual and predicted effects occurs, a determination is made as to whether modifications or other actions are necessary to revise the existing mitigation measures. Also, see the response to IAAC-170 as it relates to the incorporation of adaptive management in the Wildlife Monitoring and Management Plan for the Project. An example of adaptive management during construction in the PDA would be if SAR, SOCC, and/or species of importance to Indigenous groups were encountered, construction activities would be restricted in the area and appropriate mitigation such as setbacks or buffers would be applied to protect the specific SAR or SOCC and/or species of importance to Indigenous groups. The period of restricted activity applied would be specific to the species encountered (e.g., fledging period for a nesting bird). Additionally, appropriate notification and documentation would be undertaken (e.g., Canadian Wildlife Service). As described in IAAC-164, in the unlikely event that woodland caribou are detected within the LAA, activities will also be postponed until after June 30. i and ii. Please see the response to a. above. b. As described in Volume 1, Chapter 4, Section 4.3 of the EIS, threshold criteria or standards beyond which a residual environmental effect is considered significant are identified for each environmental effect. A significant adverse residual effect on wildlife and wildlife habitat is defined in Section 12.1.6 of the EIS as a residual effect “that threatens the long-term persistence or viability of a wildlife species in the RAA, including effects that are contrary or inconsistent with the goals, objectives, and activities of recovery strategies, action plans, and management plans.” This significance definition applies not only to secure wildlife species and their habitats, but also to wildlife SAR/SOCC and their habitats. Section 4.3 of the EIS also describes that, following the analysis of environmental effects pathways and mitigation measures, the residual environmental effects (i.e., the environmental effects that remain after mitigation has been applied) are predicted based on the following characterization criteria: direction, magnitude, geographic extent, timing, frequency, duration, reversibility, and ecological/socio-economic context. The VC-specific definitions for each of these criteria with respect to wildlife and wildlife habitat are presented in Table 12-3 of Volume 2, Chapter 12, Section 12.1.5 of the EIS. As with the significance definition, each of

ID:	IAAC-168
	these VC-specific residual effect characterization criteria applies not only to secure wildlife species and their habitats, but also to wildlife SAR/SOCC and their habitats. While wildlife SAR/SOCC are inherently less common than other more secure species, which may make them more sensitive to population stressors, there are limited pathways for wildlife SAR/SOCC to be affected by the Project. The primary way in which wildlife SAR/SOCC can be affected by the Project is through a change in habitat. Therefore, the assessment employed more conservative thresholds for the magnitude criteria related to a residual change in habitat for wildlife SAR/SOCC than for the magnitude criteria related to a residual change in habitat for secure wildlife species. For example, 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" (see Volume 2, Chapter 12, Table 12-3 of the EIS). The likelihood of the Project resulting in a residual change in mortality risk and/or wildlife health affecting SAR/SOCC is much lower than the likelihood of the Project resulting in a residual change in habitat affecting wildlife SAR/SOCC. Given the relatively lower abundance of wildlife SAR/SOCC in the LAA, the likelihood of the Project resulting in a residual change in mortality risk and/or wildlife health affecting SAR/SOCC may even be lower than the likelihood of the Project resulting in a residual change in mortality risk and/or health affecting secure wildlife species. For example, potential vehicle collisions with wildlife would be more likely to involve secure species than SAR/SOCC because SAR/SOCC are relatively less common in the LAA and therefore less likely to directly interact with Project vehicles (and less likely to directly interact with Project activities and components in general). Thus, a potential change in mortality risk and/or wildlife health is not the primary way in which wildlife SAR/SOCC have potential to be affected by the Project, and the assessment therefore did not employ more conservative thresholds for the magnitude criteria related to a residual change in mortality risk and/or wildlife health affecting SAR/SOCC. As indicated in Volume 2, Chapter 12, Table 12-3 of the EIS: • A 'negligible' magnitude residual change in mortality risk and wildlife health is defined as one in which "a measurable change in the abundance of wildlife in the LAA is not anticipated." • A 'low' magnitude residual change in mortality risk and wildlife health is defined as one in which "a measurable change in the abundance of wildlife in the LAA is not anticipated, although temporary local shifts in distributions in the LAA might occur." • These VC-specific residual effect characterization criteria, like the other criteria specified in Table 12-3, apply not only to secure wildlife species, but also to wildlife SAR/SOCC. Effect pathways that may result in a change in mortality risk and/or health for wildlife SAR/SOCC are unlikely to result in a measurable change in the abundance of wildlife in the LAA (i.e., negligible magnitude), although temporary local shifts in distributions in the LAA might occur (i.e., low magnitude) in response to sensory disturbance from Project-related noise and activity. • In addition to the rationale provided above, another reason that the magnitude criteria for a change in mortality risk and wildlife health do not explicitly reference SAR/SOCC is because the environmental effects are assessed

ID:	IAAC-168
	qualitatively and each focal species or species group is assessed relative to their respective relationship with the effect pathways, mitigation measures, and residual effects. i. An updated effects assessment is not required as SAR/SOCC were included in the assessment of significance (see response to 'b' above). ii. The purpose of mitigation measures is to reduce the severity, including the magnitude, of potential effects. In the EIS, magnitude is one of several criteria used to characterize the residual effects for wildlife and wildlife habitat (see Table 12-3 in Volume 2, Chapter 12, Section 12.1.5 of the EIS). As described in Volume 1, Chapter 4 (Environmental Effects Assessment Scope and Methods), Section 4.2.3 of the EIS, residual effects are characterized following application of the mitigation measures. Therefore, in the wildlife assessment, the magnitude of effects to SAR/SOCC and species important to Indigenous Nations were characterized following application of the mitigation measures outlined in 'a' above.
Attachment:	Appendix A, Attachment IAAC-168

RESPONSE TO IAAC-169

ID:	**IAAC-169**
Expert Department or Group:	CCN-85 SDFN-93
Guideline Reference	5.0 Engagement with Indigenous Groups and Concerns Raised 6.3.4 Indigenous peoples 6.5 Significance of residual effects
EIS Reference	12.1.5 Residual Effects Characterization 12.1.6 Significance Definition 12.4.5 Summary of Project Residual Environmental Effects on Wildlife and Wildlife Habitat Tables 12-2 and 12-3
Information Request:	a. Describe how the residual effects characterization for wildlife and wildlife habitat (i.e., direction, magnitude, geographic extent, timing, frequency, duration, reversibility, and ecological and socio- economic context) considered the specific effects to species that are of significance or importance to Indigenous Groups. b. Considering the response to IAAC-161, describe how characterization of significance of residual effects to wildlife and wildlife habitat considered and incorporated the potential for effects to species of importance to Indigenous Groups. If significance criteria did not include this consideration, update and provide the significance determination with this information.
Response:	a. As described in IAAC-160, the Wildlife and Wildlife Habitat VC effects assessment incorporated species of importance to Indigenous Nations as focal species (Volume 2, Chapter 12, Section 12.0, Table 12-1 of the Environmental Impact Statement [EIS]) and as such, assessed them relative to the potential Project-related environmental effects of change in habitat, mortality risk, and wildlife health. While the residual effects were not presented by species or group as was done with migratory birds and species at risk, they were included in the overall residual effects assessment and subsequent characterization of environmental effects for the construction, operation, and decommissioning/closure phases. For example, Section 12.4.2.4 describes residual effects to change in habitat and indicates, “Wildlife and wildlife habitat important to current land and resources users for traditional purposes most likely to be affected by the loss of terrestrial and wetland habitats include migratory (e.g., olive-sided flycatcher) and non-migratory (e.g., ruffed grouse [*Bonasa umbellus*]) birds, furbearers (e.g., American marten), and moose.” b. As described in response to IAAC-161 d., species of importance to Indigenous Nations were evaluated throughout the entire Wildlife and Wildlife Habitat VC assessment as it relates to the potential Project-related environmental effects of change in habitat, mortality risk, and wildlife health. As stated in Volume 2, Chapter 12, Section 12.7.1 of the EIS, with mitigation and environmental protection measures, the residual Project effects on wildlife and wildlife habitat (including for migratory birds, species at risk (SAR), species of conservation concern (SOCC), and species of importance to Indigenous Nations) are predicted to be not significant. Residual effects are not expected to threaten the long-term persistence or viability of wildlife and wildlife habitat (for any species) within the regional assessment area (RAA), nor are they expected to diminish conservation efforts for the survival, management, and recovery of SAR and SOCC. The existing

ID:	**IAAC-169**
	assessment has considered these species and an updated assessment is not required.
Attachment:	No

RESPONSE TO IAAC-170

ID:	**IAAC-170**
Expert Department or Group:	CCN-131 ECCC-26 MCCN-102 MCCN-103 SDFN-152
Guideline Reference	8.0 Follow-up and Monitoring Programs
EIS Reference	23.5.14 Wildlife Monitoring and Management Plan Volume 5, Appendix H Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report 6.0 Ecological Risk Assessment 6.4 Risk Characterization Table 6-1
Information Request:	a. For the Wildlife Monitoring and Management Plan and sub-plans, provide: i. the parameters to be measured; ii. planned timing for follow-up studies; iii. monitoring methods; and iv. reporting mechanisms for the follow-up and monitoring programs. b. Identify specific monitoring and follow-up that will be conducted as part of the Wildlife Monitoring and Management Plan to monitor for COPCs and validate the predicted future case scenarios for contaminants as identified in the ERA. c. Within the Avian Monitoring and Wildlife and Tailings Management Facility sub-plans: i. Develop a plan with appropriate spatial and temporal scales to determine the effectiveness of mitigation measures in a timely manner. Provide the Wildlife and Tailings Management Facility sub-plan that covers all phases of the Project, including reclamation. ii. Describe the adaptive management framework that will allow mitigation measures to be adjusted if necessary. d. Describe how Indigenous Groups will be involved in the development and implementation of the monitoring and follow-up activities described in parts a and b.
Response:	a. i, ii, iii, iv: As described in Volume 3, Chapter 23 of the Environmental Impact Statement (EIS), environmental management and monitoring plans will be developed and implemented under the overarching Environmental Management and Monitoring Program (EMMP) to address environmental protection and follow-up requirements for the Project. The WMMP is a component of the overall EMMP for the Project and its purpose is to specify the mitigation measures and monitoring activities identified during the assessment that are intended to reduce potential adverse effects on wildlife and their habitat(s); confirm key predictions of the environmental assessment; and verify compliance with regulatory requirements as per the Environmental Protection Plan. The proposed WMMP includes the follow-up and monitoring activities summarized in Table IAAC-170-1 (attached to this response in Appendix A). Alamos will develop an annual monitoring report summarizing the wildlife monitoring results which will be shared with Interested Indigenous Nations,

ID:	IAAC-170
	stakeholders, and relevant regulatory bodies. The annual reporting will include adaptive management actions that were taken, and/or decision thresholds/ triggers that have been reached during that year, if any. In addition to the wildlife monitoring activities, water quality monitoring results will be reported in Surface Water Quality Monitoring Reports and the results will be reviewed and used to evaluate the need for additional wildlife mitigation and/or monitoring. More immediate reporting of follow-up and monitoring results will be shared with the provincial Department of Agriculture and Resource Development as necessary (e.g., to implement additional or amended mitigation measures). b. The Ecological Risk Assessment (ERA; refer to Volume 5, Appendix H of the EIS) identifies the following types of chemicals of potential concern (COPCs): • Criteria Air Contaminants (CACs) — i.e., NO_2, SO_2, and $PM_{2.5}$. • Hydrogen cyanide (HCN) and diesel particulate matter (DPM). • Volatile organic compounds (VOCs), including acetaldehyde, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, propionaldehyde, toluene, 2,2,4-trimethylpentane and xylenes. • Non-carcinogenic and carcinogenic polycyclic aromatic hydrocarbons (PAHs) bound to particulate from diesel-based combustion sources (e.g., trucks), including: – Non-carcinogenic PAHs such as acenaphthene, acenaphthylene, anthracene, fluoranthene, fluorene, naphthalene, phenanthrene and pyrene. – Carcinogenic PAHs such as acenaphthene, acenaphthylene, benz(a)anthracene, benzo(a)pyrene B[a]P, benzo(b+j+k) fluoranthene, benzo(ghi)perylene, chrysene, indeno(1,2,3- cd)pyrene, and dibenzo(a,h)anthracene. • Metals that could potentially be emitted by the Project, including: – Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, uranium, vanadium, and zinc. – Airborne particulate-bound metals from fugitive dust from ore, waste rock, and tailings. Particulate-bound metals can also deposit on soil. – Metals from treated effluent or seepage. Currently there are no follow-up or monitoring activities proposed to specifically validate the ERA as it relates to the assessment of change in wildlife health because, following mitigation, there is relatively little uncertainty associated with the ERA. However, various plans under the EMMP will monitor emissions, discharges, and wastes generated by the Project (including COPCs, where applicable) in accordance with relevant regulatory guidelines. These plans, which are outlined in Volume 3, Chapter 23, Section 23.5 of the EIS, include the following: • **Emergency Response and Spill Prevention and Contingency Plan** The Emergency Response and Spill Prevention and Contingency Plan (ERSPCP) will summarize post-incident monitoring activities to be undertaken in the event of a vehicle accident, spill, tailings management facility (TMF) failure, or sewage treatment plant malfunction. Although the ERSPCP will not

ID:	IAAC-170
	be designed to verify the accuracy of the ERA, the results of monitoring carried out under the ERSPCP may indicate the presence of relevant COPCs in the environment following an incident (e.g., the presence of VOCs in the environment following a hydrocarbon spill) and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. • **Acid Rock Drainage and Metal Leaching Monitoring and Management Plan** The Acid Rock Drainage and Metal Leaching (ARD/ML) Monitoring and Management Plan (MMP), formerly referred to as the Mine Rock Management Plan, will outline procedures and test methods to classify the ARD/ML potential and geochemical properties of mine rock material associated with the Project. Although the ARD/ML MMP will not be designed to verify the accuracy of the ERA, routine water quality monitoring conducted as part of the ARD/ML MMP — as well as routine water quality monitoring conducted as part of other relevant plans under the EMMP (i.e., the Groundwater Management and Monitoring Plan, Surface Water Monitoring and Management Plan, and Environmental Effects Monitoring Plan) — will include analysis of contact water for parameters related to ARD/ML, including dissolved metal COPCs. These monitoring results may indicate the presence of relevant COPCs in the environment and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. • **Groundwater Management and Monitoring Plan** The Groundwater Management and Monitoring Plan (GWMMP) will include routine monitoring of groundwater quality to document the effects of changes in groundwater quality associated with the Project components, including the mine rock storage areas (MRSAs) and TMF. Although the GWMMP will not be designed to verify the accuracy of the ERA, groundwater quality samples will be analyzed for general chemistry and select dissolved metals, including COPCs such as cyanide, arsenic, cadmium, copper, lead, nickel, and zinc. Follow-up monitoring results will be compared with applicable regulatory standards set out in the *Guidelines for Canadian Drinking Water Quality* (GCDWQ); *Manitoba Water Quality Standards, Objectives and Guidelines* (MWQSOG); *Canadian Water Quality Guidelines for Protection of Freshwater Aquatic Life* (CWQG-FAL); Ontario Ministry of the Environment GW3 criteria[1]; and Project-specific regulatory approvals. The results of monitoring carried out under the GWMMP may indicate the presence of relevant COPCs in the

[1] As noted in Volume 1, Chapter 8, Section 8.1.1 of the EIS, Manitoba Conservation and Climate (MCC) has identified appropriate criteria to assess the risk to human and ecological receptors from contaminants in groundwater at sites in Manitoba, including *Canadian Environmental Quality Guidelines* (CEQGs) such as the CWQG-FAL where groundwater discharges to surface water. Since these CEQGs are surface water quality criteria and are therefore not directly applicable to groundwater quality, MCC has recommended additional reference documents where the CEQGs do not provide guidance for the risk to receptor via a particular pathway. One of the recommended references is the *Ontario Soil, Ground Water and Sediment Standards for Use* under Part XV.1 of the Ontario *Environmental Protection Act*, which are also referred to as Site Condition Standards. The Site Condition Standards include Aquatic Protection Values that are designed to provide a scientifically defensible and reasonably conservative level of protection for aquatic organisms from the migration of contaminated groundwater to surface water resources. The Aquatic Protection Values are established water quality criteria in surface water and are used to determine the acceptable concentrations in groundwater (GW3 criteria) by back-calculating through a defined modelling process that considers a ten times dilution in the receiving environment. For this Project, the GW3 criteria are used as screening criteria in areas where groundwater is anticipated to discharge to surface water features.

ID:	IAAC-170
	environment and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. • **Surface Water Monitoring and Management Plan** The Surface Water Monitoring and Management Plan (SWMMP) will include routine monitoring of water quantity and water quality downstream of the TMF at the MacLellan site and downstream of the MRSAs at the MacLellan and Gordon sites. Although the SWMMP will not be designed to verify the accuracy of the ERA, changes in surface water quality will be monitored by analyzing water samples for total and dissolved metal concentrations (e.g., copper, which is a COPC), metalloids (e.g., selenium, which is a COPC), major anions (e.g., sulphate), nutrients (e.g., nitrate), organics (e.g., total and dissolved carbon), and physical parameters (e.g., pH, total dissolved solids). Samples at the MacLellan site will also be tested for cyanide species such as HCN, which is a COPC. The results of monitoring carried out under the SWMMP may indicate the presence of relevant COPCs in the environment and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. • **Air Quality Management Plan** The purpose of the Air Quality Management Plan (AQMP) will be to monitor and manage the effect of the Project on ambient air quality in accordance with provincial regulatory requirements. Follow-up and monitoring for air quality will include continuous ambient monitoring for particulate matter, which has potential to contain COPCs such as $PM_{2.5}$ as well as airborne particulate-bound metals from fugitive dust from ore, waste rock, and tailings. Although the AQMP will not be designed to validate the ERA, the intent will be to confirm that ambient concentrations of total suspended particles (TSP), PM_{10}, and $PM_{2.5}$ at human receptor locations are not above levels predicted by the EIS, and to assess the effectiveness of the dust mitigation measures and determine the need for more rigorous dust mitigation. The results of monitoring carried out under the AQMP may indicate the presence of relevant COPCs in the environment and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. • **Environmental Effects Monitoring Plan** The Environmental Effects Monitoring Plan (EEMP) will be designed to monitor compliance with the *Metal and Diamond Mining Effluent Regulations* (MDMER) under the federal *Fisheries Act*. Monitoring requirements under the EEMP will be developed and implemented in accordance with the MDMER and ECCC's (2012) *Metal Mining Technical Guidance for Environmental Effects Monitoring*. Although the EEMP will not be designed to verify the accuracy of the ERA, it will include effluent and water quality and biological monitoring studies that will monitor for various COPCs. The results of monitoring carried out under the EEMP may indicate the presence of relevant COPCs in the environment and thus the potential exposure of ecological receptors (e.g., wildlife) to those COPCs. As part of the biological monitoring studies conducted under the EMMP, Alamos will undertake a fish tissue survey to assess if mercury (i.e., a COPC) from mining effluent may affect the use of fisheries resources. A fish tissue survey will be required if, during effluent characterization, the concentration of total mercury in the effluent is equal to or greater than 0.10 µg/L (MDMER, Schedule 5, paragraph 9(c)).

ID:	IAAC-170
	The results of monitoring conducted in accordance with each of the above-listed plans will be compared against applicable regulatory standards and the terms and conditions of Project-specific regulatory approvals, thereby helping to determine the effectiveness of the mitigation and management measures summarized in the respective plan. Monitoring results may also identify the need for adaptive management if applicable thresholds are exceeded. If there is concern regarding the potential uptake of COPCs by ecological receptors (e.g., wildlife), adaptive management measures could include additional sampling (e.g., of tissues, water, and/or soil) to validate the ERA. The adaptive management framework of the WMMP similarly allows for the implementation of additional mitigation measures and/or monitoring programs to manage unanticipated Project effects. c. Within the Avian Monitoring and Wildlife and Tailings Management Facility sub-plans: i. A summary of the proposed Avian Mitigation Plan and Wildlife and Tailings Management Facility Monitoring is provided in Table IAAC-170-1 (attached to this response in Appendix A), which includes spatial and temporal details of the plans. ii. Adaptive management is a planned process for responding to uncertainty or to an unanticipated or underestimated Project effect. Information learned from monitoring actual Project effects is applied and compared to predicted effects. Where a variance between the actual and predicted effects occurs, a determination is made as to whether modifications or other actions are necessary to revise the existing mitigation measures. Results from monitoring will be used through an adaptive management process to adjust mitigation measures and to modify plans on an ongoing basis, if required. ci. Alamos will engage with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Information on conceptual monitoring and management plans was provided to Indigenous Nations on April 21 (registered mail) and April 22 (email), 2021. Alamos has not received any comments from Indigenous Nations regarding this material to date. As described in Volume 3, Chapter 23, Section 23.3 of the EIS, as results become available from the follow-up and monitoring program, they will be shared with Indigenous Nations, in a fashion, frequency, and format determined to be appropriate to the applicable audience.
Attachment:	Appendix A, Attachment IAAC-170

RESPONSE TO IAAC-171

ID:	**IAAC-171**
Expert Department or Group:	CCN-109 CCN-111 CCN-112 CCN-113 CCN-114 CCN-116 CCN-117 CCN-120 MCCN-59 MCCN-60 MCCN-62 MCCN-63 MCCN-64 MCCN-65 MCCN-66 MCCN-74 MCCN-95 MMF-29 SDFN-125 SDFN-126 SDFN-127 SDFN-130 SDFN-132 SDFN-133 SDFN-135 SDFN-136
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous groups and concerns raised 6.1.11 Human environment
EIS Reference	13.2 Existing Conditions for Labour and Economy 13.9 Follow-up and Monitoring 14.2 Existing Conditions for Community Services, Infrastructure, and Wellbeing 19.2.2 Overview Table 19-3 Guidance Appendices to the Major Projects Assessment Standard
Information Request:	a. Describe the data and rationale used to assess the socio-economic conditions of Indigenous Groups. b. Update the Indigenous socio-economic baseline with Indigenous Group-specific data, where possible. As applicable: i. identify the criteria used to assess socio- economic conditions; ii. describe the involvement of each Indigenous Group in the regional commercial economy; iii. identify any factors preventing access to employment or other economic opportunities; iv. identify the socio-economic vulnerabilities of the economically marginalized; v. identify the general state of community well-being including the physical and mental health conditions; vi. analyze access to (including potential pressures on) social services and protection facilities in the community; and vii. identify existing infrastructure including access to roads, housing, and additional pressures on infrastructure. c. Describe how Indigenous Group-specific socio- economic information is considered in the assessment of impacts to Indigenous people and their rights. Describe efforts made to engage with each Indigenous Group to inform the assessment. d. Update the effects assessments, as applicable, to include the information gathered in parts b and c. Identify any changes to the conclusions in the effects assessments and any additional mitigation measures, as necessary.
Response:	a. The data used to assess the socio-economic conditions of Indigenous Nations is presented in Volume 2, Chapter 13, Section 13.1.2 and 13.2.1 (Labor and Economy) and Volume 2, Chapter 19, Section 19.2.1 (Indigenous Peoples) of the Environmental Impact Statement (EIS) and includes data obtained from engagement carried out by Alamos with potentially affected Indigenous Nations, including traditional land and resource use studies and open houses, historical literature, internet sources, and government sources such as Statistics Canada

ID:	IAAC-171
	(e.g., 2016 Census of the Population (Census) Community Profiles and 2011 Census and National Household Survey (NHS) Community Profiles). The rationale used to assess labor and economy, including labor and economic conditions of Indigenous Nations, is presented in (Volume 2, Chapter 13, Section 13.1.3). The assessment of effects on labor and economy was completed using estimates of direct, indirect, and induced economic impacts of Project construction, operation, and decommissioning/closure as presented in Volume 2, Chapter 13, Section 13.4.1 of the EIS using Manitoba's Input-Output Model and Tax Revenue Impact Assessment Model with input data provided by Alamos (PwC 2020a, 2020b). Regional impacts were estimated by applying location quotients (i.e., a statistical measure used to determine a region's [i.e., the Northern Region of Manitoba] industrial specialization relative a larger geographical unit [Manitoba]) to each industry affected by the mine). Estimates of carbon taxes, based on projections provided by Alamos, were also provided by at the provincial level (based on the federal Output-Based Pricing System). A copy of the economic impact assessment completed by PwC including explanation of analytic methods is presented in Volume 2, Chapter 13, Appendix 13A of the EIS. This method conforms to the EIS Guidelines for the Project, as well as applicable Canadian Environmental Assessment Agency guidance documents. While the assessment of labor and economy recognizes the intrinsic importance of effects to local and regional labor force and business and economy on the health and wellbeing of Indigenous Nations, the labor and economy assessment itself does not assess or predict direct effects on those groups. The assessment of Indigenous socio-economic conditions, presented in Volume 2, Chapter 19 of the EIS, incorporates the results of the labor and economy assessment; however, this assessment focuses on how changes to the environment caused by the Project will affect the conditions, attributes, sites, lands, and resources that support the socio-economic wellbeing of Indigenous Nations (Volume 2, Chapter 19, Section 19.4.4). The methods for the assessment of Indigenous socio-economic conditions, including the identification of Project interactions with Indigenous socio-economic conditions and potential effects pathways, were developed in consideration of: results of the Indigenous engagement program for the Project, including Project-specific traditional land and resource use (TLRU) studies; review of publicly available literature containing TLRU information for Indigenous Nations engaged on the Project; conclusions of relevant biophysical and socioeconomic assessments; and feedback on the assessment from participating Indigenous Nations. b. The characterization of baseline Indigenous socio-economic conditions is described in Volume 2, Chapter 19, Section 19.2.2.2 of the EIS and includes information obtained through TLRU studies conducted by Indigenous Nations; government reports and databases (i.e., Crown-Indigenous Relations and Northern Affairs Canada, Canadian Census); historical literature; and Internet sources (e.g., Indigenous Nation websites). Additional Nation-specific information is documented in a supplemental filing that was provided to IAAC in March 2021 providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during the course of the engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address

ID:	IAAC-171
	these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the March 2021 supplemental filing. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other new Indigenous Nation-specific socio-economic data has been obtained through Indigenous engagement since the March 2021 supplemental filing. No updates to the Indigenous socio-economic baseline information presented in the EIS, or changes the conclusions of the EIS, are proposed based on the additional information received from Indigenous Nations and summarized in the supplemental filing. i. Based on the current information in Volume 2, Chapter 19 of the EIS, criteria to assess Indigenous socio-economic conditions is described in Section 19.1.4 and includes land or resource use capacity, use or access to or interference with infrastructure, levels of local employment, goods and services, and economic activity. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding criteria to assess Indigenous socio-economic conditions. ii. The involvement of Indigenous Nations in the regional economy is described in Volume 2, Chapter 19, Section 19.2.2.2. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding their involvement in the regional economy. iii. Factors preventing access to employment and other economic opportunities are described in Volume 2, Chapter 19, Section 19.2.2.2 and include a lack of opportunities in education, employment, and information flow; lack of community capacity; and the need for community liaisons and councilors to mentor trainees and employees. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding factors preventing their access to employment and other economic opportunities. iv. The socio-economic vulnerabilities of Indigenous Nations are described in Volume 2, Chapter 19, Section 19.2.2.2 and include access to education and social services programming, access to affordable, safe, housing, and access to healthcare. No updates to this information in the EIS are warranted,

ID:	IAAC-171
	because Alamos has not received additional information from Indigenous Nations regarding the socio-economic vulnerabilities of Indigenous Nations. v. Indigenous Nation well-being as it relates to Indigenous health conditions is described in Volume 2, Chapter 19, Section 19.2.2.1, while community well-being as it relates to infrastructure and services is described in Volume 2, Chapter 14, Section 14.2.2.7 and 14.2.2.8. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding Nation well-being as it relates to health conditions. vi. Access to social services is described in Volume 2, Chapter 14, Section 14.2.2 and includes a description of access to recreation, education, healthcare, and emergency services. These services are assessed for Project-related effects in Volume 2, Chapter 14, Section 14.4 of the EIS. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding Indigenous access to (or potential pressures on) social services. vii. Existing infrastructure is described in Volume 2, Chapter 14, Section 14.2.2 and includes a description of housing, municipal infrastructure, and transportation networks. These services are assessed for Project-related effects in Volume 2, Chapter 14, Section 14.4 of the EIS. No updates to this information in the EIS are warranted, because Alamos has not received additional information from Indigenous Nations regarding their infrastructure. c. As described in Volume 2, Chapter 19, Section 19.1.1.4, socio-economic information from Indigenous Nations incorporated into the assessment includes current use information as described in Volume 2, Chapter 17, as well as relevant information from the labor and economy assessment (Volume 2, Chapter 13), community services, infrastructure, and wellbeing assessment (Volume 2, Chapter 14) and land and resource use assessment (Volume 2, Chapter 15). Information was also obtained through the Indigenous engagement program for the Project (Volume 1, Chapter 3, Appendix 3B), and Project-specific TLRU studies (Volume 2, Chapter 17, Appendix 17A). This information was incorporated into the assessment for Indigenous socio-economic conditions (Volume 2, Chapter 19) in the characterization of the baseline and in the determination of Project effects, mitigation measures, and significance of effects. The conclusions of the assessment of current use of lands and resources for traditional purposes (Volume 2, Chapter 17) of the EIS were also incorporated into the assessment of Indigenous socio-economic conditions as these assessments also closely linked in that the exercise of Indigenous and Treaty rights relies upon the exercise of traditional activities and on the health and abundance, availability, and access to traditionally harvested species. The conclusions of both assessments supported the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the TLRU Report serves to confirm the assumptions made in the

ID:	IAAC-171
	EIS regarding the nature and extent of Indigenous traditional use in relation to the Project. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. Efforts made to engage Indigenous Nations are described in Volume 1, Chapter 3, Section 3.3.4 and in the March 2021 supplemental filing and include TLRU studies, meetings with leadership, community meetings, fieldwork opportunities, information packages, tours, among other activities. d. A supplemental filing was submitted to IAAC in March 2021 that includes new information collected from more recent engagement activities (May 2020-December 2020). On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other additional baseline data for socio-economic conditions was received, no additional mitigation measures have been identified, and no changes to the conclusions in the EIS are proposed based on the additional information received from Indigenous Nations following the filing of the EIS and summarized in this supplemental filing. The EIS predictions regarding the characterization of residual adverse effects on all VCs and the determinations of significance of residual adverse effects on all VCs remain valid and applicable in consideration of the information received through engagement with Indigenous Nations up to December 31, 2020. No updates to the assessment are warranted based on the information gathered in parts b and c. Responses to comments CCN-109, CCN-111, CCN-112, CCN-113, CCN-114, CCN-116, CCN-117, and CCN-120 from Chemawawin Cree Nation; MCCN-59, MCCN-60, MCCN-62, MCCN-63, MCCN-64, MCCN-65, MCCN-66, MCCN-74, and MCCN-95 from Mathias Colomb Cree Nation; MMF-29 from the Manitoba Metis Federation; and SDFN-125, SDFN-126, SDFN-127, SDFN-130, SDFN-132, SDFN-133, SDFN-135, and SDFN-136 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided

ID:	IAAC-171
	herein (i.e., in this response to IAAC-171) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-172

ID:	**IAAC-172**
Expert Department or Group:	IAAC SDFN-100
Guideline Reference	6.1.11 Human environment 6.3.4 Indigenous peoples
EIS Reference	14.3 Project Interactions with Community Services, Infrastructure, and Wellbeing Community Services and Infrastructure
Information Request:	a. Describe how the Project can impact: i. Indigenous women and girls in the RAA; and ii. social well-being of Indigenous workers at the work camp. b. Provide mitigation measures to address the impacts identified in part a and any relevant follow- up and monitoring that may be required.
Response:	a. In relation to Project impacts: i. As described in Volume 2, Chapter 14, Section 14.4.5.1 of the Environmental Impact Statement (EIS), the Project may affect the well-being of members living in communities within the regional assessment area (RAA), including members of Indigenous Nations, through changes in employment and income, which may result in positive or adverse effects, and through a change in population, which could alter the demographic composition of the local assessment area (LAA) and affect social cohesion. Adverse interactions (e.g., physical conflicts) between Fly-in/Fly-out or Drive-in/Drive-out (FIFO/DIDO) workers and residents also can disrupt existing social environments (e.g., result in changes in perceived safety) and adversely affect social cohesion. The assessment of community services, infrastructure, and well-being describes potential effects of the Project on all members of RAA communities; it does not describe potential effects specific to Indigenous women and girls as an assessment of gender-specific effects was not required by the final EIS Guidelines. However, the assessment does acknowledge that the Project may result in disproportionate or unequitable effects on vulnerable populations, which include youth, women, and Indigenous persons. Specifically, for the purpose of this assessment it is understood that the active labour force portion of vulnerable populations (based on existing conditions; Volume 2, Chapter 13, Section 13.3, and Volume 2, Chapter 14, Section 14.2) are less likely to realize benefits of Project-related employment and income. It is also understood that various subpopulation groups may be more vulnerable to adverse changes in housing affordability and availability. ii. The wellbeing of community members, including Indigenous residents, who secure employment with the Project could experience positive effects as a result of increased income. Community members, including those employed by the Project, may also experience adverse effects due to the altered demographic composition of the RAA, which may lead to adverse interactions (Volume 2, Chapter 14, Section 14.4.5.2 of the EIS). Work camp conflict between Indigenous and non-Indigenous employees is also possible. Such conflicts could arise from racial and cultural misunderstandings. See b. below

ID:	IAAC-172
	for management activities (e.g., sensitivity training) to help address these issues in the work camp setting. b. Mitigation and management measures for community wellbeing have been outlined in the EIS. These will reduce adverse effects and increase positive effects of the Project on residents of RAA communities and within work camp populations, which includes women and Indigenous Nations' members (see Volume 2, Chapter 14, Section 14.4.5.2 of the EIS). For instance, Alamos will educate the Project workforce on topics such as: • Healthy lifestyle choices • Sensitivity training • Health and safety policies • Use of and access to the Employee Assistance Program. These education policies and programs will be systematically implemented within the work camp setting. A benefit of such training will also be to help reduce potential conflicts between Indigenous and non-Indigenous worker populations within the camp that could arise from cultural differences. Alamos will also inform residents and Indigenous Nations of employment and procurement opportunities during all Project phases and implement a hiring policy where priority is given to the workers from the LAA, followed by other parts of the RAA, other parts of Manitoba, and other parts of Canada. Job qualifications will be posted in advance and training programs and providers will be identified so that local and Indigenous residents can acquire the necessary skills and qualify for potential Project-related employment.
Attachment:	No

RESPONSE TO IAAC-173

ID:	**IAAC-173**
Expert Department or Group:	IAAC MCCN-62
Guideline Reference	6.1.11 Human environment 6.3.4 Indigenous peoples 8.0 Follow-Up and Monitoring Programs
EIS Reference	13.9 Follow-Up and Monitoring 14.8 Follow-up and Monitoring 19.10 Follow-up and Monitoring
Information Request:	a. Describe socio-economic follow-up and monitoring programs for labour and economy to validate the predictions of the assessment, confirm the effectiveness of mitigation measures, and respond to any unanticipated effects identified. i. Include information on adaptive management and associated triggers. ii. Describe any set targets for local Indigenous participation, monitoring of Indigenous persons employed by the Project, and mechanisms for adaptive management if targets are not met. b. Describe socio-economic follow-up and monitoring programs for community services, infrastructure, and wellbeing. Include key community services potentially impacted by the Project, organizations that will be included in the follow-up and monitoring programs, and mechanisms for adaptive management if unanticipated impacts are identified. c. Describe the plan to engage Indigenous Groups in the development and implementation of the programs outlined in parts a and b.
Response:	a. As described in Volume 2, Chapter 13, Section 13.9 of the Environmental Impact Statement (EIS), the Project is expected to result in positive effects on the local and regional labour force, businesses, and economy during both construction and operation. Alamos will implement management measures to increase local and regional content; however, the extent to which workers and businesses participate in Project-related opportunities is largely external to Alamos (e.g., the extent to which local workers seek employment with the Project and local businesses respond to procurement opportunities). No follow-up and monitoring programs are proposed. Project-related increase in competition for labour and upward pressure on wages are anticipated to result in adverse effects on local businesses. To attract qualified labour for the Project, Alamos will compensate workers in accordance with Manitoba mining industry averages. Given that inflationary effects are largely external to Alamos and anticipated to be low in magnitude, no follow-up and monitoring programs are proposed. Following the completion of decommissioning and closure Project expenditures and demand for labour will cease resulting in adverse effects on the local regional labour force, businesses, and economy (relative to the Project's operational case). This phased reduction in expenditure and demand for labour will be known and anticipated by workers and business. Qualifications (e.g., skills and experience) gained by workers while employed with the Project will aid in securing employment on future projects within the local assessment area (LAA), regional assessment

ID:	IAAC-173
	area (RAA) or Manitoba. For businesses, experience gained providing goods and services to the Project will prove beneficial in securing future contracts with projects in the LAA, RAA or Manitoba. For these reasons, and because Project activities will have ceased, no follow-up and monitoring programs are proposed. i. Alamos' adaptive management strategy will involve ongoing dialogue with agencies, local Indigenous Nations and stakeholders throughout the Project, followed by modified policies, practices and initiatives as appropriate. In support of this, Alamos will collect and report data on the share of the labour force who are from LAA/RAA communities and value of contracts awarded to local businesses. Alamos will prioritize to the extent possible local and regional content, however, as discussed above, since factors external to Alamos will influence Project effects on labour and economy, Alamos has not defined targets for local procurement or labour and therefore no specific adaptive management triggers exist. If through dialogue with agencies, local Indigenous Nations and stakeholders, unexpected adverse or disappointing positive labour and economy effects are identified, Alamos will work iteratively with agencies, local Indigenous Nations and stakeholders, including local employers, to reasonably modify policies and practices. ii. Alamos does not have targets for local Indigenous participation in the Project, but it will implement a number of measures to encourage participation of Indigenous workers and companies, including by informing Indigenous Nations of job and procurement opportunities during all Project phases and implementing a policy of local hire where priority is given to the workers from the LAA, followed by other parts of the RAA, other parts of Manitoba, and other parts of Canada. b. Volume 2, Chapter 14, Section 14.10 of the EIS indicates that government departments, public agencies, and private-sector companies that deliver community services and infrastructure will monitor the ongoing demand for community services as part of their normal planning practices. No follow-up and monitoring program is required for community services and infrastructure. Similarly, community wellbeing is monitored by Manitoba Health and Seniors Care (formerly Health, Seniors and Active Living; also known as Manitoba Health) and the Northern Regional Health Authority (NHRA or Northern Health Region) as part of their service delivery and regular assessment of community wellbeing. For this reason, and because the management of population health falls under the provincial government responsibility, no follow-up and monitoring program is required. Alamos will employ qualified health care professionals to treat health issues for workers while they are on-site. Project adaptive management will include frequent communication with agencies and service providers to determine if services and infrastructure are experiencing additional Project-related demand and if/how Alamos can respond to help ease any such effect. c. On April 22, 2021, Alamos provided descriptions of conceptual environmental Management and Monitoring Plans to Indigenous Nations engaged on the Project. The plan descriptions included information on parameters to be monitored, methodology and equipment to be used, the frequency and duration of monitoring, adaptive management triggers/thresholds, and reporting requirements. The intent of sharing this information was to provide an opportunity for Indigenous Nations to participate in the design and implementation of environmental Management and

ID:	**IAAC-173**
	Monitoring Plans. Alamos has followed up with Indigenous Nations to confirm the receipt of the plans and encourage Nations to provide feedback, however, no Indigenous Nation has provided a response. The programs outlined in part b above are delivered through the provincial government departments and agencies, such as Manitoba Health and Seniors Care and Northern Regional Health Authority, and private-sector companies. Alamos is not involved in the operation of these providers and cannot comment on the process for engagement of Indigenous Nations in delivery of these programs.
Attachment:	No

RESPONSE TO IAAC-174

ID:	**IAAC-174**
Expert Department or Group:	HC-06 MCCN-84
Guideline Reference	6.1 Project setting and baseline conditions 6.1.1 Atmospheric Environment 6.1.11 Human environment 6.3.4 Indigenous peoples
EIS Reference	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
Information Request:	a. Identify the historic mining activities that contribute to the baseline for COPCs. i. Describe how past contributions of mining may have contributed to existing COPCs through the pathways of impacts to human health identified in Section 18.4.1 of the EIS. ii. If additional COPCs are identified as contributing to the baseline, update the HHRA and human health assessment to include this baseline data. b. Provide baseline data for all COPCs in ambient air at the MacLellan and Gordon mining sites. Where baseline data are measured, document: i. the type of samples collected; ii. the number of samples collected; iii. the analytical detection limit; iv. the number of samples with non- detectable COPC concentrations; v. the minimum and maximum COPC concentrations; and vi. any statistical averaging (e.g., 95% upper confidence limit mean) used to represent the baseline COPC concentrations in each environmental medium. c. Update the characterization of risks from COPCs using a HQ target of 0.2 for inhalation exposure. Where appropriate, provide justification for alternative HQs that are used to characterize risk from the inhalation of COPCs.
Response:	a. A list of past mining activities that could contribute to baseline conditions for contaminants of potential concern (COPCs) is provided in Volume 1, Chapter 4, Table 4D-2 of the Environmental Impact Statement (EIS). These include: “A” Mine, “EL” Mine, Fox Mine, Farley Mine, Ruttan Mine, MacLellan Mine, Burnt Timber Mine, Keystone Gold Mine, as well as the East and West Tailings Management Facilities in the Town of Lynn Lake. Table 4D-2 also identifies that the proponent for each of these projects and lists the primary and secondary metals of interest for each mine including, copper, gold, nickel, sliver, and zinc, all of which are considered as COPC in the current Human Health and Ecological Risk Assessment (HHERA). i. Past mining activities would have introduced contaminants to the environment through releases to air and surface water in the same way that emissions from the proposed Project could affect environmental media within the local

ID:	IAAC-174
	assessment area (LAA) and regional assessment area (RAA). Deposition of fugitive dusts could have resulted in metal accumulation in soil and terrestrial country foods and backyard garden produce. Releases to surface water from former tailings facilities and other operations could have resulted in metal accumulation in surface water and sediments. ii. Past metal mining activities would generally have released the same suite of contaminants to the environment as those potentially associated with Alamos' Lynn Lake Gold Project. These include antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper lead, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, thallium, uranium, vanadium, and zinc. Thus, past mining activities would not have introduced additional COPCs that have not been considered in the current HHRA. In addition, the baseline sampling programs for air, surface water, soil, vegetation, backyard garden produce, fish tissue and small mammals were conducted between 2015 and 2018 and are representative of current environmental conditions, which include the contributions that past mining activities in the area have had on the local environment. This means that the baseline conditions (metal concentrations in surface water, soil, vegetation, backyard garden produce, fish tissue, and small mammals) incorporate the contributions from past mining activities. Thus, the baseline data used in the human health risk assessment captures the effects of past mining activities and appropriately represents existing exposures and the associated human health risks that may be experienced by Indigenous and non-indigenous people living in, or visiting, the local assessment area (LAA). b. In relation to baseline data for all COPCs in ambient air: i. to v. The HHRA relied on the air quality information provided in the air quality assessment, which provided baseline air quality data that are considered to be representative of appropriate ambient air quality baseline conditions for the LAA. The baseline concentrations for the air quality chemicals of potential concern (COPC), including the rationale for assumptions regarding baseline conditions of COPC for which data are unavailable, are presented in Section 3.3 Baseline Ambient Air Quality in the Lynn Lake Gold Project Air Quality Technical Modelling Report (Volume 5, Appendix A of the EIS). Table 3-5 summarizes the baseline concentrations for different time averaging periods for nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2), particulate matter with an aerodynamic diameter of 10 micrometres (PM_{10}) and particulate matter with an aerodynamic diameter of 2.5 micrometres ($PM_{2.5}$). The baseline ambient concentrations of diesel particulate matter (DPM), hydrogen cyanide (HCN), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals, are assumed negligible because of the remote location of the Project and the absence of industrial activities in the LAA. The baseline values for NO_2, CO and SO_2 were derived from ambient air quality monitoring stations in Manitoba and Northwest Territories operated by the National Air Pollution Surveillance (NAPS) program. The NAPS program is operated by the Government of Canada and details about the types of samples, number of samples, analytical detection limits and the number of samples with non-detectable concentrations are available at this NAPS data portal website:

ID:	IAAC-174
	https://open.canada.ca/data/en/dataset/1b36a356-defd-4813-acea-47bc3abd859b Details (types of samples, number of samples, detection limits and number of samples with non-detectable concentrations) for the baseline values measured locally for PM_{10} and $PM_{2.5}$ are available in the 2015/2015 Air Quality Baseline Technical Data Report and the Air Quality Baseline Technical Data Report Validation Report (both available in Volume 4, Appendix A of the EIS). vi. The statistical analyses used to develop the 95% upper confidence limits on the mean (95% UCLM) values for each COPC and environmental medium are provided in Appendix C of the Human Health and Ecological Risk Assessment Technical Modelling Report (Volume 5, Appendix H of the EIS). c. The selection of the hazard quotient/concentration ratio (HQ/CR) targets used to characterize potential health risks associated with inhalation exposures to criteria air contaminants (CACs), DPM, HCN, VOCs, PAHs and metals is provided in Section 5.4.1 for the Human Health and Ecological Risk Assessment Technical Modelling Report. In general, the health effects and risks associated with inhalation exposures are distinct from those associated with oral and dermal exposures and thus, inhalation health risks are assessed independently from oral/dermal exposure risks. Therefore, where Project-related exposures represent the predominant contributor to inhalation exposures (CACs, DPM, HCN), a Concentration Ratio (CR) (inhalation equivalent to HQ) of 1.0 is appropriate. For the remaining COPCs (VOCs, PAHs, metals), the maximum calculated CRs were below 0.01 (Section 5.4.3 for HHRA TMR) and thus, applying a CR (HQ) of 0.2 rather than 1.0 would not alter the conclusions of the HHRA.
Attachment:	No

RESPONSE TO IAAC-175

ID:	**IAAC-175**
Expert Department or Group:	CCN-106 CCN-108 CCN-111 CCN-112 CCN-113 CCN-123 MCCN-94 MCCN-95 MCCN-96 SDFN-124 SDFN-126 SDFN-127 SDFN-128 SDFN-129 SDFN-139 SDFN-147
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised 6.1.9 Indigenous peoples
EIS Reference	19.2.2 Overview 19.5.2 Changes to Indigenous Health Conditions 19.5.4.1 Cumulative Effect Pathways 19.5.4.3 Cumulative Effects 19.9.3.8 Sayisi Dene First Nation Tables 19-2 and 19-4 Useful Information for Environmental Assessments; HC (2010)
Information Request:	a. Describe the criteria used to assess Indigenous health conditions. b. Provide a summary of input, from the perspective of each Indigenous Group, on baseline health conditions. c. Describe the baseline health conditions of each Indigenous Group. Where appropriate, include human health-related socio-economic parameters. i. Update the Project effects assessment on Indigenous health conditions for each Indigenous Group, including any changes to the HHRA in response to IAAC-174 to IAAC-183. d. Update the cumulative effects assessment for Indigenous health considering the Project effects in combination with future foreseeable projects. i. Describe how Project effects will combine with specific developments or other cumulative effects sources to affect environmental conditions that support community health.
Response:	a. The assessment of Indigenous health conditions focuses on how changes to the environment resulting from the Project will affect the conditions, attributes, sites, lands, and resources that support the health of Indigenous peoples. The methods for the assessment of Indigenous health, including the identification of Project interactions with Indigenous health and potential effects pathways, described in Volume 2, Chapter 19, Section 19.4.1 of the Environmental Impact Statement (EIS), were developed in consideration of: • Results of the Indigenous engagement program for the Project, including Project-specific traditional land and resource use (TLRU) studies. • Review of publicly available literature containing TLRU information for Indigenous Nations engaged on the Project. • Conclusions of relevant biophysical and socioeconomic assessments. • Feedback on the assessment from participating Indigenous Nations. The methodology for the assessment of Indigenous health conforms to the *Canadian Environmental Assessment Act,* 2012 (CEAA 2012) and the 2017 Guidelines for the Preparation of an Environmental Impact Statement for the Project, as well as Canadian Environmental Assessment Agency guidance for

ID:	IAAC-175
	assessing effects on current use (CEAA 2015; CEAA 2015a) and Health Canada's Useful Information for Environmental Assessments. The interrelationship among various related biophysical and socio-economic valued components (VCs) plays an important role in how changes to the environment may affect the conditions and material circumstances of Indigenous Nations. For example, changes in surface water quality may influence fish health, which could in turn affect country foods and Indigenous health conditions. Construction and operation of the Project may affect Indigenous health conditions through changes in air quality, changes in noise, changes in water quality, and changes in the quality or availability of country foods. Consequently, the assessment of Indigenous health conditions relies on pathways utilized in Volume 2, Chapter 17 (TLRU) and Volume 2, Chapter 18 (human health). These include changes to Indigenous health that may occur from effects on the availability of and access to traditionally harvested resources and traditional sites and areas, as well as potential changes to Indigenous health through changes in noise levels; through changes in chemical concentrations in air, soil, water and country foods; and through the consumption of wild meat, fish tissue, and vegetation each of which are assessed individually in the Human Health and Ecological Risk Assessment Technical Modelling Report (REF). The TLRU assessment in turn relies on input from Volume 2, Chapter 10 (fish and fish habitat), Volume 2, Chapter 11 (vegetation and wetlands) and Volume 2, Chapter 12 (wildlife and wildlife habitat) of the EIS to determine potential effects to country foods harvested by Indigenous Nations. Similarly, the human health assessment in turn relies on input from Volume 1, Chapter 6 (atmospheric environment), Volume 1, Chapter 7 (noise and vibration), and Volume 1, Chapter 9 (surface water) of the EIS to determine the potential changes in human health risk associated with Project-related changes in chemical concentrations and noise levels in the physical environment. Volume 2, Chapter 19, Section 19.1.2.3, describes the biophysical and socio-economic VCs that are directly and indirectly incorporated into the assessment of effects on Indigenous peoples with respect to health. In both the atmospheric environment and noise and vibration assessments, receptor locations include Indigenous Nations' communities and residences in the Project area as well as current use areas as identified through the Indigenous engagement program for the Project, including Project-specific TLRU studies, as well as a review publicly available TLRU information sources. Information related to the Indigenous receptor locations was incorporated into Volume 2, Chapter 18 (human health) of the EIS. Indigenous receptors were selected early in the assessment process and represent potential receptor locations rather than specific individual use sites. These potential locations include traplines, lakeshores near fishing locations, and cabins and camps where there is a potential for extended (overnight) occupancy. Engagement and publicly available current use information revealed no known areas of extended occupancy with 1 km of the Gordon or MacLellan sites. Although the EIS evaluated potential human health effects for Indigenous people who reside within the LAA, the conclusions would be expected to apply to members of Indigenous Nations who reside outside the LAA but who harvest country foods or engage in spiritual or cultural activities within the LAA. Table 19-2 in Volume 2, Chapter 19 of the EIS presents potential effects pathways related to Indigenous health. Volume 2, Chapter 19,Table 19-5 of the EIS presents residual effects criteria for Indigenous health. Volume 2, Chapter 19, Table 19-6 of the EIS presents Project interactions with Indigenous health.

ID:	IAAC-175
	b. c. and d. Volume 1, Chapter 3, Section 3.3.3 of the EIS provides a profile of each Indigenous Nation engaged on the Project, including location of reserves and communities in relation to the Project, accessibility, population, governance structure, Treaty affiliation, and the availability of health and medical services within each Indigenous Nation. These profiles were provided to each Indigenous Nation for review and comment prior to filing the EIS. Where feedback was received, this was incorporated into the profile for that Indigenous Nation. Volume 2, Chapter 17, Section 17.2.14 of the EIS provides an overview of baseline conditions for current use for each of the Indigenous Nations engaged on the Project. This information was compiled from Project-specific TLRU, results of the Indigenous engagement program for the Project, and a review of publicly available secondary sources. This overview includes description of traditionally harvested plant and animal species, harvesting sites and areas, harvesting activities, trails and travelways, and traditional, cultural and spiritual sites and areas for each Indigenous Nation, where information was available. Marcel Colomb First Nation is the only Indigenous Nation that has a reserve or community location within the Indigenous heath LAA. However, members of the other 12 Indigenous Nations engaged on the Project may choose to live and work within the Indigenous health LAA and RAA or travel to areas within the Indigenous health LAA or RAA to harvest country food, visit cultural and spiritual sites, or access services. Information and concerns received from Indigenous Nations regarding Indigenous health conditions are described in Volume 2, Chapter 19, Section 19.1.4 and are reproduced below: • Marcel Colomb First Nation expressed concerns about effects to species of value, including fish and birds; effects on air quality and water quality, terrestrial habitat, vegetation, and mammals, such as moose and caribou; and concerns about potential for changes in water quality to affect the health of harvested fish within or downstream; concerns about mining dust, chemicals, and contaminants entering into the country food chain and making people sick. • Mathias Colomb Cree Nation expressed concerns about effects on caribou populations and hunting success; and concerns about potential for changes in water quality to affect the health of harvested fish within or downstream. • Peter Ballantyne Cree Nation reported concerns related to effects to waterways, including Reindeer Lake; effects to traditional food sources, such as caribou; concern about potential effects on caribou and the consumption of caribou; and concerns about potential for changes in water quality to affect the health of harvested fish within or downstream. • Hatchet Lake First Nation expressed concerns concern about potential effects on caribou and the consumption of caribou and the consumption of caribou. • Barren Lands First Nation expressed concern about potential effects on caribou and the consumption of caribou; and concerns regarding air quality, water quality • O-Pipon-Na-Piwin Cree Nation had concerns regarding water quality and environmental effects to its resources; concerns about potential for changes in water quality to affect the health of harvested fish. • Nisichawayasihk Cree Nation expressed concerns regarding human health. • Manitoba Metis Federation expressed concern about chemicals in tailings ponds entering waterways and having an effect on water, plants, fish, and

ID:	IAAC-175
	wildlife; concerns about dust from tailings resulting in a yellow residue on the land and stated that humans may become sick as a result of consuming foods that have been affected by tailings; concerns that an influx of a transient workforce will increase litter, which will affect the lands and waters; concern that the Town of Lynn Lake has been under a boil water advisory for many years; concerns about mining dust, chemicals, and contaminants (such as arsenic) entering into the country foods chain and making people sick. • Métis Nation-Saskatchewan, Eastern Region 1 expressed concerns regarding Project-related effects on woodland caribou migration. Residual effects on Indigenous health are assessed in Volume 2, Chapter 19, Section 19.4.3.3 of the EIS. It is anticipated that residual effects would primarily be experienced by Marcel Colomb First Nation, the only Indigenous Nation whose reserve is located within the Indigenous Health Conditions LAA and RAA. However, other Indigenous Nations may also experience residual effects as a result of the Project, through members traveling to the Lynn Lake area to harvest and consume country foods. The effects assessment conducted in Volume 2, Chapter 19, including for Indigenous health, considered information provided by each Indigenous Nation in assessing Project effects and in conducting a residual effects characterization. Where information from one Indigenous Nation would lead to identification of unique effects pathways or Project effects to that Indigenous Nation, Alamos would present a unique residual effects for that Indigenous Nation separately. However, Alamos did not identify that there were any unique effects on Indigenous health that would affect one Indigenous Nation differently than others engaged on the Project. That is, Alamos understands that all Indigenous Nations engaged on the Project could be similarly affected by changes in availability and access to country foods, by inhalation exposures to carcinogenic and non-carcinogenic chemical of potential concern (COPCs), by changes in noise levels, by ingestion exposure through consumption of country foods, and through changes in water quality. Therefore, the conclusions regarding residual effects to Indigenous health in Volume 2, Chapter 19, Section 19.4.3, and regarding cumulative effects to Indigenous health in Volume 2, Chapter 19, Section 19.5.2 apply equally to all Indigenous Nations engaged on the Project. Conclusions for effects on Indigenous health for each Indigenous Nation are summarized at a high level in Volume 2, Chapter 19, Sections 19.9.3.1 to 19.9.3.12. Alamos reported on the results of ongoing Indigenous engagement since the EIS filing in a supplemental filing in March 2021. No additional information regarding Indigenous health conditions has been received by Alamos. No new information regarding Indigenous health conditions has been received by Alamos since the EIS was submitted and therefore, no updates to the residual effects or cumulative effects on Indigenous health are required. Responses to comments CCN-106, CCN-108, CCN-111, CCN-112, CCN-113, and CCN-123 from Chemawawin Cree Nation; MCCN-94, MCCN-95, and MCCN-96 from Mathias Colomb Cree Nation; and SDFN-124, SDFN-126, SDFN-127, SDFN-128, SDFN-129, SDFN-139, and SDFN-147 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-175) and sought additional comment from the Nations.

ID:	**IAAC-175**
	Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-176

ID:	**IAAC-176**
Expert Department or Group:	MCCN-83 MCCN-86 MCCN-106 MCCN-107
Guideline Reference	6.1 Project setting and baseline conditions 6.1.9 Indigenous peoples
EIS Reference	18.2.1 Methods 18.4.1 Analytical Assessment Techniques
Information Request:	a. Confirm with each Indigenous Group that the species used in the Baseline Case for COPCs for traditionally harvested plants and animals are consistent with species of use. i. If required, update the Baseline Case to reflect species used by the Indigenous Groups, or provide a rationale for how the traditionally used plant and animal species used in the Baseline Case allow for a robust understanding of the potential effects of COPCs on Indigenous people. ii. Update the effects assessment to include information gathered from the Indigenous Groups, identify any changes to the conclusions of the effects assessments, and identify any additional mitigation measures, as necessary.
Response:	a. The Project-specific traditional land and resource use (TLRU) studies provided by Marcel Colomb First Nation and Manitoba Metis Federation confirm that species used in the Baseline Case for traditionally harvested plants and animals are consistent with species of use. Information provided through the Indigenous engagement program for the Project, including Project-specific TLRU studies, as well as a review of publicly available TLRU information sources, was used to select representative country foods for inclusion in the assessment. Due to the length of time required to conduct an assessment of country food quality, representative country foods were identified early in the assessment process. Alamos received Project-specific TLRU studies from Marcel Colomb First Nation and Manitoba Metis Federation; the TLRU information shared in these studies confirmed that the species used in the Human Health Risk Assessment (HHRA) are consistent with the species used by these Indigenous Nations. i. Blueberries, bog cranberries, cloudberries and Labrador tea were selected as being representative of the above-ground vegetation and fruit commonly harvested in the LAA. Root crops collected from backyard gardens were used to represent metal concentrations in below-ground traditional plants. The metal concentrations measured in blueberries, bog cranberries, cloud berries and Labrador tea were used to represent metal concentrations in the range of vegetation that Indigenous and non-Indigenous receptors may harvest from the study area. The human health risk assessment assumed that hares, moose, etc. were consumed as country foods. Red-backed voles and deer mice were selected as surrogates to predict metal uptake into larger mammals (hares, moose, etc.) that could be used as country foods. This information is used to predict the change in human health risk that could be attributed to Project activities over the life of the mine. The metal uptake data for the red-backed voles and deer mice collected from the Gordon and MacLellan areas were used only as a means of predicting potential metal uptake into the small mammals that could be consumed by Indigenous and non-Indigenous receptors. Small mammals such as red-backed voles and deer mice have

ID:	IAAC-176
	smaller home ranges than larger mammals and therefore metal uptake into these species would better reflect metal uptake from the assessment area than larger mammals whose home ranges may include areas beyond the assessment area and thus may have lower metal concentrations in tissues. Changes in metal concentrations in terrestrial plant and animal tissues are directly related to changes in metal concentrations in the soil between Baseline Case and Future Case (Post-Closure) conditions. The changes in metal concentrations in soil in the Gordon and MacLellan regions between Baseline and Future Case conditions are presented in Table 4-16 of the Human Health and Ecological Risk Assessment Technical Modelling Report (HHERA-TMR) (Volume 5, Appendix H of the EIS) and the changes in metal concentrations in terrestrial vegetation and mammals in the Gordon and MacLellan regions are provided in Table 4-17 and Table 4-20 (Volume 5, Appendix H). For both soil, vegetation and mammals, the predicted change in metal concentrations were less than 1% for most metals. ii. Alamos is committed to ongoing engagement with Indigenous Nations affected by the Project. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No additional information regarding traditionally used plant and animal species has been received by Alamos, and no changes to the conclusions of the EIS are proposed based on the information received through engagement with Indigenous Nations. Therefore, no updates to the HHRA are required and no additional mitigation measures are warranted. Responses to comments MCCN-83, MCCN-86, MCCN-106, and MCCN-107 from Mathias Colomb Cree Nation were provided by Alamos directly to that Indigenous Nation in February 2021. The direct responses to Mathias Colomb Cree Nation included the information provided herein (i.e., in this response to IAAC-176) and sought additional comment from the Nation. No further comments have been received from Mathias Colomb Cree Nation. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-177

ID:	**IAAC-177**
Expert Department or Group:	MCCN-87 MCCN-88
Guideline Reference	6.1 Project setting and baseline conditions
EIS Reference	18.4.1 Analytical Assessment Techniques
Information Request:	a. Verify the assumptions made about fish harvesting percentages and locations with Indigenous Groups. i. Confirm that Indigenous Groups do not obtain fish from Farley Lake. ii. If the assumptions are incorrect, update the effects assessment with appropriate harvesting information.
Response:	a. The Indigenous engagement program and Project-specific traditional land and resource use (TLRU) studies identified lakes from which fish are harvested but did not provide quantitative measures of the harvest. The assumption of a 10% harvest was based on professional judgement. The hazard quotients (HQs) associated with fish consumption for the Indigenous toddler and adult receptors for the Gordon Region and MacLellan Region are presented in Table 5-74 and Table 5-75 (Gordon Region) and Table 5-78 and Table 5-79 (MacLellan Region) of the Human Health and Ecological Risk Assessment Technical Modelling Report (Volume 5, Appendix H of the Environmental Impact Statement [EIS]). These HQs are based on an assumed 10% fish harvest rate from lakes within the local assessment area (LAA). With the exceptions of methylmercury and thallium for the toddler and adult receptors in both the Gordon and MacLellan Regions and zinc for the toddler in the Gordon Region, the predicted HQs associated with a 100% fish consumption rate are below the HQ benchmark of 0.2 for each of the metals. For methylmercury and thallium (and zinc for the toddler receptor in the Gordon Region), the predicted HQs do not change between Baseline Case and Future Case conditions, when 10% or 100% fish harvest/consumption rates are used. Thus, increasing the fish consumption rate to 100% would not alter the conclusions of the risk assessment or the significance determination. i. Through information obtained through the Indigenous engagement program for the Project, including Project-specific TLRU studies, none of the Indigenous Nations reported fishing in Farley Lake. However, given stated limitations in TLRU studies and the inability of the Indigenous engagement program to account for all traditional use by all Indigenous peoples in the LAA, Alamos cannot confirm that no Indigenous peoples fish in Farley Lake. The assessment of TLRU in Volume 2, Chapter 17 adopted a conservative approach and assumed that TLRU activities may occur near the Project where traditional resources are available and accessible, even if these activities are not specifically identified by participating Indigenous Nations. Nevertheless, given the concerns shared by Indigenous Nations about contamination from existing mine sites (for example, Marcel Colomb First Nation observes effects on fish in Cockeram Lake which are attributed to run off from historical mine tailings and the fact Farley Lake is immediately adjacent to the Gordon site, and that fishing in Farley Lake was not mentioned during engagement

ID:	IAAC-177
	activities, Alamos considers it unlikely that Indigenous Nations engaged on the Project obtain fish from Farley Lake. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No changes to the conclusions of the EIS are proposed based on the additional information received. Responses to comments MCCN-87 and MCCN-88 from Mathias Colomb Cree Nation were provided by Alamos directly to that Indigenous Nation in February 2021. The direct responses to MCCN-87 and MCCN-88 included the information provided herein (i.e., in this response to IAAC-177) and sought additional comment from Mathias Colomb Cree Nation. No further comments have been received from Mathias Colomb Cree Nation. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project. ii. As noted in the response provided above, increasing the estimated fish consumption rate for the LAA from 10% to 100% will not alter the conclusions of the risk assessment or the significance determination. Thus, updating the effects assessment is not necessary to address this comment.
Attachment:	No

RESPONSE TO IAAC-178

ID:	**IAAC-178**
Expert Department or Group:	MCCN-80
Guideline Reference	6.3.4 Indigenous peoples
EIS Reference	18.1.3 Potential Effects, Pathways and Measurable Parameters Table 18-1
Information Request:	a. Provide an updated effects assessment for human health to include backyard garden produce and country foods as separate effect pathways. b. Provide mitigation measures, monitoring, and follow-up programs, as necessary, to address any additional effects identified in the updated assessment.
Response:	a. The Assessment of Potential Effects on Human Health (Volume 2, Chapter 18 of the Environmental Impact Statement [EIS]) provides summaries of the total ingestion Hazard Quotients (HQs) for Indigenous toddler and adult receptors for the Gordon and MacLellan areas as well as the HQs for non-Indigenous residential receptors for both areas. These HQs represent the sums of the HQs calculated for the individual contributing pathways (fish, wild meat, traditional plants, garden produce, soil ingestion and dermal contact). Analysis of the contribution that each ingestion pathway makes to the total ingestion exposure for each receptor is provided in Volume 5, Appendix H of the EIS. The HQs calculated for individual country food components (i.e., fish, wild meat, and traditional plants) and garden produce are provided in Table 5-74 through Table 5-85 (Volume 5, Appendix H of the EIS). We trust that the separate analysis summarized in these tables provides the information requested. b. As noted above, the potential human health risks associated with individual exposure pathways was incorporated into the existing human health risk assessment. Therefore, an update to the effects assessment is not necessary to address this Information Request and thus, additional mitigation measures, monitoring and follow-up programs to address additional effects are not necessary.
Attachment:	No

RESPONSE TO IAAC-179

ID:	**IAAC-179**
Expert Department or Group:	HC-07
Guideline Reference	6.1.11 Human environment 6.3.4 Indigenous peoples
EIS Reference	Volume 5, Appendix H Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report 5.4 Risk Characterization Tables 5-9 to 5-16
Information Request:	a. Provide a multi-media approach in the HHRA for those COPCs that are present in several media and/or act on the same target organ(s) and/or share common mechanisms of action. b. Based on the results of the updated HHRA, provide mitigation measures, monitoring, and follow-up programs, as necessary.
Response:	a. The Human Health Risk Assessment (HHRA) used a multi-media (e.g., multiple exposure pathway) approach that included exposures for each of the complete exposure pathways identified in the conceptual site model (Volume 5, Appendix H, Table 5-4 of the EIS). The multi-media exposure pathways evaluated in the HHRA include: i. Inhalation of chemicals of potential concern (COPC) in ambient air (Indigenous, Residential and Off-Duty Worker). ii. Incidental ingestion of soil (Indigenous and Residential Receptors). iii. Dermal contact with soil (Indigenous and Residential Receptors). iv. Consumption of traditionally harvested vegetation (Indigenous and Residential Receptors). v. Consumption of wild meat (Indigenous and Residential Receptors). vi. Consumption of fish (Indigenous and Residential Receptors). vii. Consumption of garden produce (Indigenous and Residential Receptors). Baseline and Future Case hazard quotients (HQs) calculated for each of the individual pathways considered in the multi-media assessment are provided in the following tables in the EIS (Volume 5, Appendix H of the EIS): i. Inhalation exposures: Table 5-17 through Table 5-61. ii. Incidental ingestion of soil: Table 5-62 through Table 5-73. iii. Dermal contact with soil: Table 5-62 through Table 5-73. iv. Consumption of traditional vegetation: Table 5-74 through Table 5-85. v. Consumption of wild meat: Table 5-74 through Table 5-85. vi. Consumption of fish: Table 5-74 through Table 5-85. vii. Consumption garden produce: Table 5-74 through Table 5-85. Total aggregate risks for multi-media total ingestion exposures (soil ingestion; dermal contact with soil; consumption of traditional vegetation, wild meat, fish, and garden produce) are provided in Table 5-86 through Table 5-109. The risks associated with inhalation exposures were calculated using toxicological

ID:	IAAC-179
	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. Thus, summing inhalation and oral/dermal HQs has no meaningful toxicological basis. As a result, the HQ are assessed independently from the oral/dermal exposure and have not been incorporated into the multi-media assessment of oral/dermal exposures. To determine whether such summations may alter the conclusions of the HHRA, the Total Ingestion HQs for the Indigenous and Residential Toddler receptors were reviewed to identify the maximum and minimum predicted HQ. These HQs were then summed with the corresponding concentration ratios (CRs) calculated for inhalation exposures for the same receptors. The maximum total ingestion HQ (3.8) was predicted for thallium for the Indigenous toddler receptor in the MacLellan Region (Table 5-90 of Volume 5, Appendix H). The inhalation CR for thallium for this receptor was 2.8×10^{-5} (0.000028) (Table 5-58 of Volume 5, Appendix H). This is 10,000 times lower than the Total Ingestion HQ for this receptor and thus, including inhalation risks with the total ingestion risks would not alter the conclusion of the HHRA. The minimum predicted total ingestion HQ (1.1×10^{-4}) was predicted for chromium for the residential receptor in the MacLellan Region (Table 5-92 of Volume 5, Appendix H). The inhalation CR for chromium for this receptor was predicted as 1.4×10^{-1} (Table 5-58 of Volume 5, Appendix H). In this instance the total ingestion HQ is approximately 1000 times lower than the inhalation CR and thus, summation of the two values would not result in a combined risk that would exceed the benchmark of 0.2 and thus, would not alter the conclusions of the HHRA. b. The work being requested is already presented in the Human Health and Ecological Risk Assessment Technical Modelling Report (Volume 5, Appendix H) and has been incorporated into the risk characterization and the identification of mitigation measures and monitoring – no additional updates to these components are required in response to this IR.
Attachment:	No

RESPONSE TO IAAC-180

ID:	**IAAC-180**
Expert Department or Group:	HC-08
Guideline Reference	6.1.11 Human environment 6.3.4 Indigenous peoples
EIS Reference	Volume 5, Appendix H Lynn Lake Gold Project, Human Health and Ecological Risk Assessment Technical Modelling Report 5.1.1.4 Specific Assumptions for the Off-Duty Worker Receptor 5.2.2.1 Inhalation Exposures
Information Request:	a. Provide scientific rationale, on a chemical-specific basis, (with supporting TRVs—acute, subchronic, chronic) to indicate why the dose averaging approach used in the HHRA is adequately protective of human health for the exposure period considered.
Response:	a. For off-duty workers chronic inhalation risks were assessed for the criteria air contaminants (CACs) with annual average toxicological reference values (TRVs; NO_2 and $PM_{2.5}$), diesel particulate matter (DPM), hydrogen cyanide (HCN), volatile organic compounds (VOCs), non-carcinogenic polycyclic aromatic hydrocarbons (PAHs) and metals. Dose averaging was not applied in the assessment of chronic inhalation health risks for nitrogen dioxide (NO_2) and particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$). Dose averaging was only used for assessing chronic inhalation exposures to DPM, HCN, VOCs, non-carcinogenic PAH and metals for off-duty workers housed in the work-camp. Consistent with Health Canada guidance (Health Canada 2019) for each of these individual contaminants, chronic exposure TRVs recommended by the identified agencies were selected for use in the assessment. The selection process used to identify TRVs and the chronic exposure TRVs (expressed as Tolerable Concentrations) for the individual COPC are provided in the following tables in Section 5.3.4 of Volume 5, Appendix H: i) DPM – Table 5-7 ii) HCN – Table 5-8 iii) VOC – Table 5-9 iv) Non-Carcinogenic PAH – Table 5-11 v) Metals – Table 5-13 Off-duty workers were assumed to be present in the work camp 24 hours per day 7 days per week for 26 weeks per year (based on work rotation of 2 weeks on, 2 weeks off) (equivalent to 183 days per year or a dose averaging factor of 0.5) for each year of mine operation. This represents a chronic exposure as indicated by Health Canada, which defines chronic exposures as those that last for periods of several years to a lifetime (Section 7.3 Health Canada 2019). In addition, health risks associated with chronic inhalation exposures for off-duty workers were calculated using the Health Canada general equation for characterizing inhalation risks which incorporates consideration of the fraction of time exposed (Appendix E of Health Canada 2019). Consistent with the recommendations in Appendix E of Health Canada 2019, the potential for developmental effects was considered for DPM, HCN, and each of the VOC, non-carcinogenic PAHs, and metals identified

ID:	IAAC-180
	as chemicals of potential concern (COPC). None of the inhalation TRVs for the COPC included in the assessment are based on developmental effects. Thus, the consideration of the weeks per year of exposure (exposure averaging component D3 in Appendix E) is appropriate for DPM, HCN, and each of the VOC, non-carcinogenic PAH, and metals included as COPC. In addition, the TRVs selected for assessing chronic (long-term or annual average) exposures were based on chronic exposure duration inhalation studies and thus are appropriate for evaluating the potential human health risks associated with chronic inhalation exposures to the COPC evaluated in the human health risk assessment (HHRA). Thus, the application of a dose-averaging factor of 0.5 and TRVs based on chronic exposures, to assess the potential health risks associated with inhalation exposures for off-duty workers is consistent with Health Canada guidance (Health Canada, 2019). The predicted concentration ratios (CRs) for these COPCs are all below the 1.0 benchmark: i) DPM CR = 0.012 (Table 5-31 Volume 5 Appendix H) ii) HCN CR = 0.26 (Table 5-37) iii) VOC Max CR = 0.28 (Acrolein Table 5-48) iv) Non-Carcinogenic PAH Max CR = 0.00058 (Pyrene Table 5-54) v) Metals Max CR = 0.34 (Total Chromium, Table 5-60). In each case, applying a dose-averaging factor of 1.0 rather than the 0.5 factor used in the assessment would double the calculated CRs, but each would remain below 1.0 (applicable in cases where the exposures being considered represent the predominant exposures which is the case for inhalation exposures to Project-related COPC for the off-duty worker) and thus would not alter the conclusions of the HHRA. b. For carcinogenic compounds, the incremental lifetime cancer risks (ILCR) were calculated using the equations provided in Appendix G of Health Canada 2019. Thus, the inhalation unit risk TRVs used in the assessment are appropriate for assessing the potential human health risks associated with inhalation exposures to the carcinogenic COPC. **References**: Health Canada 2019. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment – Appendix G. Available at: https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-risk-assessment.html)
Attachment:	No

RESPONSE TO IAAC-181

ID:	**IAAC-181**
Expert Department or Group:	IAAC
Guideline Reference	2.4 Application of the precautionary approach 6.3.4 Indigenous peoples
EIS Reference	14.4.2.1 Project Pathways 18.4.1.Analytical Assessment Techniques
Information Request:	a. Explain why the two weeks on, two weeks off shift rotation assumption was used in the human health assessment instead of the three weeks on, one week off rotation. b. Describe any changes to the results of the human health assessment for off-duty workers using the three weeks on, one week off shift rotation assumption versus the two weeks on, two weeks off shift rotation. If required, identify new mitigation measures based on results of any changes to the human health assessment.
Response:	a. At the time of preparation of the Human Health and Ecological Risk Assessment Technical Modelling Report (Volume 5, Appendix H of the Environmental Impact Statement [EIS]), a 2 weeks on, 2 weeks off, work rotation was planned. b. Consideration of work rotation is not applicable to short-term exposures (e.g., 1-hour, 24-hour exposures). An averaging factor (Fraction of time exposed) was not used when evaluating potential human health risks associated with short-term exposures for off-duty workers housed in the camp. Consideration of the work-rotation applies to estimating risks associated with chronic exposures to COPC (annual average values for non-carcinogenic compounds and the lifetime averaged daily exposure for carcinogenic compounds). For non-carcinogenic compounds, an averaging factor of 0.5 (26 weeks of work/52 weeks per year) used to calculate the yearly-averaged daily exposures for off-duty workers in the camp. Using a 3 weeks on 1 week off work rotation, would increase the exposure averaging factor to 0.75 (39 weeks of work/52 weeks per year). The annual average concentration ratios (CRs) for off-duty workers based on a 3 weeks on 1 week off schedule are provided in the attached table. For each of the COPCs except $PM_{2.5}$, the predicted CRs based on the adjusted work schedule are below 1.0, indicating that long-term exposures to these COPCs represents a negligible human health risk. Changing the work schedule to a 3 week on 1 week off work rotation increases the CR for $PM_{2.5}$ from 0.82 to 1.2. It is recognized that NO_2 and $PM_{2.5}$ are thought to be non-threshold contaminants and that exposure to even very low levels of these compounds can be associated with potential human health risks. Regulatory agencies have not developed risk acceptability benchmarks for these compounds. In the absence of such benchmarks, predicted concentrations that are below the respective CAAQS for these compounds are considered to represent a negligible human health risk. Thus, CRs that are below 1.0 for NO_2 and $PM_{2.5}$ are considered to represent a negligible human health risk. Although the CR for annual average exposure to $PM_{2.5}$ is above 1.0 (1.2) these results are based on air quality modelling that do not account for frozen ground on the stockpiles, tailings management facility or in the open pit, that would prevent particulate release from the sources during the winter months. Based on this, it is reasonable to conclude that the annual average $PM_{2.5}$ concentrations in the worker

ID:	IAAC-181
	camp have been over-predicted and that actual exposures experienced by off-duty workers would be lower than those predicted from the results of the air quality modelling. These results suggest that altering the work rotation to a 3 weeks on 1 week off would not alter the assessment conclusions. For carcinogenic compounds, a lifetime averaged daily exposure averaging factor of 0.081 was used (based on 24 hours per day 26 weeks per year over an operational mine life of 13 years). Changing to a 3 week on, 1 week off work rotation increases the averaging factor to 0.12 for estimating lifetime averaged daily exposures. The cancer CRs based on a 3 weeks on 1 week off work rotation are provided in the attached table. The equivalent incremental lifetime cancer risks are also provided for ease of comparison. The cancer risk CRs are below 1 and the ILCRs are below 10^{-5} for each of the carcinogenic COPC. Thus, altering the work rotation to a 3 weeks on 1 week off schedule would not alter the assessment conclusions.
Attachment:	Appendix A, Attachment IAAC-181

RESPONSE TO IAAC-182

ID:	**IAAC-182**
Expert Department or Group:	CCN-29 CCN-30 CCN-31 CCN-32 CCN-33 CCN-34 CCN-35 CCN-36 CCN-37 CCN-38 IAAC MCCN-89 SDFN-27 SDFN-33 SDFN-34 SDFN-35 SDFN-36 SDFN-37 SDFN-38 SDFN-39 SDFN-40 SDFN-41 SDFN-42
Guideline Reference	5.0 Engagement with Indigenous Groups and Concerns Raised 6.3.4 Indigenous Peoples 6.5 Significance of residual effects
EIS Reference	6.4.1.4 Project Residual Effects 18.7.1 Significance of Project Residual Effects
Information Request:	a. Describe how the potential Indigenous receptors were identified and how they relate to locations of importance in the exercise of Section 35 Rights of the *Constitution Act*, 1982. b. Describe how Indigenous Groups will be notified of the anticipated exceedances and how unexpected and unpredicted exceedances will be communicated, throughout the life of the Project. c. Identify how the "additional investigation to further characterize potential human health risks" associated with these exceedances will be triggered and how it will take place. d. Identify and assess the linkages between effects to air quality and potential impacts (tangible and intangible) to Indigenous Groups on use of lands for traditional purposes and potential impacts to Section 35 Rights of the *Constitution Act*, 1982.
Response:	a. Through the Indigenous engagement program, effects to the atmospheric environment, among other effects were reported to be of concern to Indigenous Nations (Volume 2, Chapter 19, Table 19-1). The Project effects on other VCs that were considered in the assessment of Indigenous peoples (i.e., changes to air quality) are described in Volume 2, Chapter 19, Section 19.1.2.2. Through engagement, Alamos also learned of active hunting, trapping, fishing, plant gathering, camping/shelter as well as cultural and spiritual areas and used this information, along with information provided from TLRU studies, and publicly available TLRU information sources, to identify potential receptors accordingly to characterize air quality at locations where Indigenous peoples are likely to practice additional harvesting. b. Alamos is committed to on-going engagement with Indigenous Nations potentially affected by the Project. On April 22, 2021, Alamos provided descriptions of conceptual environmental Management and Monitoring Plans, including the Air Quality Management and Monitoring Plan (AQMMP), to Indigenous Nations engaged on the Project. The plan descriptions included information on parameters to be monitored, methodology and equipment to be used, the frequency and duration of monitoring, adaptive management triggers/thresholds, and reporting requirements. The intent of sharing this information was to provide an opportunity for Indigenous Nations to participate in the design and implementation of environmental Management and Monitoring Plans. Alamos has followed up with Indigenous Nations to confirm the receipt of the plans and encourage Nations to provide feedback, however, no Indigenous Nation has provided a response to date.

ID:	IAAC-182
	As outlined in the description of the conceptual AQMMP, reports from monitoring air quality will be submitted annually to regulatory authorities and shared with interested Indigenous Nations and local stakeholders. As stated in Volume 3, Chapter 23, Section 23.3, Alamos will maintain ongoing communication with Indigenous Nations, stakeholders, provincial regulators, including other provincial and federal departments, as necessary regarding implementation of the Project's EMMP, including exceedances identified through the AQMMP, through construction and operation, and into decommissioning. A communication mechanism for providing data will be established to distribute information and accept inquiries from Indigenous Nations, the public, and stakeholders. Alamos maintains a local office/presence in Lynn Lake that facilitates ongoing communications with members of the local community, stakeholders, and interested government officials (on an as needed basis). c. The reference to "additional investigation to further characterize potential human health risks" comes from Volume 2, Chapter 18, Section 18.4.2.3, page 18.30, second paragraph, third sentence - and is part of a larger discussion which notes "An exceedance of a concentration ratio (CR) is not indication that human health effects will occur. Rather, it is an indication that additional investigation is required to further characterize potential human health risks". This additional investigation is presented in the rest of that paragraph in the form of an analysis of the frequency of exceedances of 1-hour NO_2 concentrations in the Gordon Region. In the context intended in the discussion presented, the trigger is a single predicted CR that exceeds the acceptability benchmark. When a predicted CR exceeds the benchmark, an exceedance frequency analysis, as described in Volume 2, Chapter 18, Section 18.4.2.3, is used to determine the overall potential that the exceedance could lead to a human health effect. d. The assessment of current use of lands and resources for traditional purposes (Volume 2, Chapter 17) considers effects to vegetation from air emissions (Volume 2, Chapter 11, Section 11.4.3.3) and effects to human health risk from dust fall exposure on vegetation (Volume 2, Chapter 18, Section 18.4.2.3). Volume 2, Chapter 17, Section 17.4.2.3 describes the residual effects of dust fall anticipated for current use extending into the Local Assessment Area (LAA) and recognizes that there may be perceived loss of plant species and plant harvesting sites due to dust deposition on plants and berries and that harvesting sites may be avoided by Indigenous peoples due to the potential for human health risks from inhalation of dust while picking vegetation or from ingestion of dust on vegetation. Conclusions from Volume 2, Chapter 17 support the assessment of effects of the Project on Indigenous peoples (Volume 2, Chapter 19), concluding that effects of the Project (i.e., air quality) are not expected to result in residual effects to Indigenous health and wellbeing (Volume 2, Chapter 19, Section 19.7.1). This conclusion informed the assessment of Indigenous and Treaty rights in Volume 2, Chapter 19, Section 19.3.3.
Attachment:	No

RESPONSE TO IAAC-183

ID:	**IAAC-183**
Expert Department or Group:	HC-05 IAAC MCCN-86
Guideline Reference	5.0 Engagement with Indigenous Groups and Concerns Raised 6.1 Project setting and baseline conditions 6.1.11 Human environment
EIS Reference	18.4.1 Analytical Assessment Techniques 18.4.2.1 Project Pathways 19.2.2.1 Indigenous Health Conditions 19.4 Assessment of Residual
Information Request:	a. Provide details on the risk characterization of Baseline Case and Future Case scenarios for manganese, methylmercury, and thallium, including: i. a comparison of both scenarios in absolute terms rather than based on a change in HQ; ii. a description of assumptions used, sources of uncertainty and conservativism; iii. identifying the potential source or contributor to any increase in characterized risk between scenarios; and iv. consideration of additional mitigation and monitoring to manage the potential increased health risks. b. Describe plans to engage with each Indigenous Group to verify the potential ingestion exposures. If required, update the effects assessment with any new information that is provided, and identify new mitigation measures. c. Demonstrate that the potential exceedances have been communicated and shared with each Indigenous Group.
Response:	a. Details on the risk characterization for Baseline Case and Future Case scenarios for manganese, methylmercury and thallium are provided in Section 5.4.5 of the Human Health and Ecological Risk Assessment Technical Modelling Report (HHERA-TMR) (Volume 5, Appendix H of the Environmental Impact Statement [EIS]). i. Analysis of the contribution that each ingestion exposure pathway makes to the total ingestion exposure is provided in Volume 5, Appendix H of the EIS. The hazard quotients (HQs) calculated for individual country food components (i.e. fish, wild meat, traditional plants) and backyard garden produce are provided in Table 5-74 through Table 5-85 (Volume 5, Appendix H of the EIS). Baseline Case and Future Case HQs are presented side by side in each of these tables to facilitate comparison between the two cases. Baseline Case and Future Case total HQs are above 0.2 for manganese, methylmercury, and thallium for the Indigenous toddler receptor (maximum HQ = 3.8 for the Indigenous toddler receptor in the MacLellan Region – Table 5-78 of the HHERA-TMR). There is essentially no change in HQs between Baseline Case or Future Case conditions for the Indigenous and Residential toddler and adult receptors in either the Gordon or MacLellan Regions. Estimated exposures (expressed as mg/kg-day) for each receptor for each

ID:	IAAC-183
	COPC are provides in Appendix F (HHRA Outputs) of the HHERA-TMR (Volume 5, Appendix H). ii. The receptor assumptions used to estimate potential exposures to COPCs through inhalation, direct contact, drinking water, country food and backyard garden produce consumption for Indigenous, Residential and Off-duty workers, are presented in Section 5.1.1 of the HHERA-TMR (Volume 5, Appendix H). The potential sources of uncertainty and conservatism are discussed in Section 5.5 of the HHERA-TMR (Volume 5, Appendix H). iii. As noted above, there is essentially no change in exposure to manganese, methylmercury or thallium between Baseline Case and Future Case conditions for Toddler and Adult Indigenous and Residential receptors. iv. As noted above, there is essentially no change in human health risks associated with exposure to manganese, methylmercury or thallium between Baseline Case and Future Case conditions for toddler or adult Indigenous and Residential receptors. Planned monitoring of fish and plant tissue will provide information regarding changes in metal concentrations in country foods. Therefore, additional mitigation and/or monitoring to manage potential increases in human health risk associated with these metals is not warranted. b. & c. On April 22, 2021, Alamos provided descriptions of conceptual environmental Management and Monitoring Plans to Indigenous Nations engaged on the Project. The plan descriptions included information on parameters to be monitored, methodology and equipment to be used, the frequency and duration of monitoring, adaptive management triggers/thresholds, and reporting requirements. The intent of sharing this information was to provide an opportunity for Indigenous Nations to participate in the design and implementation of environmental Management and Monitoring Plans. Alamos has followed up with Indigenous Nations to confirm the receipt of the plans and encourage Nations to provide feedback, however, no Indigenous Nation has provided a response to date. Reports from monitoring plans will be submitted annually to regulatory authorities and shared with interested Indigenous Nations and local stakeholders. As stated in Volume 3, Chapter 23, Section 23.3 of the EIS, Alamos will maintain ongoing communication with Indigenous Nations, stakeholders, provincial regulators, including other provincial and federal departments, as necessary regarding implementation of the Project's EMMP, including exceedances identified through monitoring, through construction and operation, and into decommissioning. A communication mechanism for providing data will be established to distribute information and accept inquiries from Indigenous communities, the public, and stakeholders. Alamos maintains a local office/presence in Lynn Lake that facilitates ongoing communications with members of the local community, stakeholders, and interested government officials (on an as needed basis). Alamos is committed to on-going engagement with Indigenous Nations affected by the Project. No additional information regarding potential ingestion exposures has been received by Alamos. Therefore, no updates to the HHRA are required.
Attachment:	No

RESPONSE TO IAAC-184

ID:	**IAAC-184**
Expert Department or Group:	CCN-110 CCN-112 CCN-113 MCCN-67
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised 6.1.9 Indigenous peoples 6.3.4 Indigenous peoples
EIS Reference	16.0 Heritage 19.2.2 Overview 19.4.5 Change in Indigenous Physical and Cultural Heritage Table 19-3
Information Request:	a. Provide updated Project-specific baseline data for physical and cultural heritage resources in the PDA, LAA, and RAA. Describe how Indigenous Groups were involved / will be involved in the gathering of this information. b. Identify the criteria used to assess the effect of any change on the environment to Indigenous physical and cultural heritage. Update the effects assessments based on any newly identified sites of Indigenous physical and cultural heritage. c. Describe mitigation and monitoring proposed to prevent or address potential impacts to sites of physical and cultural importance during all phases of the Project. Consider providing this information as a plan. d. Describe how input from each Indigenous Group was considered in parts a, b, and c.
Response:	a. Existing conditions (baseline) for Indigenous physical and cultural heritage are summarized in Volume 2, Chapter 19, Section 19.2.2.3 of the Environmental Impact Statement (EIS). This includes heritage sites identified in Volume 2, Chapter 16 (Heritage Resources) and cultural and spiritual sites identified in Volume 2, Chapter 17 (Traditional Land and Resource Use). With respect to baseline for heritage resources sites, a total of 781 heritage resources sites have been recorded in the Indigenous Physical and Cultural Heritage regional assessment area (RAA); these sites were recorded with the Ministry of Manitoba Sport, Culture, and Heritage (MSCH) as a result of Heritage Resources Impact Assessments (Volume 2, Chapter 16, Section 16.2.2 of the EIS). There are 11 heritage resources recorded within the heritage resources local assessment area (LAA). No heritage resource sites have been recorded in the Gordon site Project development area (PDA) and there is a low potential for such resources to be present based on predictive modelling. There are 10 recorded sites within the MacLellan site PDA. Three of the MacLellan recorded sites are from the Historic Period and probably relate to early mineral exploration camps or temporary habitation sites. Several uninterpreted sites were identified in the MacLellan PDA. These sites date to the Precontact Period and pertain to locations where only a few artifacts are recovered and the activities that produced the cultural deposit are not evident. A section of the Minton Lake Portage was also identified as a heritage resources site within the MacLellan site PDA (Volume 2, Chapter 16, Section 16.2.2). A TLRU study completed by Marcel Colomb First Nation makes no mention of using the Minton Lake portage to access Minton Lake

ID:	IAAC-184
	or the upland areas within the MacLellan site PDA. No cultural sites or landscapes were identified by Marcel Colomb First Nation within either the Gordon site PDA or MacLellan site PDA. The location of heritage resources sites in the PDA, LAA and RAA are depicted in Volume 2, Chapter 16, Figure 16-5 of the EIS. With respect to baseline for cultural and spiritual sites, Marcel Colomb First Nation, through their Project-specific traditional land and resource use (TLRU) study, indicated the existence of a number of trails, routes, cabins, and camps that fall within the Indigenous Physical and Cultural Heritage LAA and RAA. There is one reported travelroute in the MacLellan PDA, three habitations and seven travel routes in the LAA and approximately 15 habitations, 20 travel routes and three areas of cultural or spiritual importance in the RAA. One winter road identified by Marcel Colomb First Nation passes through the PDA, as does Keewatin River, which is used by Marcel Colomb First Nation as a travelway. Marcel Colomb First Nation has also reported multiple burial sites in the RAA and stated that Goldsand Lake is a culturally important area that may house burial sites. Other burial sites include locations on an island in Eden Lake, and at the north end of Hughes Lake. Marcel Colomb First Nation also reported a sweat lodge located at Swede Lake. The Marcel Colomb First Nation TLRU study was submitted with the EIS by permission and appears in Volume 2, Chapter 17, Appendix A, Figure 3b in the EIS. Manitoba Metis Federation, through their Project-specific TLRU study, identified access routes, campsites, and cultural sites within 100 km of the Project, including a cemetery with affiliation to the Manitoba Métis Community located near Lynn Lake. No current use locations are reported in the PDA, one occurs in the LAA and 14 in the RAA. The Manitoba Metis Federation TLRU study was submitted with the EIS by permission and appears in Volume 2, Chapter 17, Appendix A, Figures 7, 16, and 17 in the EIS. Alamos is committed to on-going engagement with Indigenous Nations affected by the Project. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other additional information regarding physical and cultural heritage resources has been received by Alamos. No updates to the baseline data for physical and

ID:	IAAC-184
	cultural heritage resources in the PDA, LAA, and RAA are required and no changes to the conclusions of the EIS are necessary. b. Effects to Indigenous physical and cultural heritage can include indirect changes, as would occur through increases in noise, light, dust (and other emissions) and sensory changes, and direct changes, such as could occur through physical loss of, or loss of access to, resources as a result of Project activities. As explained in Section 19.2.5 in Volume 2, Chapter 19 of the EIS, the assessment of effects on Indigenous physical and cultural heritage carries forward pathways from Volume 2, Chapters 16 and 17. These are change in heritage resources; change in access to resources currently used for traditional purposes; and change to traditional cultural and spiritual sites and areas. The Project has the potential to affect Indigenous physical and cultural heritage through the physical removal of, or changes to, features and indirectly through Project-generated emissions. During construction, vegetation will be removed during the physical clearing of the site, and signage and fencing will be erected to manage access to the Project. Project-related emissions during all Project phases, such as noise, and dust from blasting and traffic, as well as removal of visual buffers as a result of vegetation clearing could disturb or change the use of cultural and spiritual sites and areas. Dewatering activities will take place through the construction phase. Changing water levels will continue during the operation phases of the Project and have the potential to introduce changes to sites and areas if access becomes blocked or if sites are directly affected by overland water flows. Changes during the decommissioning/closure phase may have positive outcomes, including reductions of sensory disturbance and vegetation succession. Table 19-2 in Volume 2, Chapter 19 of the EIS presents potential effects pathways related to Indigenous physical and cultural heritage. Table 19-5 in Volume 2, Chapter 19 of the EIS presents residual effects criteria for Indigenous physical and cultural heritage. Table 19-6 in Volume 2, Chapter 19 of the EIS presents Project interactions with Indigenous physical and cultural heritage. Alamos has continued engagement with Indigenous Nations since the EIS has been filed (see Supplemental Filing on Engagement submitted in March 2021) but has not received additional information about Indigenous physical and cultural heritage and no new sites have been identified. Therefore, no update to the effects assessment for Indigenous physical and cultural heritage is required at this time. c. Mitigation measures proposed to avoid or reduce potential adverse effects on Indigenous physical and cultural heritage are presented in Section 19.4.5.2 in Volume 2, Chapter 19 of the EIS. Key mitigation measures which will be implemented to reduce changes to Indigenous physical and cultural heritage include: • Consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring. • Development and implementation of Project-specific environmental management and monitoring plans, and discussion with Indigenous Nations regarding these plans.

ID:	IAAC-184
	• Implementation of the Heritage and Cultural Resource Protection Plan (HCRPP) when heritage or cultural resources, or objects thought to be heritage or cultural objects, are exposed. • Protective barriers placed around heritage resource sites that are inadvertently found during construction so that the area can be protected while work proceeds. • Evaluation by a professional archaeologist of PDA changes or added development components. • Controlled surface collection or salvage excavation of known heritage resource sites, or a portion thereof, that cannot be avoided. • Education of construction contractors for the appropriate protocols if heritage or cultural resources, or objects thought to be heritage or cultural resources, are discovered. • Training of staff in the recognition of archaeological features and objects such as precontact Indigenous material culture, and 19th and 20th century Euro-Canadian material culture. • Review the potential and documented historical use and occupation of the PDA and Indigenous physical and cultural heritage LAA with staff. • Construction monitoring by a professional archaeologist in areas that are heritage sensitive such as sites identified as being culturally sensitive by Indigenous engagement. • Potential for the hiring of Indigenous field support staff as part of an environmental monitoring team. • Implementation of the procedures identified in the HCRPP in the event of a suspected archaeological discovery. Through the Indigenous engagement process for the Project, Indigenous Nations provided recommendations and requests mitigate for potential effects to Indigenous physical and cultural heritage. Marcel Colomb First Nation recommended protection for unmarked burials. Alamos will develop a HCRPP to respond to the discovery of unknown Indigenous physical and cultural heritage sites. Finalization of management and monitoring plans will occur during the permitting stage of Project planning (i.e., following receipt of a federal Decision Statement for the Project under CEAA 2012 and provincial licences for the Project under *The Environment Act* of Manitoba) and will be completed prior to the start of Project construction. The HCRPP will allow Alamos to safeguard heritage and cultural resources discovered or disturbed during Project construction and operation. The HCRPP will comply with requirements of the Manitoba Historic Resources Branch and will be based on past learnings from previous projects, and knowledge of the existing heritage resource conditions within the Gordon and MacLellan sites. The HCRPP will also incorporate TLRU information and outline engagement protocols with the Indigenous Nations if heritage or cultural resources are found during construction or operation. If cultural and heritage resources are found, Alamos and its contractors will leave all artifacts in situ and will not remove objects from the site until advised by a permitted archaeologist. There will be no activities within a 50 m radius buffer until the archaeologist has completed an archaeological investigation.

ID:	IAAC-184
	d. Input from each Indigenous Nation was considered in parts a, b, and c to the extent that such information was available to Alamos. The methods for the assessment of Indigenous physical and cultural heritage, including the identification of Project interactions with Indigenous physical and cultural heritage and potential effects pathways, were developed in consideration of: • Results of the Indigenous engagement program for the Project, including Project-specific traditional land and resource use (TLRU) studies; • Review of publicly available literature containing TLRU information for Indigenous Nations engaged on the Project; • Conclusions of relevant biophysical and socioeconomic assessments; and • Feedback on the assessment from participating Indigenous Nations. The objectives and approach for Indigenous engagement on the Project is described in Volume 1, Chapter 3, Section 3.3 of the EIS. As described above, baseline information about cultural and spiritual sites shared by Marcel Colomb First Nation and Manitoba Metis Federation contributed to the assessment of TLRU in Volume 2, Chapter 17 of the EIS and was incorporated in to the assessment of Indigenous physical and cultural heritage in Volume 2, Chapter 19, Section 19.2.2.3 of the EIS. Mitigation for Indigenous physical and cultural heritage was developed in consideration of Marcel Colomb First Nation recommended protection for unmarked burials. No additional information regarding Indigenous physical and cultural heritage was shared by Indigenous Nations prior to filing the EIS. As described in Volume 1, Chapter 3, Section 3.1 of the EIS, the Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through: • In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by IAAC. In addition, Alamos provided a copy the assessment of Indigenous or Treaty rights in Volume 2, Chapter 19, Section 19.9 of the EIS to each Indigenous Nation for their review and comment. Volume 2, Chapter 19, Sections 19.9.3.1 to 19.9.3.12 offers a plain language summary of potential Project effects on Indigenous and Treaty rights, including a summary of anticipated effects on Indigenous physical and cultural heritage. Alamos has not received feedback on the assessment of Indigenous physical and cultural heritage. A supplemental filing was submitted to IAAC in March 2021 that includes new information collected from additional engagement activities conducted between May 22, 2020 and December 31, 2020. No additional information regarding physical and cultural heritage resources has been received by Alamos. Therefore, no updates to the baseline data for physical and cultural heritage resources in the

ID:	IAAC-184
	PDA, LAA, and RAA are required and no changes to the conclusions of the EIS are necessary. Alamos is committed to open and transparent engagement throughout the life of the Project and will continue to work diligently with participating Indigenous Nations to document and respond to concerns raised in relation to the Project and its potential effects. As noted above, Alamos has received Project-specific TLRU studies from Marcel Colomb First Nation and Manitoba Metis Federation and relevant information shared in these TLRU studies has been incorporated into the assessment of Indigenous physical and cultural heritage. Responses to comments CCN-110, CCN-112, and CCN-113 from Chemawawin Cree Nation and comment MCCN-67 from Mathias Colomb Cree Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to Chemawawin Cree Nation and Mathias Colomb Cree Nation included the information provided herein (i.e., in this response to IAAC-184) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be ongoing for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-185

ID:	**IAAC-185**
Expert Department or Group:	IAAC
Guideline Reference	6.3.4 Indigenous peoples 6.4 Mitigation measures
EIS Reference	16.4 Assessment of Residual Environmental Effects on Heritage Resources 16.5 Assessment of Cumulative Environmental Effects on Heritage Resources 16.7 Determination of Significance 16.9 Follow-up and Monitoring 23.5.11 Heritage and Cultural Resources Protection Plan
Information Request:	a. Clarify the assessment conclusion (no residual or low potential for residual effects) for heritage resources, including a rationale for the conclusion. Update the cumulative effects assessment as required.
Response:	a. The Project and the site Project Development Areas (PDAs) are in the disturbed context of historic mines. Heritage resources within the PDAs are 20th century features and structures relating to the historic mining activity. Recording of these structures and features (e.g., a 1950s equipment shack and exploration camp) were mitigated through the record made as part of the heritage resource impact assessment (HRIA). Uninterpreted precontact archaeological sites discovered during the HRIA are, with one exception, outside the tree clearing area of the PDAs and therefore will not be disturbed. The Site within the clearing area consisted of a single artifact that was recovered during the HRIA and has, therefore, been mitigated. As described in Volume 2, Chapter 16, Section 16.1.6 of the Environmental Impact Statement, a significant adverse residual effect on heritage resources is defined as a Project-related effect that results in unmitigated disturbance to, or destruction of, heritage sites in the PDAs. As heritage resources are either removed, mitigated or avoided, there is no pathway for cumulative effects and, therefore, no cumulative effects assessment was warranted. Acceptance by the province of the Heritage Resource Impact Assessment represents the conclusion of the assessment process.
Attachment:	No

RESPONSE TO IAAC-186

ID:	**IAAC-186**
Expert Department or Group:	IAAC
Guideline Reference	3.2.2 Valued components to be examined 5.0 Engagement with Indigenous Groups and Concerns Raised
EIS Reference	17.3 Project Interaction with Current use of Land and Resources for traditional Purposes 17.4 Assessment of Residual Environmental Effects on Current Use of Lands and Resources for Traditional Purposes
Information Request:	a. Provide updated, Project-specific baseline data for cultural and spiritual sites in the PDA, LAA, and RAA. Update the effects assessment with this information and identify any mitigation measures as required. b. Provide mitigation measures and the procedures the proponent will follow should a site of cultural or spiritual significance be discovered/disclosed throughout the life of the Project. c. Identify how information from each Indigenous Group was considered in the identification of cultural and spiritual sites, and the development of proposed mitigation measures. d. Describe how the proponent plans to engage with Indigenous Groups to verify potential impacts to cultural and spiritual sites. If required, update the effects assessment with any new information that is provided, and identify new mitigation measures.
Response:	a. Volume 2, Chapter 17, Sections 17.2.14.1 through 17.2.14.14 of the Environmental Impact Assessment (EIS) provide baseline details of trails, travelways, habitations and places of cultural and spiritual importance in the regional assessment area (RAA, Figure 17-1). These data are from Project-specific traditional land and resource use (TLRU) studies from Marcel Colomb First Nation and the Manitoba Metis Federation as well as engagement with other Indigenous Nations identified as potentially affected by the Impact Assessment Agency of Canada (IAAC). Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations.

ID:	IAAC-186
	No other new information regarding Indigenous cultural and spiritual sites has been received by Alamos since the EIS was submitted and therefore no update to the conclusions of the EIS is required. b. Volume 2, Chapter 16, Section 16.4.2.2 of the EIS indicates that Alamos will develop a Heritage and Cultural Resource Protection Plan (HCRPP) to mitigate heritage and cultural resources discovered or disturbed during Project construction and operation. The HCRPP is based on learnings from previous projects, knowledge of the existing heritage resource conditions within the Gordon and MacLellan sites, and recommendations from the Historic Resources Branch (HRB) of Manitoba Sport, Culture and Heritage. The HCRPP will also incorporate TLRU information and outline engagement protocols with the Indigenous Nations if heritage or cultural resources are found during construction or operation. See additional information also provided within the response to IAAC-184. c. As stated in part a of the question, cultural and spiritual sites were identified through Project-specific TLRU studies from Marcel Colomb First Nation and the Manitoba Metis Federation as well as engagement with other Indigenous Nations identified as potentially affected by IAAC. No cultural or spiritual sites have been identified in the Project Development Area (PDA) or Local Assessment Area (LAA), therefore no direct or indirect effects on cultural and spiritual sites are anticipated. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No new information regarding Indigenous cultural and spiritual sites has been received by Alamos since the EIS was filed and therefore no update to the conclusions of the EIS is required. d. No cultural or spiritual sites have been identified in the PDA or LAA, therefore no direct or indirect effects on cultural and spiritual sites are anticipated. The PDA is within the disturbed context of existing mine sites. The PDA for the Gordon site represents approximately 269 ha of provincial Crown land, while the PDA for the MacLellan site contains approximately 938 ha of municipally administered land (respectively 0.02% and 0.07% of the total Crown land area within LAA). Alamos is committed to ongoing engagement with Indigenous Nations regarding the Project . Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No new information regarding Indigenous cultural and spiritual sites has been received by Alamos to date and therefore no update to the conclusions of the EIS is required.
Attachment:	No

RESPONSE TO IAAC-187

ID:	**IAAC-187**
Expert Department or Group:	CCN-80 CCN-81 CCN-83 CCN-87 CCN-91 CCN-101 IAAC MCCN-51 MCCN-58 MCCN-61 MCCN-70 SDFN-88 SDFN-89 SDFN-91 SDFN-97 SDFN-114
Guideline Reference	3.2.3 Spatial and temporal boundaries 5.0 Engagement With Indigenous Groups and Concerns Raised 6.1.11 Human environment
EIS Reference	4.3.4.4 Assessment of Cumulative Environmental Effects 13.1.4.1 Spatial Boundaries 17.1.5 Boundaries 17.2.13 Indigenous Nations
Information Request:	a. Identify how information from each Indigenous Group was considered in the selection of all spatial and temporal boundaries for current use of lands and resources for traditional purposes. b. Identify and describe any disparity between the views of Indigenous Groups and the proponent on the selection of spatial and temporal boundaries for current use of lands and resources for traditional purposes, efforts made to reconcile the disparities, and rationale for conclusions on matter for which disparity in views remains.
Response:	a. The initial selection of spatial and temporal boundaries for each Valued Component (VC) reflects available Indigenous and community knowledge gained from a combination of sources, which include literature review, field programs and Alamos' Indigenous engagement efforts. As stated in Volume 1, Chapter 4, Section 4.3.2 of the Environmental Impact Statement (EIS), spatial boundaries for the assessment were selected based on the geographic extent over which Project activities and their effects on VCs are likely to occur, as well as other ecological, technical, and social considerations. Temporal boundaries for the assessment address the potential effects during the Project's construction, operation, and decommissioning/closure phases over relevant timescales. Additionally, temporal boundaries for traditional land and resource use (TLRU) recognize that current use must be understood in the context of past and future use and therefore include present time to within the last 25 years, which considers cultural values, cultural transmission, and intergenerational knowledge transfer. The proposed VCs were shared with the Indigenous Nations identified by the Impact Assessment Agency of Canada (IAAC; formerly the Canadian Environmental Assessment Agency) as potentially affected, through engagement and correspondence regarding the Project and the environmental assessment. Alamos accepted all TLRU information shared and applied spatial data within the corresponding spatial boundaries for each VC baseline condition and effects assessment. The information shared, regardless of temporal boundaries, was considered as relevant baseline data including living memory extending back to the 1940s and oral traditional from deeper time. b. Information has been obtained from Indigenous Nations through Project-specific TLRU studies and the Indigenous engagement program for the Project has largely served to confirm the selection of spatial and temporal boundaries. TLRU studies

ID:	IAAC-187
	completed by Indigenous Nations may identify spatial boundaries in relation to their traditional lands or traditional territories. Project-specific TLRU information has been shared by Marcel Colomb First Nation who applied the spatial boundaries used for the environmental assessment in their study, the Manitoba Metis Federation (MMF), and Mathias Colomb Cree Nation (MCCN), both of whom chose boundaries that differ from the environmental assessment. The MMF and MCCN spatial boundaries are larger. The EIS applied spatial data from the MMF and MCCN TLRU studies within the corresponding spatial boundaries for each VC baseline condition and effects assessment and included data from the temporal boundaries within their TLRU study as baseline conditions. Since boundaries identified by various Indigenous Nations often vary considerably, it is necessary to define consistent spatial boundaries in the EIS based upon the predicted geographic extent of potential effects in order to establish consistent assessment boundaries and permit comparable residual effects characterizations. While physical effects of the Project are not expected to extend beyond the regional assessment area (RAA), information regarding traditional use sites, activities, and resources, including preferred harvesting sites, beyond the RAA are considered where that information has been provided by Indigenous Nations. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other changes to the EIS methods or conclusions of the EIS are proposed based on the additional information received. Responses to comments CCN-80, CCN-81, CCN-83, CCN-87, CCN-91, and CCN-101 from Chemawawin Cree Nation; MCCN-51, MCCN-58, MCCN-61, and MCCN-70 from Mathias Colomb Cree Nation; and SDFN-88, SDFN-89, SDFN-91, SDFN-97, and SDFN-114 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-187) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-188

ID:	**IAAC-188**
Expert Department or Group:	CCN-08 CCN-91 CCN-97 IAAC MCCN-69 SDFN-08 SDFN-104 SDFN-109 SDFN-110
Guideline Reference	2.3 Engagement with Indigenous groups 4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised
EIS Reference	2.8 Emissions Discharges and Wastes 15.4.3.2 Mitigation 17.1.3.4 Anticipated Project Effects Identified by Indigenous Nations 17.1.4 Potential Effects, Pathways and Measurable Parameters
Information Request:	a. Identify and assess the pathways of effects between Project environmental effects and intangible values. Identify how information from each Indigenous Group was solicited in the selection of intangible values and in assessing potential Project effects. i. Update the effects assessment with this information and identify any mitigation measures as required.
Response:	a. Through engagement, and Project-specific traditional land and resource use (TLRU) studies, participating Indigenous Nations shared cultural and experiential values that go beyond the traditional harvesting, occupancy, and travel. These were shared in open houses, one-to-one interviews, and in meetings with First Nations leaders. As stated in Volume 2, Chapter 17, Section 17.1.4 of the Environmental Impact Statement (EIS), intangible values typically relate to beliefs, perceptions, values, and qualitative experience. Given the subjective and conditional nature of intangible values, these potential effects are considered only when an Indigenous Nation has identified a related concern. Potential effects on experiential values often include changes to cultural transmission, language retention, governance systems, patterns of cultural behaviour, and the sensorial experience of traditional practices. Intangible effects can only be meaningfully evaluated by individuals and communities experiencing these values in their cultural context; however, 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. Both tangible and identified intangible values contributed to the conclusion for the current use assessment. The context for expressing the effects on intangible values generally takes the form of concerns and issues regarding the Project's potential to adversely affect these values. For example, Marcel Colomb First Nation reported how the experience of the land has changed in the area since mine, road, and railroad development has created year-round access to traditional areas (Volume 2, Chapter 17, Section 17.4.5 of the EIS). Alamos is committed to ongoing engagement with Indigenous Nations regarding follow-up and monitoring and will work with participating Nations who wish to recommend mitigations regarding adverse effects on the intangible aspects of traditional practices. The methodology applied for the assessment of current use for traditional purposes, including the assessment of impacts to rights, conforms to the *Canadian*

ID:	IAAC-188
	Environmental Assessment Act, 2012 (CEAA 2012) and the 2017 Guidelines for the Preparation of an Environmental Impact Statement for the Project, as well as Canadian Environmental Assessment Agency guidance for assessing effects on current use (CEAA 2015; CEAA 2015a). The methods applied reflect standard environmental assessment methods appropriate for the scope and nature of the Project. Effects on current use are assessed in Volume 2, Chapter 17 and effects on the exercise of rights are assessed in Volume 2, Chapter 19 of the EIS. i. Alamos reported on the results of ongoing Indigenous engagement since the EIS was filed in a supplemental filing to Volume 2, Chapter 17 in March 2021. No additional information regarding intangible values has been received by Alamos. Responses to comments CCN-08, CCN-91, and CCN-97 from Chemawawin Cree Nation; MCCN-69 from Mathias Colomb Cree Nation; and SDFN-08, SDFN-104, SDFN-109, and SDFN-110 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-188) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project. **References:** CEAA 2015. Considering Aboriginal traditional knowledge in environmental assessments conducted under CEAA -- Interim Principles. https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/considering-aboriginal-traditional-knowledge-environmental-assessments-conducted-under-canadian-environmental-assessment-act-2012.html. CEAA. 2015a. Draft Technical Guidelines for assessing the Current Use of Lands and Resources for Traditional Purposes under CEAA 2012. https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/technical-guidance-assessing-current-use-lands-resources-traditional-purposes-under-ceaa-2012.html.
Attachment:	No

RESPONSE TO IAAC-189

ID:	**IAAC-189**
Expert Department or Group:	CCN-16 CCN-23 CCN-25 CCN-26 CCN-78 CCN-83 CCN-87 CCN-88 CCN-89 CCN-90 IAAC MMF-05 SDFN-17 SDFN-25 SDFN-29 SDFN-86 SDFN-91 SDFN-101 SDFN-102 SDFN-103
Guideline Reference	3.1 Project components 3.2 Project activities 3.2.2 Valued components to be examined 3.2.3 Spatial and temporal boundaries 6.1.4.1 Riparian, Wetland and Terrestrial Environments 6.1.9 Indigenous peoples 6.3.4 Indigenous peoples
EIS Reference	2.3.2.3 Utilities and Infrastructure 3.3.5.12 Sayisi Dene First Nation Appendix 3A Community Engagement Plan Table 1 12.1.4.1 Spatial Boundaries 12.4.2.3 Mitigation for Change in Habitat 12.10 Summary of Commitments 15.4.3.2 Mitigation 17.1.5.1 Spatial Boundaries
Information Request:	a. Calculate the area of unoccupied Crown Land that will be made unavailable for the practice of Aboriginal and Treaty rights due to the Project and all associated activities, including areas where firearms use is prohibited. b. Identify any mitigation (e.g., signage, firearms discharge restrictions) for other VCs that may contribute to reduced access to resources for Indigenous Groups exercising their Section 35 Rights under the *Constitution Act*, 1982. Consider response to (Round 1 Package 1, IAAC-07) in this response. c. Provide a preliminary plan for access to lands beyond disturbed areas for travel routes that will be intersected by the PDA and related infrastructure.
Response:	a. The total amount of unoccupied Crown land taken up by the Project Development Area (PDA) — which is the anticipated areas of direct physical disturbance associated with construction and operation of the Project (i.e., the Project footprint) at the Gordon and MacLellan sites and encompasses the immediate areas in which Project activities and components may occur plus a 30 m buffer — is approximately 269 ha (Gordon site) and 888 ha (MacLellan site), respectively. The use of firearms will be prohibited within the PDA (i.e., 269 ha at the Gordon site and 888 ha at the MacLellan site), and access to this area will be restricted and therefore unavailable for the practice of Aboriginal and Treaty rights during construction and operation, and while active decommissioning activities are undertaken. Access to the PDA including areas of unoccupied crown land within the PDA will be unrestricted following decommissioning/closure. The Project was designed to limit the amount of unoccupied Crown land taken up within the Indigenous Rights local assessment area (LAA) (i.e., 0.06% for the Gordon site, 0.2% for the MacLellan site). The Project will largely be on land previously disturbed by historical mining activities. Signs may also be posted prohibiting hunting, the discharge of a firearm or bow or the possession of a loaded firearm on

ID:	IAAC-189
	or within 300 metres of the mine for safety purposes under The General Hunting Regulation of *The Wildlife Act*. As the need for this signage has not yet been determined, and is outside the control of Alamos, it has not been included in the area of unoccupied Crown land where the use of firearms will be prohibited with in the PDA (i.e., 269 ha at the Gordon site and 888 ha at the MacLellan site), provided above. b. Mitigation measures that may contribute to reduced access to resources for Indigenous Nations include: the continuation of controlled access to the Project Development Area (PDA) during the mine life using a security gate and guard house, and by employing on-site security staff; posting warning signs on the access roads and distribution line right-of-way (ROW) to discourage unauthorized access and snowmobiling due to safety concerns; and implementing traffic control measures, which may include gating approaches to Project access roads. c. Volume 2, Chapter 17, Sections 17.2.14.1 through 17.2.14.14 of the Environmental Impact Statement (EIS) provide baseline details of trails and travelways in the regional assessment area (RAA, Figure 17-1). These data are from Project-specific traditional land and resource use (TLRU) studies from Marcel Colomb First Nation and the Manitoba Metis Federation as well as engagement with other Indigenous Nations identified as potentially affected by the Impact Assessment Agency of Canada (IAAC). No access trails or travelways intersected by the PDA have been identified, therefore no effects on access to lands and resources used for traditional purposes are anticipated. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No new information regarding Indigenous cultural and spiritual sites were received and no changes to the conclusions of the EIS are proposed based on the additional information received. Access to the site access roads from Provincial Road 391 (PR 391) will continue to be restricted during construction, operation, and decommissioning/closure of the Gordon and MacLellan sites. Both access roads are currently gated as both are existing historical mine sites so no new access modifications are planned for the access roads, simply a continuation of the current restrictions. Map 1-1 (Volume 1, Chapter 1 of the EIS) shows the location of gates on the existing access roads for the Gordon and MacLellan sites. The spatial extent of access restrictions include the access roads beyond the gates and the site PDAs. Maps 2-1 and 2-2 (Volume 1, Chapter 2 of the EIS) show the spatial extent of the Gordon and MacLellan site PDAs, to which access will be restricted until post-closure. No fencing is planned for the perimeter of the Gordon or MacLellan sites. Volume 1, Chapter 2, Sections 2.3.1.2 and 2.3.2.3 of the EIS describe the existing access infrastructure and planned upgrades. Exclusive rights for usage refers to Alamos' right to restrict traffic to mine-related vehicles on the access roads from PR 391 to the Gordon and MacLellan sites. Care and control refers to Alamos' responsibility to maintain the mine access roads from PR 391 and to control access to unauthorized traffic by maintaining gates and on-site security at the Gordon and MacLellan sites. Indigenous and public use of these roads will continue to be restricted during construction, operation, and decommissioning/closure. During that time, Indigenous peoples and the public may have to use alternative means other than the site access roads to enter areas beyond the gates, just as they currently do with the existing gates. After mine closure, access will no longer be restricted.
Attachment:	No

RESPONSE TO IAAC-190

ID:	**IAAC-190**
Expert Department or Group:	IAAC
Guideline Reference	6.1.9 Indigenous peoples
EIS Reference	19.2.2.2 Indigenous Socio- Economic Conditions
Information Request:	a. Identify which traplines are in active use. b. Identify and describe potential tangible and intangible Project effects on trapping. Identify mitigation or accommodation measures for these effects. Describe engagement with the registered trapline holders and Indigenous trappers to identify the Project effects. c. Where applicable, update the effects assessment related to trapping, for current use of land and resources for traditional purposes and the assessment of potential impacts on the rights of Indigenous people, based on the information provided in parts a and b.
Response:	a. The Indigenous Socio-Economic Conditions local assessment area overlaps 19 traplines within the Registered Trapline Districts, of Pukatawagan and Southern Indian Lake all of which have had commercial trapper permits; however, it is unknown if they are currently in active use. Engaged Indigenous Nations did not provide a specific list or locations of traplines; however, it was indicated in Volume 2, Chapter 17 of the Environmental Impact Statement (EIS) that Indigenous peoples in the regional assessment area (RAA) do participate in commercial and traditional fur trapping and trading. Through Marcel Colomb First Nation's Project-specific Traditional Land and Resource Use (TLRU) study (Appendix 17A), Alamos learned that Marcel Colomb First Nation Elders teach younger generations about cultural practices, including at Mile 7 camp in the RAA, which is located along a reported trapline. Mathias Colomb Cree Nation reports trapping in the RAA at Chepil, Hughes and McVeigh Lakes. No reference is made to registered traplines (Firelight 2021) b. Tangible and intangible Project effects on trapping are described in the assessment of current use of lands and resources for traditional purposes (current use) in Volume 2, Chapter 17 of the EIS and in the assessment of effects to Indigenous peoples in Volume 2, Chapter 19 of the EIS. Volume 2, Chapter 12 of the EIS also describes effects on wildlife and wildlife habitat, which can directly and indirectly affect trapping success and include direct and indirect change to wildlife habitat (Section 12.4.2), wildlife health (Section 12.4.4), and mortality risk (Section 12.4.3). Volume 2, Chapter 17 Sections 17.4.2 and 17.4.3 of the EIS describe the interaction of effects on wildlife and wildlife habitat with current use activities (such as trapping) and assesses of changes to availability and access to resources such as wildlife for trapping purposes. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5 of the EIS assessed these changes in the context of effects on the experience of Indigenous peoples, which adversely alter the perceived values of current use resources, sites or areas and may result in avoidance of these. The indirect effects on habitat (i.e., habitat alteration) including alteration to habitat perception is expected to vary depending on the Project component, pathway, and measurable parameter; however, effects are predicted

ID:	IAAC-190
	to be within 1 km of the Project development area (PDA). Volume 2, Chapter 19 of the EIS also assesses effects on trapping in the assessment of Indigenous socio-economic conditions, which concluded that Project clearing and construction activities will affect Pukatawagan Registered Traplines 30, 32, 36, and Youth Training Camp (YTC), and lead to a loss of area available for trapping; however, the Project will not result in wide degradation, restriction or disruption of present traditional land and resource use activities. With mitigation measures, land and resource use activities and production are predicted to continue at or near baseline levels. The conclusions of this assessment supported the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. Mitigations to reduce potential changes to the abundance and distribution of culturally important species for trapping and potential changes to trapping access include those recommended by participating Indigenous Nations and those described in Volume 2, Chapter 12, Chapter 17, and Chapter 19 of the EIS (such as engaging trappers to address issues related to removal or inaccessibility of lands within the PDA, the use of down-lighting, and implementing vegetation buffers around high activity areas to reduce sensory disturbances). The wildlife and wildlife habitat VC (Volume 2, Chapter 12 of the EIS) applies knowledge gained through Indigenous engagement specific to wildlife and wildlife habitat including traditional ecological knowledge regarding the past and present abundance and distribution of wildlife, such as trapped furbearers in the Project region as well as observations regarding general environmental trends over time. Focal species included in this assessment include those identified by Indigenous Nations (Volume 2, Chapter 12; Table 12-1). Concerns raised by Indigenous Nations relating to potential Project-related environmental effects include the loss or alteration (e.g., fragmentation) of wildlife habitats and how this will affect wildlife populations, particularly as it relates to traditionally harvested species; the increased mortality of wildlife, resulting primarily from vehicle collisions; and the quality of terrestrial and aquatic environments resulting from potential degradation and contamination of resources. These concerns influenced baseline data collection efforts and the determination of Project effects on wildlife, wildlife habitat, availability and access to current use resources including species of cultural and subsistence importance such as furbearers. Alamos engages in quarterly meetings with potentially affected harvesters on a knowledge holders and harvesters committee. Alamos provides updates on Project activities and the committee provides feedback and recommended mitigations. Committee members include trapline holders. Mathias Colomb Cree Nation describe effects of historic mining activities and other developments such as the expansion of Lynn Lake on furbearers and the ability to access traplines and trap in their vicinity. Chepil Lake in the RAA is described by Mathias Colomb Cree Nation as an important area for cultural transmission regarding hunting and trapping. Mathias Colomb Cree Nation reports that trappers will avoid mine sites due to noise and safety concerns (Firelight 202). c. Effects on trapping, including tangible and intangible effects on wildlife and the perceived value of harvested resources have been considered in the EIS in Chapters 17 and 19 and have concluded that traditional land and resource use activities will continue at or near baseline levels. Alamos has continued engagement with Indigenous Nations since the EIS was filed, but has not received any additional information about effects on trapping or related impacts on the exercise of Indigenous or Treaty rights. A supplemental filing document has been

ID:	IAAC-190
	provided to IAAC providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the supplemental filing. No new information regarding effects on trapping has been received by Alamos since the EIS was submitted and therefore, no updates to the assessment of effects related to trapping, current use of land and resources for traditional purposes, or Indigenous and Treaty rights are necessary.
Attachment:	No

RESPONSE TO IAAC-191

ID:	**IAAC-191**
Expert Department or Group:	CCN-44 CCN-45 CCN-46 CCN-47 CCN-48 CCN-49 CCN-50 CCN-51 MCCN-22 MCCN-35 SDFN-52 SDFN-53 SDFN-54 SDFN-55 SDFN-56 SDFN-57 SDFN-58 SDFN-59 TC-03
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.1.11 Human environment 6.3.4 Indigenous peoples
EIS Reference	2.3.1.4 Water Development and Control 9.0 Assessment of Potential Effects on Surface Water 9.1.6 Significance Definition 9.4.1.4 Project Residual Effects
Information Request:	a. Identify and assess the pathways of effects between effects to surface water quality and quantity and potential impacts (tangible and intangible) to Indigenous Groups on current use of lands for traditional purposes and potential impacts the rights of Indigenous people. b. Describe dewatering of any natural waterways and identify potential effects to the current use of lands for traditional purposes and potential impacts to the rights of Indigenous people. Consider the response provided in Round 1 Package 1, IAAC-17. c. Identify if there was any navigability on the existing diversion channel and the initial creek. Describe if the diversion channel will be navigable after re-alignment. d. Describe measures to mitigate any effects identified in parts a and b. e. Describe monitoring and follow-up that will be implemented to validate the predictions of the assessment, confirm the effectiveness of mitigation measures, and respond to any unanticipated effects identified during monitoring. f. Describe how information from Indigenous Groups on use and rights related to surface water quantity and quality were considered in the effects assessment for current use of lands and resources for traditional purposes. If this information was not considered, update the effects assessment to include information on Indigenous Groups' use and rights related to surface water quantity and quality.
Response:	a. Volume 2, Chapter 17, Section 17. 3, Table 17-3 of the Environmental Impact Statement (EIS) describes the potential interactions between the Project and current use. Volume 2, Chapter 17, Section 17.4.2 of the EIS elaborates on the direct and indirect effects on water quantity by dewatering and on surface water quality especially in the context of fish health, fish and fish habitat and the access to and availability of current use resources. Volume 2, Chapter 17, Sections 17.4.2, and 17.4.4 of the EIS assess these changes and their potential effects on availability of resources and access to lands (waters) as well as the experience of current use by Indigenous peoples that may adversely alter the perceived values of current use resources, sites or areas that could result in avoidance. The indirect effects on habitat (i.e., habitat alteration) including alteration of habitat perception is expected to vary depending on the Project component, pathway, and measurable parameter. The conclusions of the assessment of effects on current use as described in Volume 2, Chapter 17 of the EIS support the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3 of the EIS. An overview of the effects that were incorporated into the assessment of

ID:	IAAC-191
	Indigenous and Treaty rights from other VC chapters (i.e., water quality assessment) are presented in Volume 2, Chapter 19, Table 19-1 and described in Section 19.1.2.2 of the EIS. b. No natural waterways will be dewatered at the Gordon site. Only the constructed diversion channel between Gordon Lake and Farley Lake will be dewatered. Prior to dewatering, a new diversion channel will be constructed immediately adjacent to the existing diversion channel so that there is uninterrupted flow between the two lakes. Two road crossings with culverts are located in the existing diversion channel. Both culverts are submerged by the backwatering effect of beaver dams. Together, these culverts and beaver dams make the existing diversion channel unnavigable. The new diversion channel will include one road crossing to allow long-term monitoring sites to be accessed on the north side of the Project. This road crossing will include a properly sized culvert that will also preclude future navigation in the channel. At the conclusion of mining, beavers are expected to build dams in the new diversion channel which will further impede navigation. The new diversion channel will include habitat enhancement features (e.g., low flow channel, overwintering pools, aquatic vegetation beds) designed to increase use of the channel by fish, particularly northern pike. The current diversion channel is a V-shaped, rip-rap lined channel with none of these enhancement features and is used only by brook stickleback. Because no change in navigation in the diversion channel will occur and because suitability of the new diversion channel will be higher than the existing diversion channel, no effects to the current use of lands for traditional purposes or potential impact to the rights of Indigenous people are anticipated at the Gordon site. Only one natural waterway will be passively dewatered with the lowering of the water table at the MacLellan site: an unnamed Keewatin River tributary (KEE3-B1) that drains East Pond. This tributary will be passively dewatered during mine operation as the open pit is developed and the hydraulic gradient between East Pond and the open pit increases. Once the water level in East Pond decreases below the invert elevation at its outlet, flow from East Pond into tributary KEE3-B1 will cease and the channel will gradually, passively dewater. Only ~600 m of the tributary KEE3-B1 immediately downstream of East Pond will be passively dewatered. This is because the lower reaches of tributary KEE3-B1 will continue to receive run-off from unaffected headwater tributaries; there are two other headwater tributaries that drain into the lower reach of tributary KEE3-B1 that won't be affected by the Project. During the decommissioning/closure phase, the open pits at the Gordon site and the MacLellan site will be allowed to fill with water to form pit lakes. Overflows will be directed to established drainages. At the end of mining, the open pit at the MacLellan site is expected to refill with water in approximately 21 years (under average climate conditions), at which time flows in tributary KEE3-B1 will be re-established. Tributary KEE3-B1 downstream of East Pond is a small (1 m to 6 m wide, <30 cm deep), low gradient, silt-bottomed channel with abundant aquatic vegetation, thick overhanging riparian vegetation, and frequent beaver dams. This channel is unnavigable and is used exclusively by brook stickleback. No current use activities have been identified on this tributary creek through engagement or through Project

ID:	IAAC-191
	specific traditional land and resource use (TLRU) studies (Volume 2, Chapter 17, Appendix 17A). As the passive dewatering is not permanent it is anticipated that any current use activities could occur on the tributary post-closure. c. There was no navigability on the existing diversion channel between Gordon Lake and Farley Lake for the reasons explained above. The new diversion channel will not be navigable after re-alignment for the reasons explained above. The original stream between Gordon and Farley lakes had an approximately 3 m wide channel flowing through flooded peat swamp (see attached Photo IAAC-191-1, Appendix A). This stream was navigable, as defined by the Canadian Navigable Waters Act (2019) , prior to construction of the Gordon Mine in the 1990s. d. The following mitigation measures will be implemented during construction and operation of the new diversion channel between Gordon and Farley lakes to eliminate or reduce potential effects to fish and navigation, and therefore to current use of lands for traditional purposes or impacts to the rights of Indigenous people: • The new diversion channel will be built "in the dry" prior to isolation and dewatering of the existing diversion channel and the upstream and downstream ends of the new diversion channel will be connected to Gordon and Farley lakes at the same time that the upstream and downstream ends of the existing diversion channel are blocked. This way there is no disruption of flow between the two lakes. • A fish salvage will be conducted in the existing diversion channel after it is isolated to reduce fish mortalities. Captured fish will be moved alive to Gordon or Farley lakes, depending on species and numbers. • The new diversion channel will include habitat enhancement features design to improve fish use. These enhancement features will include: a low flow channel in the middle to allow fish movements during the summer; deep pools to provide winter refugia for fish; placement of rock clusters to provide cover for fish; construction of planting beds in the channel to promote colonization by aquatic vegetation; and planting of native riparian vegetation species along the banks to provide shade, bank stability, and organic inputs. • A beaver management plan will be implemented in the new diversion channel during mine construction, operations, and closure phases to restrict dam construction and permit the uninterrupted conveyance of water between the two lakes. The following mitigation measures will be implemented during construction, operations, and closure at the MacLellan site to limit potential effects to fish and navigation due to passive dewatering of tributary KEE3-B1: • A fish salvage will be conducted in tributary KEE3-B1 (and in East Pond) during construction to capture and move as many fish as possible. Fish will be relocated alive in the Keewatin River or a nearby pond or lake depending on species and numbers. • At the conclusion of mining, all contact water will be diverted to the open pit to decrease the period required to fill the pit with water. • At the conclusion of mining, a concrete spillway will be constructed at the eastern rim of the open pit connecting it to the tributary KEE3-B1. The spillway will be designed to convey the maximum 24 hour flood discharge and will be

ID:	IAAC-191
	located such that a hydraulic gradient is established so that all water in the pit drains to tributary KEE3-B1 for perpetuity. e. Alamos will develop and implement two monitoring plans to determine the accuracy of the assessment of potential effects to surface water and to fish and fish habitat: a surface water monitoring and management plan (SWMMP) and an aquatic effects monitoring and management plan (AEMP). The purpose of these plans will be to monitor potential changes in lake levels and stream flows, the effectiveness of mitigation measures implemented to eliminate or reduce potential changes in lake levels and stream flows, and resulting effects on fish that live in these lakes and stream that may be caused by construction, operation, and closure/decommissioning of the Project. The monitoring plans will include adaptive management components whereby thresholds will be established that will trigger a staged response plan to accommodate different levels of concern and corresponding degrees of remedial action. While the final details of these plans will be worked out in consultation with provincial and federal regulators and local Indigenous Nations during the permitting phase of the Project, Alamos has provided preliminary details of the SWMMP and AEMP in the responses to IAAC-25 and IAAC-55, respectively. Volume 2, Chapter 17, Section 17.4.2.2 of the EIS describes the influence of Indigenous engagement on mitigation measures. Through engagement, Marcel Colomb First Nation recommends water quality monitoring, monitoring of vegetation clearing by an Elder and Peter Ballantyne Cree Nation suggests third-party monitoring and testing of water quality in the Hughes River. Through their Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study for the Lynn Lake Gold Mine Project, the Manitoba Metis Federation recommends the development of a closure plan to reduce potential social, economic, and environmental effects from the mine closure upon decommissioning/closure. Volume 1, Chapter 3, Section 3.3 of the EIS provides an overview of Alamos' efforts to engage with Indigenous Nations in support of the EIS up to May 22, 2020. The Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through: • In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by IAAC. Volume 1, Chapter 9, Section 9.1.2.1 of the EIS and Volume 2, Chapter 17, Section 17.1.3 of the EIS describe the influence of the results of those 2020 Indigenous engagement activities on the assessment of potential effects on surface water and the assessment of potential effects on the current use of lands and resources for traditional purposes by Indigenous peoples, respectively. As summarized in Volume 1, Chapter 3, Section 3.3.6; Volume 1, Chapter 9, Section 9.1.2.1; and Volume 2, Chapter 17, Section 17.1.3.4 of the EIS, Project effects on

ID:	IAAC-191
	surface water quality were identified as a key concern by several Indigenous Nations. Through the Indigenous engagement program for the Project, Barren Lands First Nation, Marcel Colomb First Nation, Nisichawayasihk Cree Nation, Manitoba Metis Federation, O-Pipon-Na-Piwin Cree Nation, Peter Ballantyne Cree Nation, Mathias Colomb Cree Nation identified effects to water quality as a concern. These concerns included: • Effects to surface water from tailings, and mine rock management. • Potential for acid rock drainage and issues for water management. • Concerns about water quality and effects to resources. • Seepage causing degradation of water quality, quantity and affecting wetlands, rivers, lakes, and wildlife. • Long-term effects from the Project on freshwater supply, including volume quality and cost of remediation in the event an environmental disaster • Poor water quality due to mining affecting fisheries. • Potential effects of increased traffic, potential release of hazardous materials as a result of transportation of dangerous goods. • Concern over the potential contamination of Reindeer Lake. • Cumulative effects in Cockeram Lake due to historical tailings seepage and potential MacLellan effects. • Need for water quality monitoring. f. Volume 1, Chapter 3, Table 3-8 of the EIS indicates how comments and concerns received from Indigenous Nations (including comments and concerns regarding surface water quantity/quality) were considered in the EIS and the mitigation measures proposed therein. Indigenous input from subsequent engagement activities completed between May 22, 2020, and December 31, 2020, was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No new information regarding Indigenous use or rights related to surface water quantity/quantity was received and no changes to the conclusions of the EIS are necessary.

ID:	IAAC-191
	Responses to comments CCN-44, CCN-45, CCN-46, CCN-47, CCN-48, CCN-49, CCN-50, and CCN-51 from Chemawawin Cree Nation; MCCN-22 and MCCN-35 from Mathias Colomb Cree Nation; and SDFN-52, SDFN-53, SDFN-54, SDFN-55, SDFN-56, SDFN-57, SDFN-58, and SDFN-59 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-191) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	Appendix A, Photo IAAC-191-1

RESPONSE TO IAAC-192

ID:	**IAAC-192**
Expert Department or Group:	CCN-54 CCN-56 CCN-57 CCN-58 CCN-59 CCN-62 MCCN-45 SDFN-62 SDFN-64 SDFN-65 SDFN-66 SDFN-67
Guideline Reference	3.2.3 Spatial and temporal boundaries 6.3.4 Indigenous peoples
EIS Reference	10.0 Assessment of Potential Effects on Fish and Fish Habitat 10.1.2.4 Influence of Local or Regional Management Objectives 10.1.4.1 Spatial Boundaries Table 10-1
Information Request:	a. Identify and assess the pathways of effects between effects to fish and fish habitat and potential effects (tangible and intangible) to Indigenous Groups on traditional practices and potential impacts to Section 35 Rights of the *Constitution Act*, 1982. b. Describe the baseline information used to determine an adequate supply of fish for Indigenous peoples for subsistence purposes. c. Clarify which rivers and lakes are known for fishing in the LAA and identify how they were considered in the effects assessment. Describe criteria used to determine which rivers and lakes were included in the LAA. Provide a rationale for the exclusion of rivers and lakes used for fishing within the watershed (e.g., Sickle Lake) in the LAA. d. Describe the impacts of increased fishing pressure throughout the LAAs and RAA, as a result of increased population in the Lynn Lake area, on the rights of Indigenous people. e. Assess the loss of fish species within the LAA and RAA that support the exercise of the rights of Indigenous people. f. Identify Project effects and mitigation measures that could affect the exercise of Indigenous fishing rights in the RAA. g. Describe how information from Indigenous Groups on use and impact to rights related to fish and fish habitat was considered in the effects assessment for current use of lands and resources for traditional purposes. If this information was not considered, update the effects assessment to include information on Indigenous Groups' use and rights related to fish and fish habitat.
Response:	a. Volume 2, Chapter 17, Section 17.4.2 of the Environmental Impact Statement (EIS) elaborates on the interaction of effects on fish and fish habitat and current use; the direct and indirect change to fish habitat, including changes to water quality affecting fish health. Change to availability of fish is assessed relative to the changes identified in Volume 2, Chapter 10. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5, assess these changes in the context of effects on the experience of Indigenous peoples which adversely alter the perceived values of current use resources, sites or areas that may result in avoidance. The indirect effects on habitat (i.e., habitat alteration) including alteration of habitat perception is expected to vary depending on the Project component, pathway, and measurable parameter. The conclusions of the assessment of effects on current use as described in Volume 2, Chapter 17 support the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. An overview of the effects that were incorporated into the assessment of Indigenous and Treaty rights from other VC chapters, such as the fish and fish habitat assessment,

ID:	IAAC-192
	among other VCs i.e., water quality assessment) are presented in Volume 2, Chapter 19, Table 19-1 and described in Section 19.1.2.2 of the EIS. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. b. No baseline information was used to determine what would be an adequate supply of fish for Indigenous peoples for subsistence purposes. This was not done because it was not required by the Final Guidelines for the Preparation of an Environmental Impact Statement for the Lynn Lake Gold Project and Alamos cannot make judgements about what individual Indigenous Nations may consider to be an "adequate supply of fish". c. Within the Gordon site Local Assessment Area (LAA), Simpson Lake and Swede Lake are in the Commercial Harvest Schedule with one quota of 2,300 kg for walleye or whitefish. However, neither lake has been commercially fished since at latest 2010. Within the MacLellan site LAA, Cockeram Lake is the only lake with a commercial fishing quota (<1,000 kg) and was last fished commercially in 1997. All lakes with large-bodied fish species (i.e., northern pike, walleye, yellow perch, lake whitefish, burbot) in the Gordon and MacLellan site LAAs have the potential to support recreational and Indigenous fisheries. Within the Gordon site LAA, these lakes are: Farley Lake, Swede Lake, Simpson Lake, Susan Lake, and Ellystan Lake. Within the MacLellan site LAA, Minton Lake, Cockeram Lake, and the Keewatin River support populations of large-boded fish species harvested by recreational and Indigenous fisheries. Members of Marcel Colomb First Nation and citizens of the Manitoba Metis Federation are known to fish for northern pike, lake sturgeon, walleye, yellow perch, and whitefish variously in Chepil, Cockeram, Hughes, Simpson, Swede, and Ellystan lakes within the Gordon and MacLellan site LAAs (Volume 2, Chapter 17 of the EIS). Mathias Colomb Cree Nation indicated fishing in Chepil and Hughes lakes within the LAA (Firelight 2021). Each of the lakes identified above were included in the LAAs for the Assessment of Potential Effects to Fish and Fish Habitat (Volume 2, Chapter 10 of the EIS) at the Gordon and MacLellan sites. As such, the potential effects of physical alteration or destruction of fish habitat, changes in water quality, and changes in water quantity (i.e., stream flows and lake levels) caused by the Project on fish in each of these lakes was assessed. These potential effects were assessed for their potential impact on four focal species known to reside in lakes within the Gordon and MacLellan site LAAs that were selected because of their importance to commercial, recreational, or Indigenous fisheries and because of their unique life

ID:	IAAC-192
	histories and habitat requirements: northern pike, lake whitefish, walleye, and forage fish (a guild of small fish that support large-bodied fish populations). As described in Volume 2, Chapter 10, Section 10.1.4 of the EIS, the Gordon and MacLellan site LAAs included the lakes within the Project Development Areas (PDAs) as well as the lakes downstream of the Gordon and MacLellan sites where measurable effects to fish habitat, surface water quality, and/or surface water quantity could occur. At the Gordon site, the LAA extended downstream to include Farley Lake, Swede Lake, and Ellystan Lake. However, it did not include the Hughes River. This was because potential effects to fish habitat, water quality and water quantity were expected to be too small to be measurable beyond Ellystan Lake and because the large volume of water in the Hughes River relative to the volume of water flowing into the Hughes River from the Gordon site LAA would make any potential residual effect negligible. At the MacLellan site, the LAA extended downstream to the outlet of Cockeram Lake. Cockeram Lake was selected as the downstream-most lake within the MacLellan site LAA because it receives inflow from both rivers draining the MacLellan PDA (i.e., the Keewatin River and the Cockeram River) and because it was determined to be large enough in area and volume that potential changes to water quality and water quantity would be unlikely to extended beyond the Cockeram Lake outlet. Lakes and rivers downstream of the Gordon site LAA (e.g., Hughes River, Eden Lake) and the MacLellan site LAA (e.g., Sickle Lake) known to be used by Indigenous Nations for fishing were excluded from the assessment of potential Project-specific effects for the reasons explained above. However, potential residual Project-specific effects to fish and fish habitat were carried forward to the assessment of potential cumulative effects to fish and fish habitat in the RAA. This RAA included the Keewatin River and Hughes River watersheds downstream to Granville Lake (the lake where water draining from the Gordon site and MacLellan site meet) and included many of the lakes and rivers known to be used by Indigenous Nations, particularly Marcel Colomb First Nation, for fishing: Keewatin River, Hughes River, Hughes Lake, Muskeg Lake, Chepil Lake, Dunsheath Lake, Eden Lake, Goldsand Lake, Burge Lake, Sickle Lake, and Granville Lake. d. As described in Volume 2, Chapter 10, Section 10.4.2.4 of the EIS, Alamos will develop and implement a "worker's code of conduct" that will apply to all employees who fly in or drive to work shifts at the Project. This worker's code of conduct will include provisions to limit the potential increase in fishing mortality caused by the increased work force in the Lynn Lake area. While the specifics of this worker's code of conduct have not been finalized, it may include, but not be limited to: 1) prohibiting fishing in lakes and streams of a specific size, lakes and streams known to be used by local Indigenous peoples for subsistence or traditional purposes, or that have been determined to already have depressed populations due to overfishing by Manitoba Conservation and Climate; 2) prohibiting employees from using freezer space for fish in the camp; and 3) implementing a "catch-and-release only" policy for all out-of-town employees while on-site. As a result of this policy, Alamos does not anticipate any residual effects on the ability of local Indigenous peoples to exercise their right to fish for subsistence or traditional purposes. e. As described in Volume 2, Chapter 10, Section 10.7.1 of the EIS, none of the potential residual effects of the Project on fish and fish habitat are predicted to result in significant adverse effects. As a result, no change in the abundance or distribution of fish populations in the Gordon and MacLellan site LAAs are

ID:	IAAC-192
	predicted to occur. Therefore, no loss of fish species in the Gordon and MacLellan site LAAs is expected. Similarly, no loss of fish species in the RAA is expected because residual effects of the Project are not expected to interact cumulatively with effects from past, present, or reasonably foreseeable projects to adversely effect fish populations or fish species in the RAA. No residual effect on the ability of Indigenous peoples to exercise their right to fish for subsistence or traditional purposes in the LAAs and RAA is expected for this reason. f. Project effects that could affect fish and fish habitat and, therefore, affect the exercise of Indigenous fishing rights in the RAA were identified and assessed in Volume 2, Chapter 10 of the EIS. These potential Project effects were due to: 1) potential changes to fish habitat due to physical alteration or destruction of lakes or streams in relation to mine infrastructure; 2) potential changes to surface water quality due to air-borne or liquid effluent discharges; 3) potential change to surface water quantity (i.e., lake levels and stream flows) due to construction and operation of water management infrastructure; and 4) potential changes in fish mortality due to water intakes, blasting, or recreational fishing pressure. Mitigation measures for each of these potential effects were identified in Volume 2, Chapter 10, Section 10.4.2.3 of the EIS and included mitigation measures specific to the Gordon site (e.g., constructing a new diversion channel between Gordon and Farley lakes prior to the decommissioning of the existing diversion channel) and MacLellan site (e.g., recycling water between the Tailings Management Facility and the mill to reduce freshwater make-up requirements), mitigation measures common to both sites (e.g., using dust suppression techniques on exposed ground within the PDAs to limit fugitive dust), and mitigation measures specific to eliminating or limiting effects to fish and fish habitat (e.g., installing fish screens on water intakes that are consistent with DFO's Interim Code of Practice for End of Pipe Fish Protection Screens for Small Water Intakes in Freshwater). Potential residual effects (i.e., effects remaining after mitigation) were assessed for their potential to interact cumulatively with residual effects from past, present, or reasonably foreseeable Projects or activities in the RAA in Volume 2, Chapter 10, Section 10.5 of the EIS. These past, present, or reasonably foreseeable Projects and activities in the RAA included mineral development (i.e., mining), mineral exploration, recreational fishing, and traditional land use. Potential cumulative effects of the Project with other past, present or reasonably foreseeable future projects on fish and fish habitat were not anticipated for reasons explained in Volume 2, Chapter 10, Section 10.5.1 of the EIS. g. Information shared by Indigenous Nations applied to the assessment of potential Project and cumulative effects on fish and fish habitat included information in traditional land and resource use (TLRU) studies provided by Marcel Colomb First Nation, and the Manitoba Metis Federation, and from engagement activities conducted with the Barren Lands First Nation, Mathias Colomb Cree Nation, Manitoba Metis Federation, Nisichawayasihk Cree Nation, O-Pipon-Na-Piwin Cree Nation, and Peter Ballantyne Cree Nation by Alamos prior to and during preparation of the Lynn Lake Gold Project EIS. Key issues and concerns are provided in Volume 1, Chapter 3, Table 3-8 of the EIS and details of current use regarding fish and fish habitat are provided in Volume 2, Chapter 17 according to each Indigenous Nation engaged, where data are available. Further Project-specific TLRU studies have been funded by Alamos for Sayisi Dene First Nation, Peter Ballantyne Cree Nation and Mathias Colomb Cree Nation and are anticipated in 2021. The TLRU studies included information about the fish species that are

ID:	IAAC-192
	harvested for subsistence and traditional purposes, the lakes and rivers where these fish species are caught, the time of year they are fished, and trends in the abundance and size of fish from different lakes and rivers over time. It is anticipated that the forthcoming TLRU studies will add to this information source. TLRU data was used to augment information collected during fish and fish habitat surveys conducted between 2015 and 2019 to describe existing conditions and fish communities in lakes and streams near the Project and to define the spatial boundaries for the assessment of potential effects on fish and fish habitat. Information gathered during engagement activities included concerns that Indigenous Nations had about the Project and its potential effects on fish and fish habitat. These concerns were used to confirm that Fish and Fish Habitat was a Valued Component to be assessed in the EIS (i.e., fishing and potential effects to fish were the first or second most common concern identified by participants in open houses conducted for the Project between 2016 and 2020) and to confirm the "pathways of potential effects" between the Project and fish and fish habitat that needed to assessed (e.g., potential changes in water quality and its affect on fish health, growth, and survival). On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. In the TLRU Report MCCN indicated fishing for pickerel, lake trout, northern pike, whitefish, sturgeon, tullibee, sucker, perch in severalakes within and beyond the RAA report fishing in Chepil and Hughes lakes within the LAA.
Attachment:	No

RESPONSE TO IAAC-193

ID:	**IAAC-193**
Expert Department or Group:	CCN-64 CCN-65 CCN-66 SDFN-72 SDFN-73 SDFN-74
Guideline Reference	6.1.9 Indigenous peoples 6.3.4 Indigenous peoples
EIS Reference	10.4.2.4 Residual Effects
Information Request:	a. Describe how subsistence consumption/harvesting of fish will be affected based on the increases in dissolved chemical concentrations in the water and the perceived effects on fish. i. Explain how this may affect the exercise of the rights of Indigenous people. ii. Update the effects assessment with this information and identify any mitigation measures, as required.
Response:	a. The only water quality parameters predicted to exceed Canadian or Manitoba Water Quality Guidelines for the Protection of Aquatic Life and baseline concentrations by more than 20% (i.e., Parameters of Potential Concern) at the Gordon site during any mine phase were fluoride and phosphorus. However, neither parameter was predicted to occur at concentrations likely to cause lethal or sub-lethal effects to fish in any lake in the Gordon site local assessment area (LAA). Therefore, it is not expected that the abundance or distribution of fish used for subsistence consumption/harvesting would be effected. Additionally, neither fluoride nor phosphorus bioaccumulate in fish tissue. Total aluminum and total cadmium are the only two water quality parameters to be identified as parameters of potential concern in waterbodies that support fish species that could be harvested in subsistence fisheries (e.g., northern pike, walleye) at the MacLellan site; total aluminum in the Keewatin River and total cadmium in Minton Lake. Total aluminum concentrations in the Keewatin River were predicted to be higher than water quality guidelines for the protection of aquatic life only within 2 km downstream of the Project and only in January during the post-closure phase after the open pit is discharging to the receiving environment. Total aluminum concentrations in Cockeram Lake (where subsistence and/or recreational fishing are most likely to occur) were not predicted to exceeded water quality guidelines for the protection of aquatic life at any time. Total cadmium concentrations in Minton Lake were predicted to exceed the water quality guideline for the protection of aquatic life by only 10%, and only 10% of the time during the post-closure phase. Further, dissolved cadmium concentrations in Minton Lake were not predicted to exceed the Manitoba water quality guideline for the protection of aquatic biota. For the reasons above, and those explained in greater detail in Volume 2, Chapter 10 of the Environmental Impact Statement (EIS), the predicted total aluminum concentration in the Keewatin River and total cadmium concentration in Minton Lake during post-closure are not expected to cause sub-lethal or lethal effects to fish and, therefore, are not expected to alter the abundance or distribution of fish that could be harvested for subsistence purposes.

ID:	IAAC-193
	As described in Volume 2, Chapter 18, Section 18.4.2.1 of the EIS, changes in non-carcinogenic and carcinogenic health risks from ingestion, including the ingestion of fish, due to Project-related chemicals are considered negligible. The potential human health risk associated with the consumption of fish from the Gordon and Maclellan regions for Baseline Case and Future Case conditions are further described in Volume 5, Appendix H, Section 5.4.5 of the EIS. With the exception of methylmercury, health risks associated with exposure to non-carcinogenic metals were below the risk acceptability benchmark of 0.2 for Baseline Case and Future Case conditions for each of the metals considered (Table 5-74, Table 5-75, Table5-78, Table 5-79 of Volume 5, Appendix H). For methylmercury, the predicted human health risks exceeded 0.2 under Baseline Case and Future Case conditions for the Indigenous toddler and adult receptors in both the Gordon and MacLellan regions. However, the human health risks associated with methylmercury under Future Case conditions were the same as the health risks predicted under Baseline Case conditions for the Indigenous toddler and adult receptors. In addition, the lifetime cancer risks associated with lifetime consumption of fish under Future Case conditions were below the cancer risk acceptability benchmark of 10^{-5} for Indigenous receptors in the Gordon and MacLellan regions (Table 5-82 and Table 5-84 of Volume 5, Appendix H). Based on these results the HHRA concluded that changes in the concentrations of Project-related chemicals in fish tissue represents a negligible human health risk i. Volume 2, Chapter 17, Section 17.4.2 of the EIS elaborates on the interaction of effects on fish and fish habitat and current use. Change to availability of fish is assessed relative to the changes identified in Volume 2, Chapter 10 of the EIS. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5, assess these changes in the context of effects on the availability of and access to current use resources, as well as the perception of Indigenous peoples regarding altered values of resources (including fish), sites or areas resulting in avoidance. As described in Volume 2, Chapter 17, Section 17.4.2, indirect effects include the diminished desire to conduct traditional activities in an area perceived to be influenced adversely by Project activities, for example avoidance of fishing in particular areas due to the perception of changes in fish health or water quality. The conclusions of the assessment of effects on current use as described in Volume 2, Chapter 17 support the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. An overview of the effects that were incorporated into the assessment of Indigenous and Treaty rights from other VC chapters, such as the fish and fish habitat assessment, among other VCs (i.e. water quality assessment) are presented in Volume 2, Chapter 19, Table 19-1 and described in Section 19.1.2.2 of the EIS. Changes to the perception of safety of country foods (including fish) are assessed in Volume 2, Chapter 19, Section 19.5.2, as part of effects to Indigenous Health Conditions. This assessment supports the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. ii. The assessment of potential Project effects on Indigenous and Treaty rights considered, among other things, changes to the ability to exercise Indigenous or Treaty rights to hunt, trap, fish, and gather resources. The pathways through which changes to Indigenous or Treaty rights may occur include the loss or alteration of resources relied on to exercise a right. Consequently, the pathways are similar for potential effects for the exercise and practice of

ID:	IAAC-193
	Indigenous or Treaty rights including the availability of traditionally harvested resources, such as fish. Where the Project has a residual effect on traditional harvesting, that has been considered as a residual effect on Indigenous or Treaty rights. As stated in Volume 2, Chapter 17, Section 17.4.2.3 of the EIS, 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 and the conclusions stated above 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. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other additional information regarding subsistence consumption/harvesting of fish has been received by Alamos. Therefore, no updates to the assessment of effects on the exercise of the rights of Indigenous peoples are required. No additional mitigation measures or changes to the conclusions of the EIS are necessary. Responses to comments CCN-64, CCN-65, and CCN-66 from Chemawawin Cree Nation and comments SDFN-72, SDFN-73, and SDFN-74 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-193) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-194

ID:	**IAAC-194**
Expert Department or Group:	CCN-77 MCCN-51 SDFN-85
Guideline Reference	4.3 Study strategy and methodology 6.3.4 Indigenous peoples
EIS Reference	11.1.2.1 Indigenous Engagement 11.1.4.1 Spatial Boundaries 11.4.6 Project Residual Effects
Information Request:	a. Identify and assess the pathways of effects between effects to vegetation and wetlands and the potential impacts (tangible and intangible) to Indigenous Groups on use of lands for traditional purposes and potential impacts to the rights of Indigenous people. b. Describe how information from Indigenous Groups on use and impact to rights related to surface vegetation and wetlands was considered in the effects assessment for current use of lands and resources for traditional purposes. If this information was not considered, update the effects assessment to include information on Indigenous Groups' use and rights related to surface vegetation and wetlands.
Response:	a. The vegetation and wetlands assessment considers potential effects of the Project on direct and indirect change to vegetation species, community diversity, and wetland function, including the distribution and abundance of native plant communities, species of conservation concern, and traditional use plants. While the vegetation and wetlands assessment acknowledges vegetation and wetlands are valued by Indigenous peoples and assesses effects on plants of interest to Indigenous peoples identified through the engagement program for the Project, the vegetation and wetlands assessment itself does not assess or predict effects on other valued components. However, conclusions of the vegetation and wetlands assessment have been incorporated in the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 of the Environmental Impact Statement (EIS) and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. Volume 2, Chapter 17 of the EIS, Sections 17.4.2 and 17.4.3 assess the pathway of effects on vegetation and wetlands on current use including changes to availability of and access to resources and harvesting areas. Vegetation clearing is the primary pathways for a direct change in availability of traditional resources during site preparation activities. Site preparation activities will require the removal of 1,210 ha of upland and wetland habitat for the Project development area (PDA), including 143 ha that have been previously disturbed. Once cleared, the PDA will no longer be suitable habitat for traditionally harvested wildlife or vegetation. No changes to vegetation species, communities or wetland function are anticipated beyond the local assessment area for the vegetation and wetlands valued component. As such there are no anticipated effects extending to the regional assessment area. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5 of the EIS assessed these changes in the context of effects on the experience of Indigenous peoples which adversely alter the perceived values of current use

ID:	IAAC-194
	resources, sites or areas that may result in avoidance. The indirect effects on habitat (i.e., habitat alteration) including alteration to habitat perception is expected to vary depending on the Project component, pathway, and measurable parameter but all effects are limited to within 1 km of the PDA. b. Specific current use sites and areas identified through engagement as well as the traditional land and resource use (TLRU) studies completed are summarized in Volume 2, Chapter 11, Table 11-4 of the EIS. This information was incorporated into the assessment for vegetation and wetlands (Volume 2, Chapter 11) in the characterization of the baseline and in the determination of Project effects, mitigation measures, and significance of effects. This information was incorporated into the assessment of current use of lands and resources for traditional purposes (Volume 2, Chapter 17) in the pathways of effects on availability of resources for current use (Volume 2, Chapter 17, Section 17.4.2). The conclusions of this assessment supported the assessment of Indigenous and Treaty rights presented in Volume 2, Chapter 19, Section 19.9.3. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations.
Attachment:	No

RESPONSE TO IAAC-195

ID:	**IAAC-195**
Expert Department or Group:	CCN-81 CCN-82 CCN-84 SDFN-89 SDFN-90 SDFN-92
Guideline Reference	2.4 Application of the precautionary approach 4.3 Study strategy and methodology 6.1.9 Indigenous peoples 6.2 Predicted changes to the physical environment 6.3.4 Indigenous peoples 6.5 Significance of residual effects
EIS Reference	12.0 Assessment of Potential Effects on Wildlife and Wildlife Habitat 12.1.3 Potential Effects, Pathways and Measurable Parameters 12.1.5 Residual Effects Characterization Tables 12-2 and 12-3 17.1.4 Potential Effects, Pathways and Measurable Parameters
Information Request:	a. Identify and assess the pathways of effects between effects to wildlife and wildlife habitat and potential impacts (tangible and intangible) to Indigenous Groups on use of lands for traditional purposes and potential impacts to right of Indigenous people. b. Describe how the pathways of effects outlined in part a were considered in the qualitative assessment of magnitude of effects and the characterization of residual effects. If these pathways were not considered in the effects assessment, provide an updated effects assessment on Indigenous Groups' use of lands for traditional purposes and potential impacts to Indigenous people and their rights. c. Describe how information from Indigenous Groups on use and impact to rights related to wildlife and wildlife habitat was considered in the development of the significance criteria for current use of lands and resources for traditional purposes. If this information was not considered, update the assessment to include information on Indigenous Groups' use and rights related to wildlife and wildlife habitat.
Response:	a. The wildlife and wildlife habitat VC (Volume 2, Chapter 12 of the Environmental Impact Statement [EIS]) considers potential effects of change in wildlife habitat, change in wildlife mortality risk, and change in wildlife health. The wildlife and wildlife habitat assessment itself does not assess or predict effects on other valued components; however, conclusions of the wildlife and wildlife habitat assessment are incorporated into the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 of the EIS and the effects on Indigenous and Treaty rights in Volume 2, Chapter 19 of the EIS. Volume 2, Chapter 17 of the EIS, Sections 17.4.2, and 17.4.3 further elaborates on the interaction of effects on wildlife and wildlife habitat with current use including direct and indirect change to availability and access to wildlife which are assessed relative to the predicted residual effects on wildlife habitat and mortality risk described in Volume 2, Chapter 12. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5 assesses these changes in the context of effects on the experience of Indigenous peoples which adversely alter the perceived values of current use resources, sites or areas that may result in avoidance. The indirect effects on habitat (i.e., habitat alteration) including alteration to habitat perception

ID:	IAAC-195
	is expected to vary depending on the Project component, pathway, and measurable parameter; however, effects are predicted to be within 1 km of the Project development area. The conclusions of the assessment of current use, which incorporated the results of the assessment of Wildlife and wildlife habitat, informed the assessment of Indigenous peoples (socio-economic conditions, health, and Indigenous and Treaty rights) in Volume 2, Chapter 19. b. The wildlife and wildlife habitat VC (Volume 2, Chapter 12) considers potential effects of change in wildlife habitat, change in wildlife mortality risk, and change in wildlife health. This assessment determined that the magnitude of effects on wildlife would generally be low given that for many of the Project phases, effects will result in a <10% and <5% change in general wildlife habitat and species at risk (SAR) and species of conservation concern (SOCC) habitat in the local assessment area (LAA), respectively; and that the Project would not result in a measurable change in the abundance or distribution of wildlife. The residual effects were concluded to be not significant as they are not expected to threaten the long-term persistence or viability of wildlife and wildlife habitat within the regional assessment area (RAA), nor are they expected to diminish conservation efforts for the survival, management, and recovery of species of conservation concern or species at risk. These conclusions informed the assessment of current use (Volume 2, Chapter 17). The magnitude of effects and characterization of residual effects presented in Volume 2, Chapter 17 considered changes in availability of resources (Section 17.4.2.), access to resources (17.4.3) and changes in cultural values (Section 17.4.5) in the context of the predicted changes in wildlife abundance (as assessed in Volume 2, Chapter 12 in changes to wildlife mortality risk, health and habitat). 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. c. The selection of focal species for the assessment of wildlife and wildlife habitat included species of importance identified through engagement as well as the traditional land and resource use (TLRU) studies completed (Volume 2, Chapter 12; Table 12-1 of the EIS). This information was incorporated into the baseline information for the assessment for wildlife and wildlife habitat (Volume 2, Chapter 12) and into the assessment of current use of lands and resources for traditional purposes (Volume 2, Chapter 17). In addition, the assessment of wildlife and wildlife habitat applied knowledge gained through Indigenous engagement including traditional ecological knowledge regarding the past and present abundance and distribution of wildlife such as woodland caribou, barren-ground caribou, moose, hunted bird species and trapped furbearers in the Project region as well as observations regarding general environmental trends over time. Concerns raised by Indigenous Nations relating to potential Project-related environmental effects include the loss or alteration (e.g., fragmentation) of wildlife habitats and how this will affect wildlife populations, particularly as it relates to traditionally harvested species; the increased mortality of wildlife, resulting primarily from vehicle collisions; and the quality of terrestrial and aquatic environments resulting from potential degradation and contamination of resources. These concerns influenced baseline data collection efforts and the assessment of potential Project-related environmental effects on wildlife and wildlife habitat, including species of cultural and subsistence importance such as moose and furbearers. Volume 2, Chapters 17 and 19 also considered the knowledge gained

ID:	IAAC-195
	from the Indigenous engagement program in the characterization of the baseline and potential effects as described in Volume 2, Chapter 17, Section 17.2.14, which describes harvesting sites, species and activities of importance to Indigenous Nations. This information was cross-referenced in the assessment through the determination of project pathways, mitigation measures, and identification and characterization of residual effects.
Attachment:	No

RESPONSE TO IAAC-196

ID:	**IAAC-196**
Expert Department or Group:	CCN-39 CCN-42 CCN-43 MCCN-19 SDFN-46 SDFN-48 SDFN-50 SDFN-151
Guideline Reference	5.0 Engagement with Indigenous Groups and Concerns Raised 6.4 Mitigation measures 6.1.9 Indigenous peoples 6.3.2 Migratory Birds 6.3.4 Indigenous peoples
EIS Reference	7.1.2.1 Indigenous Engagement 7.4.1.3 Mitigation 7.4.2.3 Mitigation 7.4.2.4 Project Residual Effects 7.9 Follow-up and Monitoring 19.10 Follow-up and Monitoring 23.5.8 Noise Monitoring Plan
Information Request:	a. Describe how noise/vibration effects, including blasting, may induce avoidance behavior by wildlife and migratory birds and how that may impact Indigenous land users exercising their Section 35 Rights of the *Constitution Act*, 1982. Update the effects assessment with this information and identify any mitigation measures as required.
Response:	a. Sensory disturbance, including noise and vibration emitted during the construction and operation of the Project has been identified as a pathway for a change in habitat (Table 12-11 in Volume 2, Chapter 12, Section 12.3 of the Environmental Impact Statement [EIS; i.e., under emissions, discharges, and wastes]). As described in Volume 2, Chapter 12, Section 12.4.2.3 of the EIS, an indirect loss or alteration of wildlife habitat is expected due to noise and activity, which can result in habitat avoidance and reduced habitat effectiveness for wildlife, including for migratory birds, species at risk (SAR) and species of conservation concern (SOCC), moose, and furbearers using areas adjacent to the Project Development Area (PDA). Chronic sensory disturbance from mining equipment and ore hauling, and occasional disturbance from blasting will terminate following completion of the operation phase at the Gordon site (six years; Volume 2, Chapter 12, Section 12.1.3 of the EIS). Noise-related effects on wildlife have the potential to occur when noise levels exceed 40 dBA (Shannon et al. 2016). The distance at which the mean volume of operational activities around the site attenuates to 40 DBA is approximately 1 km (Volume 1, Chapter 7 of the EIS). Increased traffic volumes associated with the Project may cause some animals to avoid parts of PR 391 and the Gordon site access road, but effects are not expected to extend far beyond the PDA. Some species may habituate to the chronic sensory disturbance near the site and those that inhabit the local assessment area (LAA) adjacent to the site access road and PR 391 may be unaffected. As described above, noise and vibration have been incorporated into the assessment of effects for the Wildlife and Wildlife Habitat VC and an updated assessment is not warranted. Alamos has committed to several mitigation

ID:	IAAC-196
	measures (Volume 2, Chapter 12, Section 12.4.2.3 of the EIS) that will be used to reduce effects to wildlife and wildlife habitat resulting from noise and vibration, including: • Design for restriction of unauthorized access to habitat adjacent to the PDA. • Design for scheduling vegetation clearing and site preparation activities outside the breeding period for migratory birds (e.g., Zone C7; May 7 to August 7; ECCC 2019b). If activities that could result in risk of harm cannot be avoided, Alamos will develop and implement a Project-specific Avian Monitoring Plan as a sub-plan within the Wildlife Monitoring and Management Plan that outlines how risk of harm will be managed in accordance with ECCC guidance (Volume 3, Chapter 23, Section 23.5.14 of the EIS). • Flag environmentally sensitive areas (e.g., seeps and springs, mineral licks, dens, roosts, stick nests, hibernacula) prior to clearing and construction, and evaluation of the features for additional mitigation measures (e.g., setbacks). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance. Alamos has made additional commitments in provincial IR response TAC-GOR-10 to schedule vegetation clearing activities to occur outside the boreal caribou calving and calf-rearing period from May 1 to June 30. Site preparation activities will also be postponed until after June 30 only in the unlikely event that boreal caribou are detected within the LAA surrounding the sites (i.e., within 1 km of the Project). While Indigenous engagement has helped guide baseline data collection efforts and the assessment of potential Project-related environmental effects on wildlife and wildlife habitat, including species of cultural and subsistence importance, the wildlife and wildlife habitat assessment itself does not assess or predict effects on other valued components (see CCN-81). However, conclusions of the wildlife and wildlife habitat assessment have been incorporated in the assessment of Project effects on current use by Indigenous peoples in Volume 2, Chapter 17 of the EIS and the exercise of Indigenous rights in Volume 2, Chapter 19 of the EIS. Volume 2, Chapter 17, Section 17.4.2 of the EIS elaborates on the interaction of effects on wildlife and wildlife habitat with current use including direct and indirect change to wildlife habitat and mortality risk. Changes to availability and access to wildlife are assessed relative to the predicted residual effects on wildlife habitat described in Volume 2, Chapter 12 of the EIS. Volume 2, Chapter 17, Sections 17.1.4, 17.4.2, and 17.5.5 of the EIS assessed these changes in the context of effects on the experience of Indigenous peoples, which adversely alter the perceived values of current use resources, sites or areas that may result in avoidance. The conclusions of the assessment of current use, which incorporated the results of the assessment of wildlife and wildlife habitat, supported the assessment of Indigenous and Treaty rights (Volume 2, Chapter 19, Section 19.9.3 of the EIS). An overview of the effects that were incorporated into the assessment of Indigenous and Treaty rights from other VC chapters, such as the wildlife and wildlife habitat assessment, among other VCs are presented in Table 19-1 and described in Volume 2, Chapter 19, Section 19.1.2.2 of the EIS.

ID:	**IAAC-196**
	Reference: Shannon G., M. McKenna, L. Angeloni, K. Crooks, K. Fristrup, E. Brown, K. Warner, M. Nelson, C. White, J. Briggs J, S. McFarland, and G. Wittemyer. 2016. A synthesis of two decades of research documenting the effects of noise on wildlife. Biol Rev. 91:982–1005.
Attachment:	No

RESPONSE TO IAAC-197

ID:	**IAAC-197**
Expert Department or Group:	MCCN-05
Guideline Reference	3.1 Project components 3.2 Project activities 5.0 Engagement with Indigenous Groups and Concerns Raised 6.3.4 Indigenous peoples
EIS Reference	2.3.2.2 Other Waste Storage and Management 2.3.2.3 Utilities and Infrastructure 12.4.2.2 Project Pathways
Information Request:	a. Describe how engagement, including the collection and identification of issues, with Indigenous Groups will be undertaken for all permanent and temporary Project infrastructure including the transmission line rights of way, bridge construction, and road upgrades. b. Incorporate the outcome of the engagement activities into the assessment and update the related effects assessments for the Project. Identify any changes to the conclusions of the effects assessments and any additional mitigation measures, as necessary.
Response:	a. Future engagement activities with Indigenous Nations will follow the principles outlined in the Project-specific community engagement plan, presented in Volume 1, Chapter 3, Appendix 3A of the Environmental Impact Statement (EIS). With respect to future engagement, Alamos has shared with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, but no feedback has been received. Ongoing engagement will include evaluation of program results, and subsequent updates to the program. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. As described in Volume 3, Chapter 23, Section 23.3 of the EIS, as results become available from the follow-up and monitoring program, a standard communication procedure will be established to provide data, distribute information, and accept inquiries from Indigenous Nations. Alamos currently maintains a local office/ presence in Lynn Lake that facilitates ongoing communications. During construction and operation, Alamos will maintain an office at the MacLellan site and will consider maintaining a smaller office in Lynn Lake to further facilitate communication, with staff available to receive information and follow-up on potential issues and concerns regarding temporary and permanent Project infrastructure. A complaint resolution process will also be developed for the Project. Complaints received with respect to permanent and temporary Project infrastructure will be assigned a tracking number and a lead person to conduct the investigation, gather information, and confirm if the reported incident was in compliance with regulatory requirements. The results of the investigation will determine if corrective action is required and how it will be implemented. b. A supplemental report was submitted to IAAC in March 2021 that includes new information received through more recent engagement activities (May 2020-December 2020). No new predicted effects or recommended mitigation measures were identified and therefore, no changes to the effects assessment or conclusions

ID:	IAAC-197
	in the EIS are proposed based on the additional information received from Indigenous Nations following the filing of the EIS and summarized in the supplemental filing. The EIS predictions regarding the characterization of residual adverse effects on all VCs and the determinations of significance of residual adverse effects on all VCs remain valid and applicable in consideration of the information received through engagement with Indigenous Nations up to December 31, 2020. A response to comment MCCN-05 from Mathias Colomb Cree Nation was provided by Alamos directly to that Indigenous Nation in February 2021. The direct response to MCCN-05 included the information provided herein (i.e., in this response to IAAC-197) and sought additional comment from Mathias Colomb Cree Nation. No further comments have been received from Mathias Colomb Cree Nation. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-198

ID:	**IAAC-198**
Expert Department or Group:	MMF-27 MMF-28 MMF-30
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge
EIS Reference	EIS Summary
Information Request:	a. Provide detailed and localized information on MMF's use and occupancy values in the PDA and LAA. If this information cannot be obtained, provide a rationale. b. Provide an updated effects assessment, using all information available, to determine Manitoba Métis-specific potential effects, direct and indirect pathways of effects, effects assessment, mitigation measures, and significance of residual effects. Validate the assessment with the MMF.
Response:	a. Alamos received an interim Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study (MMTKLUO) from the Manitoba Metis Federation in December 2019 and the final MMTKLUO in March 2020 (Environmental Impact Statement [EIS] Appendix 17A), both of which included the Manitoba Metis Federation's perspective on Métis Rights, claims, and interests. The MMTKLUO documents use by Manitoba Métis Community harvesters within 100 km of the Project (SVS 2020:6). In the final Project-specific Manitoba Métis Traditional Knowledge, Land Use, and Occupancy Study, 440 land use and occupancy features were reported within 100 km of the Project sites, with 14 of these features residing with 1 km of the Project Development Areas (PDAs). Information from the interim and final MMTKLUO reports have been considered by Alamos, and where appropriate, incorporated into the EIS (see Volume 2, Chapter 17, Section 17.2.14.4 of the EIS). b. Applicable TLRU information has been incorporated within relevant sections of the EIS and considered against the initial results of the biophysical and socioeconomic VC assessments, including characterization of existing conditions, assessment of potential effects, identification of thresholds and limits, proposed mitigation measures and monitoring, and consideration of cumulative effects. The information provided by Manitoba Metis Federation in their interim and final MMTKLUO was considered in the overview for current use (Volume 2, Chapter 17, Section 17.2.14.4) and contributed to the assessment of residual and cumulative effects Volume 2, Chapter 17, Section 17.4 and Section 17.5 of the EIS. the information provided by Manitoba Metis Federation also considered in the determination of significance in Volume 2, Chapter 17, Section 17.7 of the EIS. Alamos has continued engagement with the Manitoba Metis Federation since the EIS has been filed in July 2020 but has not received any additional information about Manitoba Metis Federation use and occupancy values. Therefore, no updated the effects assessment for Indigenous physical and cultural heritage is required at this time. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No changes to the conclusions of the EIS are proposed based on the additional information received. Responses to comments MMF-27, MMF-28, and MMF-30 from the Manitoba Metis Federation were provided by Alamos directly to that Indigenous Nation in February

ID:	IAAC-198
	2021. The direct responses to MMF-27, MMF-28, and MMF-30 included the information provided herein (i.e., in this response to IAAC-198) and sought additional comment from the Manitoba Metis Federation. No further comments have been received from the Manitoba Metis Federation. Alamos' engagement with Indigenous Nations will be ongoing for the life of the Project.
Attachment:	No

RESPONSE TO IAAC-199

ID:	**IAAC-199**
Expert Department or Group:	CCN-20 CCN-21 CCN-68 CCN-73 CCN-93 CCN-95 CCN-96 CCN-98 CCN-99 CCN-100 CCN-102 CCN-103 IAAC MCCN-51 MCCN-58 MCCN-68 MCCN-71 MCCN-72 MCCN-73 MCCN-74 MCCN-75 MCCN-76 MCCN-77 MCCN-78 MCCN-79 MCCN-90 MCCN-91 MCCN-92 MCCN-94 MMF-01 SDFN-21 SDFN-22
Guideline Reference	2.4 Application of the precautionary approach 3.2.3 Spatial and temporal boundaries 4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement With Indigenous Groups and Concerns Raised 6.1.9 Indigenous peoples 6.3.4 Indigenous peoples
EIS Reference	2.2.2 In-Design Mitigation 2.2.3 Environmental Protection, Mitigation and Management 4.1 Introduction 8.1.6 Significance Definition 11.1.4.1 Spatial Boundaries 11.4.4.3 Project Residual Effect 12.1.4.1 Spatial Boundaries 17.0 Assessment of Potential Effects on Current Use
Information Request:	a. Update the effects assessment for current use of lands and resources for traditional purposes for each Indigenous Group based on additional engagement, supplementary information and new TLRU studies received. Update the significance criteria, characterization of residual effects, and significance conclusions based on the new information. b. Identify and describe how information from each Indigenous Group was and will be integrated into the assessment, including significance criteria, and updates on the current use of lands and resources for traditional purposes. c. Identify and describe any disparity between the views of Indigenous Groups and the proponent on the consideration of Indigenous knowledge (methodology used and the outcomes of the analysis), efforts made to reconcile the disparities, and rationale for conclusions on matters for which disparity in views remains.
Response:	a. The assessment of effects on for current use of lands and resources for traditional purposes includes available information obtained from each Indigenous Nation through the Indigenous engagement program for the Project, traditional land and resource use (TLRU) studies submitted to Alamos, the results of a review of publicly available sources, and the results of relevant biophysical and socio-economic valued components (VCs), as directed by the Environmental Impact Statement (EIS) Guidelines, as well as previous project experience. The results of the engagement activities that identified the VCs of importance for each Indigenous Nation are presented in Volume 2, Chapter 19, Table 19-1 of the EIS. As described in Volume 1, Chapter 3, Section 3.1 of the EIS, the Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through:

ID:	IAAC-199
	• In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by the Impact Assessment Agency of Canada (IAAC). Project-specific TLRU studies from Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020) were submitted to Alamos prior to filing the EIS and information from each TLRU study was considered in the assessment of effects on current use of lands and resources for traditional purposes, as referenced below. Alamos has continued engagement with Indigenous Nations since the EIS was filed. A supplemental filing was submitted to IAAC in March 2021 that includes new information collected from more recent engagement activities (May 2020-December 2020). On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No other new TLRU studies have been submitted to Alamos by Indigenous Nations and no additional information about current use of lands and resources for traditional purposes has been received by Alamos since the EIS was filed. Therefore, no updates to the assessment of current use of lands and resources for traditional purposes is required and no changes to the conclusions in the EIS are necessary. The EIS predictions regarding the characterization of residual adverse effects on all Valued Components (VCs) and the determinations of significance of residual adverse effects on all VCs remain valid and applicable in consideration of the information received through engagement with Indigenous Nations up to December 31, 2020. Responses to comments CCN-20, CCN-21, CCN-68, CCN-73, CCN-93, CCN-95, CCN-96, CCN-98, CCN-99, CCN-100, CCN-102, and CCN-103 from Chemawawin Cree Nation; MCCN-51, MCCN-58, MCCN-68, MCCN-71, MCCN-72, MCCN-73, MCCN-74, MCCN-75, MCCN-76, MCCN-77, MCCN-78, MCCN-79, MCCN-90,

ID:	IAAC-199
	MCCN-91, MCCN-92, and MCCN-94 from Mathias Colomb Cree Nation; MMF-01 from the Manitoba Metis Federation; and SDFN-21 and SDFN-22 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-199) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project. b. Input from each Indigenous Nation was considered in assessment of current use of lands and resources for traditional purposes to the extent that such information was available to Alamos. Applicable TLRU information obtained through engagement with Indigenous Nations up to May 22, 2020 was integrated with relevant sections of the EIS and considered against the initial results of the biophysical and socioeconomic VC assessments, including characterization of existing conditions, assessment of potential effects, identification of thresholds and limits, proposed mitigation measures and monitoring, and consideration of cumulative effects. Alamos employed a thorough and consistent method for considering TLRU information and concerns raised by Indigenous Nations in the assessment of current use of lands and resources for traditional purposes. Information and concerns gathered by Alamos were reviewed and summarized into the following categories: • Traditional Ecological Knowledge (TEK) – Hydrogeology (groundwater) – Hydrology – Surface water quality – Fish and fish habitat – Vegetation and wetlands – Wildlife and biodiversity. • TLRU – Hunting – Fishing – Trapping – Plant harvesting – Travel – Cultural, spiritual, and ceremonial practices or areas. • Project design. • Cumulative effects. • Location of sites and areas. • Proposed mitigation measures. The purpose of this summary was to categorize applicable TLRU information within relevant EIS categories to identify the most relevant TLRU information so that it may be more effectively considered. The summary was used to facilitate the inclusion of TLRU throughout the assessment of current use of lands and

ID:	IAAC-199
	resources for traditional purposes, including the methodology, characterization of existing conditions, assessment of potential effects, identification of thresholds and limits, proposed mitigation measures and monitoring, and consideration of cumulative effects. The TLRU information included in Volume 2, Chapter 17 of the EIS reflects information available at that time. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. As stated above no additional TLRU studies or TLRU information has been made available to by Alamos since the EIS was filed. Alamos' ongoing engagement with Indigenous Nations from May to December 2020 (presented in the March 2021 supplemental filing on engagement activities) identified no effects that have not already been addressed in the EIS and therefore, additional mitigation measures are not necessary. c. Efforts to reconcile areas of disparity may occur, generally, through the provision of Project information, the incorporation of feedback that results in changes to Project planning or mitigation and through commitment to further exploring an issue, concern or recommendation. As stated above in part a. of this response Alamos has offered many opportunities for Indigenous Nations to provide input, including sharing Project documentation and sections of the draft Indigenous or Treaty rights assessment. Alamos received no comments on the methodology used or the outcomes of analysis prior to or following the filing of the EIS. To facilitate reconciliation of any disparities in views related to the information used in the EIS, a supplemental filing document was provided to IAAC in March 2021 providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020, and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during the course of the engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the supplemental filing. Additionally, Alamos provided Indigenous Nations, who had raised concerns that were addressed in the EIS, with an EIS guidance document in Q1 2021. The purpose of the document was to expand upon information currently contained in Volume 1, Chapter 3, Table 3-8 of the EIS and

ID:	IAAC-199
	provide additional context and clarification to assist Indigenous Nations with their review of the EIS and how their nation-specific concerns are addressed therein. The assessment on the effects of the Project on Indigenous and Treaty rights was developed in accordance with the Guidelines for the Development of an Environmental Impact Statement for the Project (the EIS Guidelines) and was also informed by best environmental assessment practices; feedback received from the identified Indigenous Nations potentially affected by the Project; Crown consultation and accommodation reports for recent Projects, and IAAC policy statements (see Volume 2, Chapter 19, Section 19.9.1.5 of the EIS). The information sources for the EIS and its assessment of effects on Indigenous and Treaty rights include information from the Indigenous engagement program for the Project, TLRU studies submitted to Alamos, the results of review of publicly available sources, and the results of relevant biophysical and socio-economic VCs, as directed by the EIS Guidelines, as well as previous project experience. The EIS is not intended to define or delimit existing or asserted Indigenous or treaty rights within a given traditional territory or occupancy area, nor is it intended to provide a complete depiction of the dynamic way of life and systems of knowledge maintained by Indigenous Nations engaged on the Project. For the assessment of current use of lands and resources for traditional purposes (Volume 2, Chapter 17), the EIS adopted a conservative approach that assumes that current use may occur near the Project, even if these activities are not specifically identified by participating Indigenous Nations. The assessment also assumes that the ability to exercise or practice Indigenous or treaty rights, including harvesting rights and integral practices, traditions, and customs, depends on the health and abundance of traditionally harvested species and the continued availability of and access to traditionally used resources, sites and areas. Therefore, the assessment of potential Project-related effects on fish, heritage, wildlife, vegetation, and other VCs linked to traditional activities informed the assessment of potential Project-related effects on current use and on Indigenous and Treaty rights, but were not used as a proxy for the assessment of those rights.
Attachment:	No

RESPONSE TO IAAC-200

ID:	**IAAC-200**
Expert Department or Group:	CCN-04 CCN-06 CCN-22 CCN-52 CCN-60 CCN-69 CCN-70 CCN-71 CCN-72 CCN-74 CCN-92 CCN-115 CCN-118 CCN-121 CCN-125 CCN-126 CCN-127 CCN-128 CCN-129 CCN-130 CCN-131 IAAC MCCN-99 MCCN-100 MCCN-101 MCCN-102 MCCN-103 MCCN-104 MCCN-105 SDFN-04 SDFN-06 SDF-23 SDFN-68 SDFN-77 SDFN-78 SDFN-79 SDFN-80 SDFN-82 SDFN-105 SDFN-131 SDFN-134 SDFN-137 SDFN-141 SDFN-143 SDFN-144 SDFN-151 SDFN-152
Guideline Reference	5.0 Engagement with Indigenous Groups and Concerns Raised 6.1.11 Human environment 6.6.3 Cumulative effects assessment 8.0 Follow-up and Monitoring Programs
EIS Reference	1.4.1.1 Federal Requirements Table 1-2 2.2.3 Environmental Protection, Mitigation and Management 3.3Engagement with Indigenous Nations 4.3.7 Environmental Management Plans and Monitoring 9.4.2.1 Analytical Assessment Methods 11.4.2.2 Mitigation
Information Request:	a. Describe how Indigenous Groups will be involved in the development and implementation of mitigation measures, and follow-up and monitoring programs for the following VCs: i. cultural heritage resources and sites of significance; ii. current use of resources for traditional purposes; and iii. Indigenous peoples' health and socio- economic conditions. b. Explain how the proponent will share monitoring results with Indigenous Groups and how feedback will be managed. c. Provide an outline of and rationale for the complaint/grievance mechanism(s) that will be developed for this Project. d. Describe the protocol for notifying Indigenous Groups of accidents and malfunctions during all phases of the Project. e. Identify how proposed mitigation measures address each Indigenous Group's specific concerns about the Project. Document and incorporate community specific feedback on this evaluation from potentially affected Indigenous Groups. f. Identify and describe any disparity between the views and conclusions of Indigenous Groups and the proponent regarding the Project's mitigation and monitoring measures, efforts made to reconcile the disparities, and rationale for conclusions on matters for which any disparity in views remains.
Response:	a. The following response is intended to address parts i, ii, and iii. Alamos will engage with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs.

ID:	IAAC-200
	Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. No changes to the conclusions of the EIS or associated follow-up and monitoring are proposed based on the additional information received. Responses to comments CCN-04, CCN-06, CCN-22, CCN-52, CCN-60, CCN-69, CCN-70, CCN-71, CCN-72, CCN-74, CCN-92, CCN-115, CCN-118, CCN-121, CCN-125, CCN-126, CCN-127, CCN-128, CCN-129, CCN-130, and CCN-131 from Chemawawin Cree Nation; MCCN-99, MCCN-100, MCCN-101, MCCN-102, MCCN-103, MCCN-104, and MCCN-105 from Mathias Colomb Cree Nation; and SDFN-04 SDFN-06, SDF-23, SDFN-68, SDFN-77, SDFN-78, SDFN-79, SDFN-80, SDFN-82, SDFN-105, SDFN-131, SDFN-134, SDFN-137, SDFN-141, SDFN-143, SDFN-144, SDFN-151, and SDFN-152 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-200) and sought additional comment from the Nations. Alamos' engagement with Indigenous Nations will be on-going for the life of the Project. b. As described in Volume 3, Chapter 23, Section 23.3 of the Environmental Impact Statement (EIS), as results become available from the follow-up and monitoring programs, a standard communication procedure will be established to provide data, distribute information, and accept inquiries from Indigenous Nations. c. Alamos remains committed to open and transparent engagement throughout the life of the Project and will continue to work with participating Indigenous Nations to document and respond to concerns raised in relation to the Project and its potential effects. In addition to these ongoing engagement efforts, a complaint resolution process will be developed for the Project. Any complaints will be assigned a tracking number and a lead person to conduct the investigation, gather information, and confirm if the incident was in compliance with regulatory requirements. The results of the investigation will determine if corrective action is required and how it will be implemented. d. The Project follow-up and environmental monitoring and management plans will include a process of sharing of information related to accidents and malfunctions, including the provision of reports of monitoring and follow-up programs. The environmental monitoring plans are described in Volume 3, Chapter 23, Section 23.5 of the EIS and include plans such as an emergency response and spill prevention and contingency plan, explosives management plan, and a heritage and cultural resources protection plan which will include procedures for chance heritage findings. e. An overview of how each Indigenous Nation's concerns were addressed is presented in the EIS in Volume 1, Chapter 3, Table 3-8. Additionally, a supplemental filing document was provided to IAAC in March 2021 providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during the course of the engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos also provided Indigenous Nations

ID:	IAAC-200
	with a EIS guidance document in Q1 2021. The purpose of the document was to expand upon information currently contained in Volume 1, Chapter 3, Table 3-8 of the EIS and provide additional context and clarification to assist Indigenous Nations with their review of the EIS and how their nation-specific concerns are addressed therein. f. Based on the additional information gathered from Indigenous Nations from May 2020-December 2020, a disparity in views and conclusions regarding the proposed mitigation and monitoring measures was not identified; however, several Indigenous Nations identified the need for more community-specific information to be integrated with the EIS. The information sources for the development of the mitigation and monitoring measures in the EIS and its assessment of effects on Indigenous and Treaty rights include: • Information from: the Indigenous engagement program for the Project. • Traditional land and resource use (TLRU) studies submitted to Alamos. • The results of a review of publicly available sources. • The results of relevant biophysical and socio-economic valued components (VCs); as directed by the EIS Guidelines. • Prior project experience. To reconcile any disparity in views on the baseline information included in the EIS, Alamos will consider the need for additional mitigation or monitoring as it continues to engage with Indigenous Nations. Indigenous Nations have expressed interest in being involved in the follow-up and monitoring programs and opportunities will be provided to members of directly affected Indigenous Nations to participate in these programs. Information on conceptual monitoring and management plans was provided to Indigenous Nations on April 21 (registered mail) and April 22 (email), 2021. Alamos has not received any comments from Indigenous Nations regarding this material to date.
Attachment:	No

RESPONSE TO IAAC-201

ID:	**IAAC-201**
Expert Department or Group:	CCN-05 CCN-06 CCN-18 MCCN-10 MCCN-11 MCCN-12 SDFN-05 SDFN-06
Guideline Reference	2.3 Engagement with Indigenous groups 5.0 Engagement with Indigenous Groups and Concerns Raised
EIS Reference	3.3.4 Indigenous Engagement Methods
Information Request:	a. Describe efforts to engage Indigenous Groups regarding: i. Project design and plans for ongoing engagement in the Project planning process; ii. the effects assessment methodology, including for cumulative effects and VCs of interest to each Indigenous Group; iii. opportunities to verify the proponent's interpretation of the Indigenous Group's views on Project design; and iv. the provision of key EA documents, baseline studies, EIS, key findings, and plain language summaries. b. Describe each Indigenous Groups' views and how their views were incorporated into Project planning, design, assessment of effects and impacts, and selection of mitigation or accommodation measures, including: i. Indigenous and community knowledge; ii. current use within an Indigenous Group's respective traditional territory; iii. proposed mitigation measures; and iv. concerns about the Project's potential environmental effects and impacts to Aboriginal and Treaty rights.
Response:	a. Engagement with Marcel Colomb First Nation, the Indigenous Nation potentially most affected by the Project began in 2014. i. Engagement with Indigenous Nations, identified in the CEAA Guidelines of November 2017, regarding Project design and plans for an ongoing engagement program for the Project began in October 2017 with an introductory letter and information package to the leadership of each identified Nation. ii. Methods used to engage with Indigenous Nations are described in Volume 1, Chapter 3, Section 3.3.4 of the Environmental Impact Statement (EIS) and in Section 3 of the March 2021 supplemental filing to the EIS, and include meetings with Indigenous Nations in community; meetings with Indigenous Nation leadership; text messages, telephone conversations, and e-mail communications, traditional land and resource use (TLRU) studies with five Indigenous Nations (three pending results); site tours; an environmental committee; fieldwork participation opportunities; and subsequent information packages, parcels, and registered letters. Plans are also currently being developed to engage Indigenous Nations in the environmental monitoring and management plans for the Project. Engagement of Indigenous Nations on the EIS methodology also included questionnaires at public open houses, information packages sent for review and comment, and meetings with leadership to provide opportunities to identify potential Project effects, issues

ID:	IAAC-201
	and concerns of the Project, valued components of interest, and to review preliminary EIS results. iii. Efforts to engage with Indigenous Nations to verify the Indigenous Nation's views included letters sent in December 2019 to request verification on the summary of engagement activities and confirmation that Alamos' list of community interests was correct; community profiles and EIS reference lists sent in August 2018 and December 2019, for review and comment; meetings to review the TLRU study reports developed for the Project; and information packages sent in April 2020 of the draft Indigenous and Treaty rights assessment for each Indigenous Nation and a request for review and feedback on the Nation's exercise of rights and how the Project may affect those rights. iv. Key EIS documents that have been provided to potentially affected Indigenous Nations include: Indigenous Nation profiles and EIS references sent in August 2018; a summary of engagement sent in December 2019; the draft assessment of Indigenous and Treaty rights sent in April 2020; and the community profile, assessment of Indigenous and Treaty rights, links to all Project documents (including baseline data reports), and a summary of the EIS sent in fall 2020. Information regarding Project details, baseline studies, and/or EIS findings was presented at public open houses in Lynn Lake in 2015, 2016, 2017, and 2020. b. The views of Indigenous Nations including Indigenous knowledge, current use information, mitigation measures, and issues and concerns on effects and rights are described in Volume 1, Chapter 3, Table 3-8 and Volume 2, Chapter 17, Section 17.2.14 and Appendix 17A of the EIS and were integrated with Project planning, design, and the EIS in the biophysical and socioeconomic VC assessments, including characterization of existing conditions, assessment of potential effects, identification of thresholds and limits, proposed mitigation measures and monitoring, and consideration of cumulative effects. i. By way of example, Marcel Colomb First Nation identified increased traffic effects on wildlife as a concern (Volume 1, Chapter 3, Table 3-8; Volume 2, Chapter 17, Section 17.1.3.4). In the assessment of wildlife, mortality risk was specifically assessed in the context of increased vehicle traffic (Volume 2, Chapter 12, Section 12.2.2.4 and Chapter 12.4.3.4). Mitigation measures such as speed limits and signage were then proposed to address this concern (Volume 2, Chapter 12, Section 12.4.3.3.). Hunting pressure was also a concern that was raised by Marcel Colomb First Nation, Mathias Colomb Cree Nation and Manitoba Metis Federation with the increased workforce in the area. This concern was assessed as part of lands and resource use in Volume 2, Chapter 15, Section 15.4.4.3) and in current use of lands and resources for traditional purposes in Volume 2, Chapter 17, Section 17.4.2.3). Mitigation measures such as prohibiting workers from bringing firearms or fishing equipment to the Site were developed. Other concerns that were considered in the assessment of current use and impacts on rights are described in Volume 2, Chapter 17, Section 17.1.3.4 for each Indigenous Nation. ii. Marcel Colomb First Nation identified concerns related to: noise, blasting, air quality, groundwater, surface water quantity and quality, fish, accidents and malfunctions, terrestrial habitat degradation, hunting pressures, traffic effects, traplines effects, and management of tailings. Mathias Colomb Cree Nation identified concerns related to: noise, dust, emissions, traffic, wildlife collisions,

ID:	IAAC-201
	effects on vegetation and traplines, aesthetics, traplines, hunting pressure, mine rock effects on surface water, effects on heritage resources, and transportation routes. O-Pipon-Na-Piwin Cree Nation identified concerns related to surface water and resources that depend on surface water. Nisichawayasihk Cree Nation identified concerns related to increased truck traffic, including invasive species spread and spills. Manitoba Metis Federation identified concerns related to surface water and wetland effects (quality and quantity), hunting pressures, habitat fragmentation and effects on sensitive species, caribou migration, and remediation. Peter Ballantyne Cree Nation identified concerns related to surface water and barren ground caribou. Barren Lands First Nation identified effects related to air and water quality and barren ground caribou. Metis Nation Saskatchewan Eastern Region 1 identified concerns related to migration of woodland caribou. Hatchet Lake First Nation identified concerns related to effects to barren ground caribou. iii. Additional concerns related to current use activities and treaty rights have been reported from recent engagement activities (May 2020-December 2020) in the March 2021 supplemental filing to the EIS. The EIS adopted a conservative approach that assumes that current use of lands and resources for traditional purposes (current use) may occur near the Project, even if these activities are not specifically identified by participating Indigenous Nations. The assessment also assumes that the exercise of traditional activities depends on the health and abundance of traditionally harvested species and the continued availability of and access to traditionally used resources, sites and areas. Therefore, the assessment of potential Project-related effects on fish, heritage, wildlife, vegetation, and other VCs linked to traditional activities informed the assessment of potential Project-related effects on current use and on Indigenous and Treaty rights, but were not used as a proxy for the assessment of those rights. Mitigations proposed by Indigenous Nations are described in Volume 2, Chapter 17, Section 17.1.3.2 and applied to the assessment of effects in Sections 17.4.2.2, 17.4.3.2 and 17.4.4.2 of the EIS. iv. Concerns about the Project's potential environmental effects are described in Volume 1, Chapter 3, Table 3-8 of the EIS, are highlighted in each of the relevant VC chapters including Volume 2, Chapter 17, Section 17.1.3.4. Impacts to Indigenous and Treaty rights are described for each Indigenous Nation in Volume 2, Chapter 19, Section 19.9.3 of the EIS.
Attachment:	No

RESPONSE TO IAAC-202

ID:	**IAAC-202**
Expert Department or Group:	CCN-03 CCN-07 CCN-10 CCN-12 CCN-13 CCN-15 CCN-17 CCN-24 CCN-55 CCN-67 CCN-86 CCN-104 CCN-105 CCN-106 CCN-107 CCN-113 CCN-119 CCN-122 CCN-124 IAAC MCCN-12 MCCN-13 MCCN-14 MCCN-16 MCCN-93 MMF-01 SDFN-03 SDFN-07 SDFN-10 SDFN-11 SDFN-12 SDFN-13 SDFN-14 SDFN-15 SDFN-16 SDFN-18 SDFN-19 SDFN-26 SDFN-63 SDFN-75 SDFN-119 SDFN-120 SDFN-121 SDFN-122 SDFN-123 SDFN-135 SDFN-138 SDFN-140 SDFN-142 SDFN-149 SDFN-150
Guideline Reference	3.2.3 Spatial and temporal boundaries 4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised 6.6.3 Cumulative effects Assessment
EIS Reference	2.2.3 Environmental Protection, Mitigation and Management 3.3.2 Identification of Potentially Interested Indigenous Nations 3.3.4 Indigenous Engagement Methods 3.3.5 Indigenous Engagement Results 4.1 Introduction 10.1.2.1 Indigenous and Public Engagement
Information Request:	a. Describe efforts to engage Indigenous Groups, gather views, and validate information regarding the methodology in assessing potential impacts of the Project on Section 35 Rights of the *Constitution Act*, 1982, including views on the selection of VCs and spatial and temporal boundaries. Provide engagement records. b. Identify the following from the perspective of each Indigenous Group: i. VCs related to the Indigenous Group's Section 35 Rights of the *Constitution Act*, 1982, including potential or established rights, title, and related interests, that may be impacted by the Project; ii. the conditions that are needed to support each VC for the exercise of Section 35 Rights of the *Constitution Act*, 1982, and how past, current, and reasonably foreseeable activities affect or will affect these conditions; iii. the general (or specific) geographic area where the Indigenous Group exercises Section 35 Rights of the *Constitution Act*, 1982; and iv. how the Project affects each VC identified, related to the Indigenous Groups' exercise of Section 35 Rights of the *Constitution Act*, 1982. c. Define the criteria identified or validated by each Indigenous Group for assessing the severity of potential Project impacts (positive and negative) on the exercise of Section 35 Rights of the *Constitution Act*, 1982. Criteria could consider: i. the nature of rights ii. regional/historic/cumulative impacts iii. cultural landscape iv. preferred expression of rights d. Provide an analysis on the severity of potential impacts on each VC identified in the EIS and the potential exercise of Section 35 Rights of the *Constitution Act*, 1982, for each Indigenous Group. Describe impacts that have not been fully mitigated or accommodated as part of the EA. Provide engagement records with Indigenous Groups related to this topic.

ID:	IAAC-202
	e. Identify and describe disparity between the views and conclusions of Indigenous Groups and the proponent regarding the severity of the Project's potential impacts to Section 35 Rights of the *Constitution Act*, 1982, efforts made to reconcile the disparities, and rationale for conclusions on matters for which disparity in views remains. f. Describe mitigation measures that specifically address potential impacts to the Section 35 Rights of the *Constitution Act*, 1982, to each Indigenous Group. Include any commitments that would seek to avoid, mitigate or reduce potential impacts to the rights of Indigenous peoples.
Response:	a. Engaging Indigenous Nations regarding the methodology in assessing the potential effects of the Project on Section 35 rights are described in Volume 1, Chapter 3, Section 3.3.5 of the Environmental Impact Statement (EIS) and included: letters sent in December 2019 to request verification on the summary of engagement activities and confirmation that Alamos' list of each Nation's interests was correct; Indigenous Nation profiles and EIS reference lists sent in August 2018 and December 2019, for review and comment; meetings with Peter Ballantyne Cree Nation and Marcel Colomb First Nation to review the traditional land and resource use (TLRU) study reports developed for the Project; and information packages sent in April 2020 of the draft of the existing conditions and scope for the Indigenous and Treaty rights assessment each Indigenous Nation and a request for review and feedback on the Nation's exercise of rights and how the Project may affect those rights. Engagement records are provided in Volume 1, Chapter 3, Appendix 3B of the EIS and in the supplemental filing in Appendix A. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. No changes to the EIS methods or conclusions of the EIS are proposed based on the additional information received. Responses to comments CCN-03, CCN-07, CCN-10, CCN-12, CCN-13, CCN-15, CCN-17, CCN-24, CCN-55, CCN-67, CCN-86, CCN-104, CCN-105, CCN-106, CCN-107, CCN-113, CCN-119, CCN-122, and CCN-124 from Chemawawin Cree Nation; MCCN-12, MCCN-13, MCCN-14, MCCN-16, and MCCN-93 from Mathias Colomb Cree Nation; MMF-01 from the Manitoba Metis Federation; and SDFN-03 SDFN-07, SDFN-10, SDFN-11, SDFN-12, SDFN-13, SDFN-14, SDFN-15, SDFN-16, SDFN-18, SDFN-19, SDFN-26, SDFN-63, SDFN-75, SDFN-119, SDFN-120,

ID:	IAAC-202
	SDFN-121, SDFN-122, SDFN-123, SDFN-135, SDFN-138, SDFN-140, SDFN-142, SDFN-149, and SDFN-150 from Sayisi Dene First Nation were provided by Alamos directly to those Indigenous Nations in February 2021. The direct responses to the Indigenous Nations included the information provided herein (i.e., in this response to IAAC-202) and sought additional comment from the Nations. b. The information sources for the assessment of effects on Indigenous and Treaty rights, including VCs related to Indigenous and Treaty rights, conditions required to exercise those rights, and pathways of effects of the Project on those rights include information from the Indigenous engagement program for the Project, TLRU studies submitted to Alamos, the results of a review of publicly available sources, and the results of relevant biophysical and socio-economic valued components (VCs), as directed by the EIS Guidelines, as well as previous project experience. (i) The results of the engagement activities that identified the VCs of importance for each Indigenous Nation are presented in Volume 2, Chapter 19, Table 19-1 of the EIS. As described in Volume 1, Chapter 3, Section 3.1 of the EIS, the Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through: • In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by the Impact Assessment Agency of Canada (IAAC). (ii and iv) Information packages were also sent in April 2020 of the draft Indigenous and Treaty rights assessment (existing conditions and scope) with a request for review and feedback on the Nation's exercise of rights and how the Project may affect those rights. Manitoba Metis Federation provided feedback. The feedback received is presented in Volume 2, Chapter 19, Section 19.9.1.6 of the EIS. Additional feedback received after the EIS filing (May 2020-December 2020) on the assertion of rights included feedback from Sayisi Dene First Nation and is presented in the March 2021 supplemental filing. The results of other engagement activities on concerns about their exercise of rights is presented in Volume 1, Chapter 3, Table 3-8 of the EIS and the Section 3 of the March 2021 supplemental filing. Marcel Colomb First Nation and Manitoba Metis Federation also provided TLRU studies, presented in Volume 2, Chapter 17, Appendix 17A. The concerns on Indigenous and Treaty rights recorded from the Indigenous engagement to date have included: effects of water and subsequent effects to vegetation, wildlife and fish affecting harvesting activities, effects of dust on surrounding vegetation and habitat, effects to caribou and caribou migration which is an important species for harvesting, effects on trapping activities, effects on other harvesting activities from increased workforce in the area, effects to sensitive species and increased

ID:	IAAC-202
	invasive species, aesthetic, air quality, and heritage concerns affecting cultural and resource harvesting activities, and effects to access of resources and areas to exercise rights. These concerns were integrated with the biophysical and socio-economic VC assessments and subsequently, the assessment of Indigenous and Treaty rights in Volume 2, Chapter 19, Sections 19.9.3.1 to 19.9.3.12. (iii and iv) However, the EIS is not intended to define or delimit existing or asserted Indigenous or treaty rights within a given traditional territory or occupancy area, nor is it intended to provide a complete depiction of the dynamic way of life and systems of knowledge maintained by Indigenous Nations engaged on the Project. The assessment assumes that the exercise of traditional activities depends on the health and abundance of traditionally harvested species and the continued availability of and access to traditionally used resources, sites and areas. Therefore, the assessment of potential Project-related effects on fish, heritage, wildlife, vegetation, and other VCs linked to traditional activities informed the assessment of potential Project-related effects on current use and on Indigenous and Treaty rights, but were not used as a proxy for the assessment of those rights. A supplemental filing document has been provided to IAAC providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the supplemental filing. No new information regarding assessment of impacts to Indigenous and Treaty rights has been received by Alamos since the EIS was submitted and therefore, no updates to the assessment of Indigenous and Treaty rights, including effects to VCs related to Indigenous and Treaty rights, conditions needed to support the exercise of Indigenous and Treaty rights, or geographic area where Indigenous and Treaty rights are exercised are necessary. c. (i, ii, iii, iv) The criteria used in the assessment of Indigenous and Treaty rights is described in the EIS in Volume 2, Chapter 19, Section 19.9.1.5 and the analysis on the impacts on Indigenous and Treaty rights is presented in Volume 2, Chapter 19, Section 19. 19.9.3. The assessment on the effects of the Project on Indigenous and Treaty rights was developed in accordance with the EIS Guidelines for the Project and was also informed by best environmental assessment practices; feedback received from the identified Indigenous Nations potentially affected by the Project; Crown consultation and accommodation reports for recent Projects, and the Impact Assessment Agency of Canada (IAAC) policy statements (See Volume 2, Chapter 19, Section 19.9.1.5 of the EIS). The assessment of Indigenous and Treaty rights (existing conditions and scope) was sent to Indigenous Nations engaged on the Project in April 2020 for feedback and comment. The feedback received is presented in Volume 2, Chapter 19, Section 19.9.1.6 of the EIS; however, this feedback did not include comment on the method or approach to the assessment. Additional feedback received after the EIS filing (May 2020-December 2020) is presented in the March 2021 supplemental filing and included information from Sayisi Dene First Nation; that was generally approving of the overall approach although contended that specific information from Sayisi Dene

ID:	IAAC-202
	First Nation was lacking. In addition, a conservative approach was used in the EIS. The EIS assumes that current use may occur near the Project, even if these activities are not specifically identified by participating Indigenous Nations. The assessment also assumes that the exercise of traditional activities depends on the health and abundance of traditionally harvested species and the continued availability of and access to traditionally used resources, sites and areas. d. An analysis on the severity of impacts on the potential exercise of Indigenous and Treaty rights is presented in Volume 2, Chapter 19; Section 19.9.1.5. Alamos has summarized the nature and extent of potential impacts on the rights of Indigenous peoples using the criteria established for the VCs relevant to this assessment (i.e., Current Use, Heritage Resources, and Human Health). This approach is informed by best environmental assessment practices; feedback received from potentially affected Indigenous Nations; recent Crown consultation and accommodation reports; and IAAC's Policy Context: Assessment of Potential Impacts on the Rights of Indigenous Peoples and Interim Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples (Government of Canada 2020a; 2020b). Using these criteria, the assessment is presented in Section 19.9.3 and assumes that the exercise of traditional activities depends on the health and abundance of traditionally harvested species and the continued availability of and access to traditionally used resources, sites and areas. Therefore, the assessment of potential Project-related effects on fish, heritage, wildlife, vegetation, and other VCs linked to traditional activities informed the assessment of potential Project-related effects on current use and on Indigenous and Treaty rights but were not used as a proxy for the assessment of those rights. Residual effects on Indigenous and Treaty rights for each Indigenous Nation is presented in Volume 2, Chapter 19, Section 19.9.3 of the EIS. Engagement records are presented in Volume 1, Chapter 3, Appendix 3B of the EIS and in Appendix A of the March 2021 supplemental filing. Information packages were sent in April 2020 to each Indigenous Nation engaged on the Project, which included a draft of the Indigenous and Treaty rights assessment (existing conditions and scope), for review and comment. e. As noted in the letter of comments on the EIS from Chemawawin Cree Nation dated October 9, 2020 and letter of comments on the EIS from Sayisi Dene First Nation dated October 7, 2020, there is a disparity in views related to the methodology used for the assessment of Indigenous and Treaty rights, and subsequently, a disparity in views on the conclusions of these assessments. This disparity is largely related to the view that the assessment of Indigenous rights is required in the assessments of biophysical valued components, that insufficient community-specific information was received, and a view that methodology should consider requirements under the IAA, 2019 such as gender based analysis. The assessment on the effects of the Project on Indigenous and Treaty rights was developed in accordance with the EIS Guidelines for the Project and was also informed by best environmental assessment practices; feedback received from the identified Indigenous Nations potentially affected by the Project; Crown consultation and accommodation reports for recent Projects, and IAAC policy statements (see Volume 2, Chapter 19, Section 19.9.1.5 of the EIS). Efforts to reconcile areas of disparity that may remain with respect to consideration of Indigenous and local knowledge and concerns raised by Indigenous Nations may occur, generally, through the provision of Project information, the incorporation of feedback that results in changes to Project planning or mitigation and through commitment to further exploring an issue, concern or recommendation. A

ID:	IAAC-202
	supplemental filing has been provided to IAAC providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during the course of the engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the supplemental filing. Alamos responded to all individual Nation comments on the EIS in February 2021. The information sources for the EIS and its assessment of effects on Indigenous and Treaty rights include information from the Indigenous engagement program for the Project, TLRU studies submitted to Alamos, the results of a review of publicly available sources, and the results of relevant biophysical and socio-economic valued components (VCs), as directed by the EIS Guidelines, as well as previous project experience. Additional information from engagement is also provided in the March 2021 supplemental filing. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. Finally, Alamos is committed to ongoing engagement with Indigenous Nations. Alamos will engage with Indigenous Nations regarding the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Alamos will discuss planned monitoring activities with directly-affected Indigenous Nations and provide opportunities for Indigenous Nations to participate in these follow-up and monitoring programs. f. Key mitigation measures to be implemented that may serve to avoid or reduce potential effects on the ability to exercise Indigenous or Treaty rights are presented in Volume 2, Chapter 19, Section 19.11 of the EIS and include: • Avoidance of plant harvesting sites in the PDAs through Project design, timing, and scheduling. • Incorporation of plant species of interest to Indigenous peoples into rehabilitation plans where appropriate and technically feasible.

ID:	IAAC-202
	• Implementation of the mitigation measures outlined for the Vegetation and Wetlands (Volume 2, Chapter 11 of the EIS), Land and Resource Use (Volume 2, Chapter 15 of the EIS), Fish and Fish Habitat (Volume 2, Chapter 10 of the EIS), and Wildlife and Wildlife Habitat (Volume 2, Chapter 12 of the EIS) VCs. • Mitigation to changes in access to lands and resources currently used for traditional purposes through; timing of Project activities, potential scheduling of construction, signage, and engagement with Indigenous Nations to identify potential alternate routes of access. • Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring, as well as consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations involved on the Project, including discussion of development and implementation of Project-specific environmental management and monitoring plans. • Project design for engaging local land and resource users and for implementing Project construction work schedules and prohibiting Project employees from bringing firearms of fishing gear to work sites. • Commitments made in Volume 1, Chapter 9, Section 9.9.2 of the EIS to implement surface water monitoring and management plans will also serve to mitigate potential health risks. • Design for community services, infrastructure and well-being, including work site security to offset demands on local police, implementation of a Traffic Management Plan, bussing services for Project employees, and workforce education programs to raise awareness regarding potential worker effects on host communities. • Development of a plan for working with Indigenous-owned businesses to enhance their potential for successfully bidding on Project contracts regarding the supply of goods and services. • Alamos will continue to work towards potential training and education partnerships with Manitoba Keewatinowi Okimakanak Inc. and the Northern Manitoba Sector Council to provide opportunities for Indigenous people to obtain skills and training required for Project participation. • Alamos will continue to engage with Indigenous Nations in supporting the development and promotion of cultural sensitivity training. • Alamos will work with Indigenous Nations to develop training programs oriented to Project operational needs. • Education of construction contractors for the appropriate protocols if heritage or cultural resources, or objects thought to be heritage or cultural resources, are discovered. • Training of staff in the recognition of archaeological features and objects such as precontact Indigenous material culture, and 19th and 20th century Euro-Canadian material culture. • Potential for the hiring of Indigenous field support staff as part of an environmental monitoring team.
Attachment:	No

RESPONSE TO IAAC-203

ID:	**IAAC-203**
Expert Department or Group:	SDFN-95 SDFN-96
Guideline Reference	1.4 Regulatory framework and the role of government 5.0 Engagement with Indigenous Groups and Concerns Raised 6.1.9 Indigenous peoples 6.2.3 Changes to riparian, wetland and terrestrial environments 6.3.4 Indigenous peoples
EIS Reference	3.0 Engagement 12.2.2.2 Species at Risk and Species of Conservation Concern 17.0 Assessment of Potential Effects on Current Use of Lands and Resources for Traditional Purposes by Indigenous People
Information Request:	a. Identify any treaty, self-government or other agreements between federal or provincial governments and Indigenous Groups pertinent to the EA. b. Describe the cultural and traditional management importance of Woodland Caribou to Indigenous Groups. Consider and cite proponent engagement activities and TLRU studies. c. Describe the baseline conditions and historic impacts on caribou and the governance of caribou in the RAA, citing information sources, including proponent engagement activities and TLRU studies. d. Define criteria identified by Indigenous Groups and use the criteria to assess the severity of impacts of the Project (positive and negative) on their governance-based right to traditionally manage Woodland Caribou. e. Identify and describe disparity between the views of Indigenous Groups and the proponent on the severity of potential impacts to governance-based rights. Identify efforts made to reconcile the disparities and rationale for conclusions on matters for which a disparity in views remains.
Response:	a. Pertinent treaties are discussed in Volume 2, Chapter 19, Section 19.9.2 of the Environmental Impact Statement (EIS). First Nations engaged on the Project are members of either Treaty 5, Treaty 6 or Treaty 10. Terms and provisions of each treaty are discussed in Volume 2, Chapter 19, Section 19.9.2 of the EIS. These 'numbered treaties', signed between 1875 and 1906, provided for reserve lands, cash annuities, hunting and fishing tools, agricultural implements and instruction, and the right to hunt and fish on unoccupied Crown lands. The terms of these numbered treaties were modified by the Natural Resources Transfer Agreement (NRTA) of 1930, which confirmed the right of First Nations under treaty to hunt, fish, and trap for food on unoccupied Crown lands or other lands to which they have a right of access for the purposes of hunting, fishing, or trapping. As noted in Volume 2, Chapter 19, Section 19.2 of the EIS, pertinent regulations and agreements between federal or provincial governments and Indigenous Nations include: • Manitoba Treaty Land Entitlement Framework Agreement (1997) between Canada, Manitoba, and the Treaty Land Entitlement Committee to fulfill

ID:	IAAC-203
	outstanding land obligations arising out of Treaty Land Entitlement (TLE) claims. • *First Nations Land Management Act* (1999) which enables participating First Nations to opt out of the 34 land-related sections of the *Indian Act* and develop their own land codes to govern their lands and resources • Government of Manitoba Métis Policy (2010) establishes a strategic guide for the Government of Manitoba in its relationships with Métis people and the Manitoba Metis Federation and defines a framework that is designed to enhance Métis people's participation in decision-making processes of the Government of Manitoba • Province of Manitoba / Manitoba Metis Federation Agreement on Métis Natural Resource Harvesting (2012) recognizes Métis rights to harvest for natural resources for food and domestic use in defined Metis Recognized Harvesting Area. Under this agreement, Métis natural resource harvesting includes hunting, trapping, fishing, and gathering for food and domestic use, including for social and ceremonial purposes. • Manitoba Metis Federation-Canada Framework Agreement on Advancing Reconciliation (2016) and recognizes the Manitoba Metis Federation's legal status, role and jurisdiction as a Métis government and seeks to improve the social and economic well-being of Métis citizens in Manitoba. Alamos is unaware of any self-government agreements between federal or provincial governments and Indigenous Nations engaged on the Project. Drafts of Volume 2, Chapter 19, Section 19.9.1 and Chapter 19.9.2 were provided to each Indigenous Nation for their review and comment prior to Alamos filing the EIS. No comment or feedback was received regarding treaties or other agreements. The information regarding treaties, self-government or other agreements between federal or provincial governments and Indigenous Nations that appears in Volume 2, Chapter 19, Section 19.2 of the EIS reflects all the information available to Alamos on the topic. No additional information about treaties or self-government agreements has been received from Indigenous Nations by Alamos since the EIS was filed. b. The importance of management of woodland caribou was not specifically expressed by Indigenous Nations during the Indigenous engagement program for the Project; however, general concerns regarding effects on woodland caribou were expressed by Marcel Colomb First Nation in engagement and through the traditional land and resource use (TLRU) study, Manitoba Metis Federation in their MMTKLUO study (Volume 2, Chapter 17, Appendix 17A of the EIS), and Métis Nation Saskatchewan-Eastern Region 1 (Volume 1, Chapter 3, Appendix 3B of the EIS). In December 2020, in a meeting with the Impact Assessment Agency of Canada (IAAC) and Alamos, Hatchet Lake First Nation stated that they have no concerns regarding Project effects on caribou. Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. The information regarding management of woodland caribou that appears in Volume 2, Chapter 19, Section 19.1.1.4 of the EIS and the March supplemental filing reflects all the information available to Alamos on the topic. No additional information about management of woodland caribou has been received from Indigenous Nations by

ID:	IAAC-203
	Alamos since December 2020. Therefore, no changes to the conclusions of the EIS are necessary. Responses to comments SDFN-95 and SDFN-96 from Sayisi Dene First Nation were provided by Alamos directly to that Indigenous Nation in February 2021. The direct responses to SDFN-95 and SDFN-96 included the information provided herein (i.e., in this response to IAAC-203) and sought additional comment from Sayisi Dene First Nation. No further comments have been received from Sayisi Dene First Nation. c. The baseline conditions of caribou are described in Volume 2, Chapter 12, Section 12.2.2.1 of the EIS. Woodland caribou have been observed as part of Alamos' baseline study in the regional assessment area (RAA) west of the MacLellan site. The governance of caribou was not raised as a concern during engagement with Indigenous Nations before filing of the EIS. Métis Nation-Saskatchewan, Eastern Region 1 raised a concern regarding potential effects of the Project on woodland caribou that may travel through the Project area east into Saskatchewan and their Métis Region. Manitoba Metis Federation have identified woodland and barren ground caribou as species of importance in their MMTKLUO study. Elders of Marcel Colomb First Nation reported in their Project-specific TLRU study that barren ground caribou had been extirpated from the Project RAA by the 1950s (Volume 2, Chapter 17, Appendix 17A of the EIS). As described in Volume 1, Chapter 3, Section 3.1 of the EIS, the Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through: • In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by IAAC. Project-specific TLRU studies from Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020) were submitted to Alamos prior to filing the EIS and information from each TLRU study regarding caribou was considered as described above. The Mathias Colomb Cree Nation (MCCN) TLRU study aligns with the traditional ecological knowledge shared by MCFN, that is, that the southern limit of barren land caribou range has moved north and out of the RAA due to historical resource extraction activities, urban and infrastructure development and forest fires (Firelight 2021). Indigenous input from engagement activities since May 2020 was incorporated into the supplemental filing to the EIS that was provided to IAAC in March 2021. On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to the Project to Alamos for consideration in the planning and regulatory process for the Project. The report is composed of Traditional Land and Resource Use (TLRU) and Traditional Ecological Knowledge

ID:	IAAC-203
	(TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. Overall, the information provided by Mathias Colomb Cree Nation in the 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. The information shared by Mathias Colomb Cree Nation is consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. Stantec's response to the TLRU Report is provided in Appendix B. This response reflects the most up to date information available to Alamos from Indigenous Nations. The information regarding the baseline conditions of caribou that appears in Volume 2, Chapter 12, Section 12.2.2.1 and Volume 2, Chapter 19, Section 19.1.1.4 of the EIS, the March supplemental filing, and the summary report provided in Appendix B, reflects all the information available to Alamos on the topic. No additional information about baseline conditions of caribou has been received from Indigenous Nations by Alamos. Therefore, no changes to the conclusions of the EIS are necessary. d. No information was shared by Indigenous Nations through engagement or Project-specific TLRU regarding criteria to assess the severity of impacts of the Project (positive and negative) on their governance-based right to traditionally manage woodland caribou. Several Indigenous Nations engaged regarding the Project are represented on the Beverly and Qamanirjuaq Caribou Management Board. e. As no information was shared by Indigenous Nations through engagement or Project-specific TLRU regarding governance-based rights, no disparities have been identified. As described above, Alamos is committed to ongoing engagement with Indigenous Nations affected by the Project and is working with Indigenous Nations to better understand the nature and extent of the exercise of rights in the Project area.
Attachment:	No

RESPONSE TO IAAC-204

ID:	**IAAC-204**
Expert Department or Group:	IAAC
Guideline Reference	4.2.2 Community knowledge and Aboriginal traditional knowledge 5.0 Engagement with Indigenous Groups and Concerns Raised
EIS Reference	3.3.1 Objective and Approach to Engagement with Indigenous Nations 3.3.7 Ongoing Engagement with Indigenous Nations 19.1.1.4 The Influence of Engagement on the Assessment 19.10 Follow-Up and Monitoring
Information Request:	a. For IAAC-188, IAAC-189, IAAC-191, IAAC-192, IAAC- 194, IAAC-195, IAAC-197, IAAC-199, IAAC-200, IAAC-202 and IAAC-203, describe the plan to engage with each of the Indigenous Groups to verify the assessment of potential impacts to Section 35 Rights of the *Constitution Act*, 1982, the significance determination thresholds, analysis methods, and Indigenous specific mitigation measures and monitoring. If required, update the assessment with new information and identify new mitigation measures.
Response:	a. The methodology applied to the assessment of impacts to Indigenous and Treaty rights, conforms to the Canadian Environmental Assessment Act, 2012 (CEAA 2012) and the 2017 Guidelines for the Preparation of an Environmental Impact Statement for the Project, as well as Canadian Environmental Assessment Agency guidance for assessing effects on impacts to rights and traditional use (CEAA 2015; CEAA 2015a). The methods applied reflect standard environmental assessment methods appropriate for the scope and nature of the Project. This approach is informed by best environmental assessment practices; feedback received from potentially affected Indigenous Nations; recent Crown consultation and accommodation reports for projects such as the Robert Banks Terminal 2 project (Government of Canada 2019a); the Trans Mountain Expansion Project Crown Consultation and Accommodation Report (Government of Canada 2019b; the CEA Agency submission to the Teck Frontier Panel (BCEAO 2016; CEA Agency 2019); and IAAC's Policy Context: Assessment of Potential Impacts on the Rights of Indigenous Peoples and Interim Guidance: Assessment of Potential Impacts on the Rights of Indigenous Peoples (Government of Canada 2020a; 2020b). The potential pathways through which changes to Indigenous or Treaty rights may occur are described in Volume 2, Chapter 19, Section 19.1.3 of the Environmental Impact Statement (EIS). Key mitigation measures, including mitigation measures provided or recommended by Indigenous Nations, are detailed in Volume 2, Chapter 17, Sections 17.4.2.2, 17.4.3.2, 17.4.4.2 and in Volume 2, Chapter 19, Sections 19.4.3.2, 19.4.4.2, 19.4.5.2, and 19.4.6.2 of the EIS. Definitions for criteria used to characterize severity of impacts on Indigenous or Treaty rights are presented in Volume 2, Chapter 19, Table 19-11. Alamos understands that the conclusions regarding the seriousness of impacts on Indigenous or Treaty rights and the adequacy of mitigation, accommodation, and consultation, are the responsibility of the Crown.

ID:	IAAC-204
	Information shared by Marcel Colomb First Nation and Manitoba Metis Federation in their Project-specific TLRU studies was reviewed by Alamos and contributed to the assessment of impacts to Indigenous and Treaty rights. Drafts of Volume 2, Chapter 19, Section 19.9.1 and Chapter 19.9.2 of the EIS were provided to each Indigenous Nation for their review and comment prior to Alamos filing the EIS. No comment or feedback the methods for assessment of impacts on Indigenous or Treaty rights, mitigation measures, or criteria for characterizing severity of impacts was received from Indigenous Nations. Alamos is committed to ongoing engagement with Indigenous Nations engaged on the Project and is working with Indigenous Nations to better understand the nature and extent of the exercise of rights in the Project area. As described in Volume 1, Chapter 3, Section 3.1 of the EIS, the Indigenous engagement process for the Project was initiated in 2014 and Alamos has offered many opportunities for input. Prior to the filing of the EIS in May 2020, Alamos shared Project information and provided opportunities for Indigenous Nations engaged on the Project to provide input through: • In-person meetings (with Nation members and with Nation leadership). • Telephone calls, letters, text messages and e-mails. • Site tours, workshops, youth activities. • Opportunities to provide input on secondary sources of information used in the environmental assessment. • Public open houses in Lynn Lake and Nelson House. • Participation in virtual meetings with Indigenous Nations hosted by the Impact Assessment Agency of Canada (IAAC). In addition, Alamos provided a copy the assessment of Indigenous or Treaty rights in Volume 2, Chapter 19, Section 19.9 of the EIS to each Indigenous Nation for their review and comment. Volume 2, Chapter 19, Sections 19.9.3.1 to 19.9.3.12 offers a plain language summary of potential Project effects on Indigenous and Treaty rights. Alamos has not received feedback on the methodology for the assessment of Indigenous or Treaty rights, including, thresholds, significance determination or mitigation and monitoring. A supplemental filing document has been provided to IAAC providing an overview of the subsequent activities that were conducted by Alamos, between May 22, 2020 and December 31, 2020, to engage the 13 Indigenous Nations that were identified by IAAC as potentially affected by the Project. The key additional concerns and issues raised by Indigenous Nations during engagement activities conducted between May 22 and December 31, 2020 are summarized in the supplemental filing, along with Alamos' actions to address these additional concerns and issues. Alamos' plans for future engagement activities to be carried out in 2021 are also described for each Indigenous Nation in the supplemental filing. No new information regarding assessment of impacts to Indigenous and Treaty rights has been received by Alamos since the EIS was submitted and therefore, no updates to the assessment of Indigenous and Treaty rights, including methods, thresholds, significance determination and mitigation and monitoring are required.

ID:	**IAAC-204**
	References: CEAA 2015. Considering Aboriginal traditional knowledge in environmental assessments conducted under CEAA -- Interim Principles. https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/considering-aboriginal-traditional-knowledge-environmental-assessments-conducted-under-canadian-environmental-assessment-act-2012.html CEAA. 2015a. Draft Technical Guidelines for assessing the Current Use of Lands and Resources for Traditional Purposes under CEAA 2012. https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/technical-guidance-assessing-current-use-lands-resources-traditional-purposes-under-ceaa-2012.html.
Attachment:	No

Appendix 1A ATTACHMENTS

A.1 ATTACHMENT IAAC-147

Table IAAC-147-1 Vegetation and Wetland Land Cover Type Abundance in the Gordon PDA, LAA and the RAA and Changes Due to Project Development

Land Cover Type	Description	Existing Conditions			Construction & Operation		Decommissioning/ Closure		Change from Existing Conditions					
									Construction & Operation			Decommissioning/ Closure		
		PDA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	ha	% of LAA	% of RAA	ha	% of LAA	% of RAA
Barren	Naturally unvegetated (i.e., rock outcrop, beaches)	0.0	0.0	0.9	0.0	0.9	0.0	0.9	0.0	N/A	0.0	0.0	N/A	0.0
Conifer Dense[a]	>60% crown closure, with ≥75% coniferous tree cover	22.2	1,094.5	29,040.1	1,072.3	28,801.5	1,072.3	28,801.5	-22.2	-2.0	-0.8	-22.2	-2.0	-0.8
Conifer Open[a]	26-60% crown closure, with ≥75% coniferous tree cover	20.4	463.8	18,512.5	443.4	18,327.4	443.4	18,327.4	-20.4	-4.4	-1.0	-20.4	-4.4	-1.0
Conifer Sparse[a]	10-25% crown closure, with ≥ 75% coniferous tree cover	28.4	355.8	21,814.9	327.4	21,692.8	327.4	21,692.8	-28.4	-8.0	-0.6	-28.4	-8.0	-0.6
Mixedwood Dense[a]	>60% crown closure, with neither coniferous nor deciduous trees comprising ≥ 75% total tree cover	40.0	272.7	2,969.7	232.7	2,929.6	232.7	2,929.6	-40.0	-14.7	-1.3	-40.0	-14.7	-1.3
Mixedwood Open[a]	26 - 60% crown closure, with neither coniferous nor deciduous trees comprising ≥ 75% total tree cover	2.5	96.2	1,317.3	93.7	1,314.8	93.7	1,314.8	-2.5	-2.6	-0.2	-2.5	-2.6	-0.2
Deciduous[a]	>75% Deciduous tree cover	0.0	0.0	155.1	0.0	155.1	0.0	155.1	0.0	N/A	0.0	0.0	N/A	0.0
Shrubland[a]	≥ 20% shrub cover	5.9	141.6	6,778.6	135.7	6,770.7	135.7	6,770.7	-5.9	-4.2	-0.1	-5.9	-4.2	-0.1
Reclaimed Native Upland	Reclaimed upland planted with native trees and grasses	0.0	0.0	0.0	0.0	0.0	156.7	713.6	0.0	N/A	N/A	156.7	N/A	N/A
Reclaimed Upland	Reclaimed upland planted with reclamation species	0.0	0.0	0.0	0.0	0.0	0.0	236.9	0.0	N/A	N/A	0.0	N/A	N/A
Upland subtotal		**119.4**	**2,424.6**	**80,589.1**	**2,305.2**	**79,992.9**	**2,461.9**	**80,943.4**	**-119.4**	**-4.9**	**-0.7**	**37.3**	**1.5**	**0.4**
Water	Lakes, rivers, or streams	13.3	430.3	27,480.80	417.1	27,463.3	446.1	27,558.3	-13.3	-3.1	-0.1	15.8	3.7	0.3
Water subtotal		**13.3**	**430.3**	**27,480.8**	**417.1**	**27,463.3**	**446.1**	**27,558.3**	**-13.3**	**-3.1**	**-0.1**	**15.8**	**3.7**	**0.3**
Bog Shrubby[b,c]	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% shrub cover and tree cover that is ≤ 25%	10.7	194.6	13,266.9	183.9	13,216.4	183.9	13,216.4	-10.7	-5.5	-0.4	-10.7	-5.5	-0.4
Bog Treed[b,c]	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% tree cover by coniferous species	7.9	435.8	28,979.8	427.9	28,790.1	427.9	28,790.1	-7.9	-1.8	-0.7	-7.9	-1.8	-0.7
Fen Graminoid[b]	Connected to surface or groundwater with >40 cm peat accumulation, ≤ 25% shrub and tree cover	0.0	0.0	532.0	0.0	527.5	0.0	527.5	0.0	N/A	-0.9	0.0	N/A	-0.9
Fen Pattern[b,c,d]	Connected to surface or groundwater with a pattern of strings and flarks, with >6% tree cover	0.0	0.0	442.7	0.0	437.6	0.0	437.6	0.0	N/A	-1.2	0.0	N/A	-1.2

Table IAAC-147-1 Vegetation and Wetland Land Cover Type Abundance in the Gordon PDA, LAA and the RAA and Changes Due to Project Development

Land Cover Type	Description	Existing Conditions			Construction & Operation		Decommissioning/ Closure		Change from Existing Conditions					
									Construction & Operation			Decommissioning/ Closure		
		PDA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	ha	% of LAA	% of RAA	ha	% of LAA	% of RAA
Fen Shrubby[b,c]	Connected to surface or groundwater with >40 cm peat accumulation, >25% shrub and ≤ 25% tree cover	41.6	383.9	12,553.8	342.3	12,490.6	342.3	12,490.6	-41.6	-10.8	-0.5	-41.6	-10.8	-0.5
Fen Treed[b,c]	Connected to surface or groundwater with >40 cm peat accumulation, >25% tree cover	0.5	28.1	2,809.9	27.6	2,795.0	27.6	2,795.0	-0.5	-1.8	-0.5	-0.5	-1.8	-0.5
Marsh[b,c]	< 40 cm peat accumulation with < 25% shrub and tree cover	0.0	10.2	383.6	10.2	383.6	10.2	383.6	0.0	0.0	0.0	0.0	0.0	0.0
Swamp Shrubby[b,c]	< 40 cm peat accumulation with >25% shrub cover and ≤ 25% tree cover	1.8	42.2	1,168.4	40.4	1,157.4	40.4	1,157.4	-1.8	-4.3	-0.9	-1.8	-4.3	-0.9
Swamp Treed[b,c]	< 40 cm peat accumulation with >25% tree cover	2.3	195.6	6,603.2	193.3	6,541.0	193.3	6,541.0	-2.3	-1.2	-0.9	-2.3	-1.2	-0.9
Wetland Subtotal		**64.8**	**1,290.4**	**66,740.3**	**1,225.6**	**66,339.2**	**1,225.6**	**66,339.2**	**-64.8**	**-5.0**	**-0.6**	**-64.8**	**-5.0**	**-0.6**
Development	Disturbed land, settlements, roads, industrial development	72.0	119.5	1,568.7	316.8	2,583.5	131.1	1,538.0	197.3	165.1	64.7	11.7	9.8	-2.0
Development Subtotal		**72.0**	**119.5**	**1,568.7**	**316.8**	**2,583.5**	**131.1**	**1,538.0**	**197.3**	**165.1**	**64.7**	**11.7**	**9.8**	**-2.0**
Total		**269.5**	**4,264.8**	**176,378.9**	**4,264.7**	**176,378.8**	**4,264.7**	**176,378.9**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Note:

N/A denotes no data or not applicable.

Numbers may not sum due to rounding.

Fen, swamp and marsh wetlands in the LAA may be indirectly altered or lost due to changes in surface water patterns and groundwater drawdown. Indirect effects to wetlands are expected to persist until mine pits fill and groundwater levels return to existing conditions.

Source:

[a] Canadian Forest Service (2003).

[b] Alberta Environment and Sustainable Resource Development (2015).

[c] National Wetland Working Group (1997).

[d] Halsey et al. 1997

Table IAAC-147-2 Change in Vegetation and Wetland Land Cover Types in the MacLellan PDA, LAA and the RAA and Changes Due to Project Development

Land Cover Type	Description	Existing Conditions			Construction & Operation		Decommissioning/ Closure		Change from Existing Conditions					
									Construction & Operation			Decommissioning/ Closure		
		PDA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	ha	% of LAA	% of RAA	ha	% of LAA	% of RAA
Barren	Naturally unvegetated (i.e., rock outcrop, beaches)	0.0	0.0	0.9	0.0	0.9	0.0	0.9	0.0	N/A	0.0	0.0	N/A	0.0
Conifer Dense[a]	>60% crown closure, with ≥75% coniferous tree cover	216.3	696.3	29,040.1	479.9	28,801.5	479.9	28,801.5	-216.4	-31.1	-0.8	-216.4	-31.1	-0.8
Conifer Open[a]	26-60% crown closure, with ≥75% coniferous tree cover	164.7	469.2	18,512.5	304.6	18,327.4	304.6	18,327.4	-164.6	-35.1	-1.0	-164.6	-35.1	-1.0
Conifer Sparse[a]	10-25% crown closure, with ≥ 75% coniferous tree cover	93.8	295.8	21,814.9	202.0	21,692.8	202.0	21,692.8	-93.8	-31.7	-0.6	-93.8	-31.7	-0.6
Mixedwood Dense[a]	>60% crown closure, with neither coniferous nor deciduous trees comprising ≥ 75% total tree cover	0.0	0.0	2,969.7	0.0	2,929.6	0.0	2,929.6	0.0	N/A	-1.3	0.0	N/A	-1.3
Mixedwood Open[a]	26 - 60% crown closure, with neither coniferous or deciduous trees comprising ≥ 75% total tree cover	0.0	0.0	1,317.3	0.0	1,314.8	0.0	1,314.8	0.0	N/A	-0.2	0.0	N/A	-0.2
Deciduous[a]	>75% Deciduous tree cover	0.0	0.0	155.1	0.0	155.1	0.0	155.1	0.0	N/A	0.0	0.0	N/A	0.0
Shrubland[a]	≥ 20% shrub cover	2.0	29.0	6,778.6	26.9	6,770.7	26.9	6,770.7	-2.1	-7.1	-0.1	-2.1	-7.1	-0.1
Reclaimed Native Upland	Reclaimed upland planted with native trees and grasses	0.0	0.0	0.0	0.0	0.0	556.9	713.6	0.0	N/A	N/A	556.9	N/A	N/A
Reclaimed Upland	Reclaimed upland planted with reclamation species	0.0	0.0	0.0	0.0	0.0	236.9	236.9	0.0	N/A	N/A	236.9	N/A	N/A
Upland subtotal		**476.8**	**1,490.3**	**80,589.1**	**1,013.4**	**79,992.9**	**1,807.2**	**80,943.4**	**-476.9**	**-32.0**	**-0.7**	**316.9**	**21.3**	**0.4**
Water	Lakes, rivers, or streams	4.2	299.6	27,480.8	295.4	27,463.3	361.4	27,558.3	-4.2	-1.4	-0.1	61.8	20.6	0.3
Water subtotal		**4.2**	**299.6**	**27,480.8**	**295.4**	**27,463.3**	**361.4**	**27,558.3**	**-4.2**	**-1.4**	**-0.1**	**61.8**	**20.6**	**0.3**
Bog Shrubby[b,c]	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% shrub cover and tree cover that is ≤ 25%	39.8	207.7	13,266.9	167.9	13,216.4	167.9	13,216.4	-39.8	-19.2	-0.4	-39.8	-19.2	-0.4
Bog Treed[b,c]	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% tree cover by coniferous species	181.8	773.9	28,979.8	592.1	28,790.1	592.1	28,790.1	-181.8	-23.5	-0.7	-181.8	-23.5	-0.7
Fen Graminoid[b]	Connected to surface or groundwater with >40 cm peat accumulation, ≤ 25% shrub and ≤ 25% tree cover	4.4	32.2	532.0	27.6	527.5	27.6	527.5	-4.6	-14.1	-0.9	-4.6	-14.1	-0.9
Fen Pattern[b,c,d]	Connected to surface or groundwater with a pattern of strings and flarks, with >6% tree cover	5.1	15.9	442.7	10.8	437.6	10.8	437.6	-5.1	-32.3	-1.2	-5.1	-32.3	-1.2
Fen Shrubby[b,c]	Connected to surface or groundwater with >40 cm peat accumulation, >25% shrub and ≤ 25% tree cover	21.6	114.4	12,553.8	92.7	12,490.6	92.7	12,490.6	-21.7	-18.9	-0.5	-21.7	-18.9	-0.5

Table IAAC-147-2 Change in Vegetation and Wetland Land Cover Types in the MacLellan PDA, LAA and the RAA and Changes Due to Project Development

Land Cover Type	Description	Existing Conditions			Construction & Operation		Decommissioning/ Closure		Change from Existing Conditions					
									Construction & Operation			Decommissioning/ Closure		
		PDA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	LAA Area (ha)	RAA Area (ha)	ha	% of LAA	% of RAA	ha	% of LAA	% of RAA
Fen Treed[b,c]	Connected to surface or groundwater with >40 cm peat accumulation, >25% tree cover	14.4	61.6	2,809.9	47.2	2,795.0	47.2	2,795.0	-14.4	-23.4	-0.5	-14.4	-23.4	-0.5
Marsh[b,c]	< 40 cm peat accumulation with < 25% shrub and tree cover	0.0	0.0	383.6	0.0	383.6	0.0	383.6	0.0	N/A	0.0	0.0	N/A	0.0
Swamp Shrubby[b,c]	< 40 cm peat accumulation with >25% shrub cover and ≤ 25% tree cover	9.2	36.8	1,168.4	27.6	1,157.4	27.6	1,157.4	-9.2	-24.9	-0.9	-9.2	-24.9	-0.9
Swamp Treed[b,c]	< 40 cm peat accumulation with >25% tree cover	59.8	342.4	6,603.2	282.6	6,541.0	282.6	6,541.0	-59.8	-17.5	-0.9	-59.8	-17.5	-0.9
Wetland Subtotal		**336.2**	**1,584.9**	**66,740.3**	**1,248.5**	**66,339.2**	**1,248.5**	**66,339.2**	**-336.4**	**-21.2**	**-0.6**	**-336.4**	**-21.2**	**-0.6**
Development	Disturbed land, settlements, roads, industrial development	70.3	143.9	1,568.7	961.2	2,583.5	101.5	1,538.0	817.3	568.0	64.7	-42.4	-29.5	-2.0
Development Subtotal		**70.3**	**143.9**	**1,568.7**	**961.2**	**2,583.5**	**101.5**	**1,538.0**	**817.3**	**568.0**	**64.7**	**-42.4**	**-29.5**	**-2.0**
Total		**887.5**	**3,518.7**	**176,378.9**	**3,518.5**	**176,378.8**	**3,518.6**	**176,378.9**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Note:

N/A denotes no data.

Numbers may not sum due to rounding.

Fen, swamp and marsh wetlands in the LAA may be indirectly altered or lost due to changes in surface water patterns and groundwater drawdown. Indirect effects to wetlands are expected to persist until mine pits fill and groundwater levels return to existing conditions.

Source:

[a] Canadian Forest Service (2003).

[b] Alberta Environment and Sustainable Resource Development (2015).

[c] National Wetland Working Group (1997).

[d] Halsey et al. 1997

A.2 ATTACHMENT IAAC-148

Stantec

Project Infrastructure

- Proposed Open Pit
- Potential Infrastructure
- Project Development Area

Survey Locations

- Spring 2020 Tracks Collected in Field
- Fish-bearing Habitat Identified in 2016
- Fish-bearing Habitat Identified in 2020

Land Use / Land Cover

Wetland

- Swamp Shrubby
- Swamp Treed

Landbase

- Existing Access

N

0 250 500 Metres

(At original document size of 11x17)
1:12,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.
3. Imagery: SPOT-7 imagery, BlackBridge Geomatics Corp. July 2015.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-03-14
Technical Review by BHome on 2021-03-14

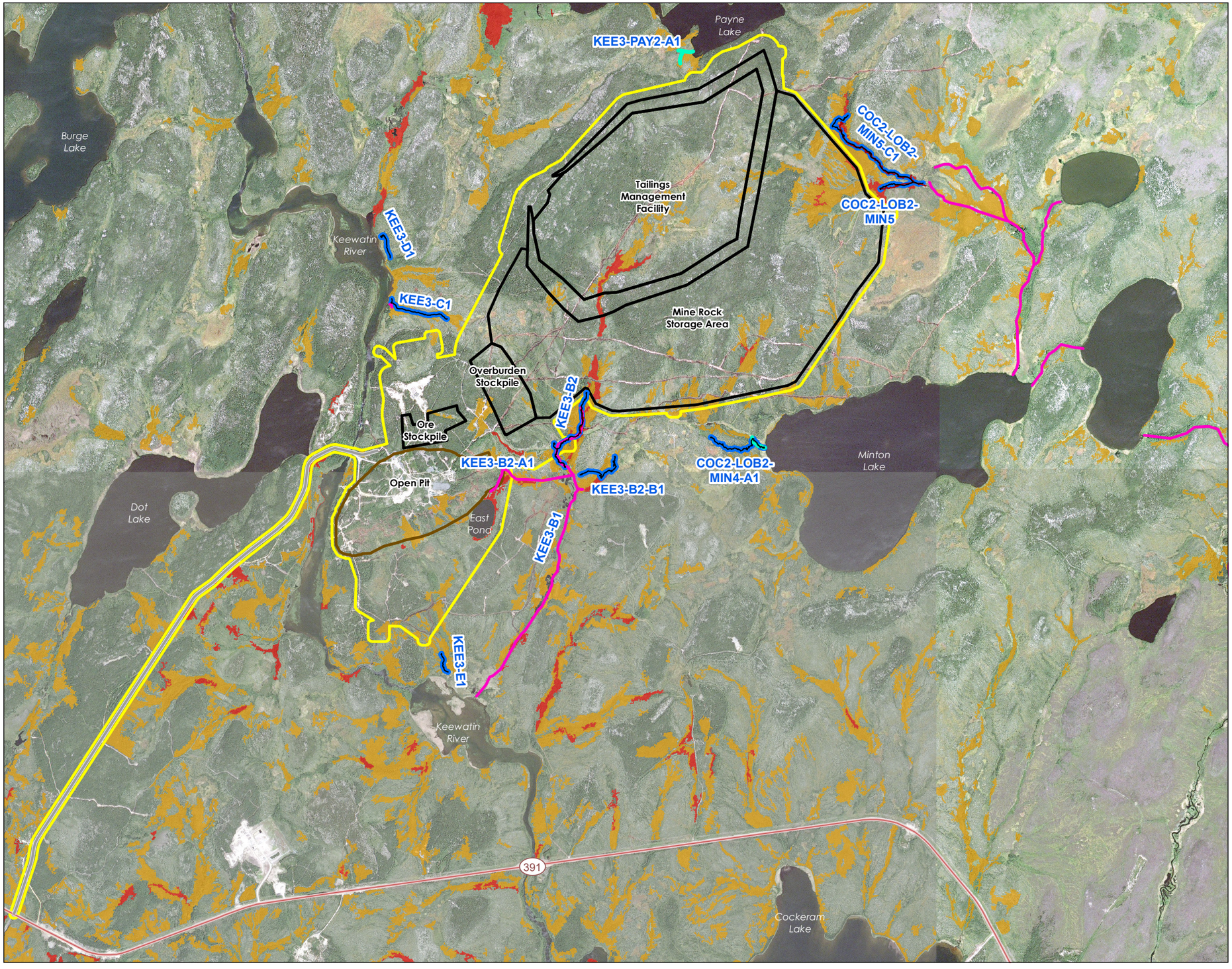
Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473010

Map No.
1

Title
Swamps and Field-Verifed Watercourses - Gordon site

G:_GIS_Project_Folder\111473008_LGP_EA\working\ACV\20200609_spring_watercourse_investigations\Mxd\p1_Gordon_Swamps_and_FieldVerifiedWatercourses_20210623.mxd Revised: 2021-06-25 By: ACampigotto



Stantec

Project Infrastructure
- Proposed Open Pit
- Potential Infrastructure
- Project Development Area

Survey Locations
- Spring 2020 Tracks Collected in Field
- Summer 2020 Tracks Collected in Field
- Fish-bearing Habitat Identified in 2016
- Fish-bearing Habitat Identified in 2019
- Fish-bearing Habitat Identified in 2020

Land Use / Land Cover

Wetland
- Swamp Shrubby
- Swamp Treed

Landbase
- Highway
- Existing Access Road

N

0 0.5 1 Kilometres
(At original document size of 11x17)
1:30,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada.
3. Imagery: SPOT-7 imagery, BlackBridge Geomatics Corp. July 2015.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-03-12
Technical Review by BHome on 2021-03-12

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

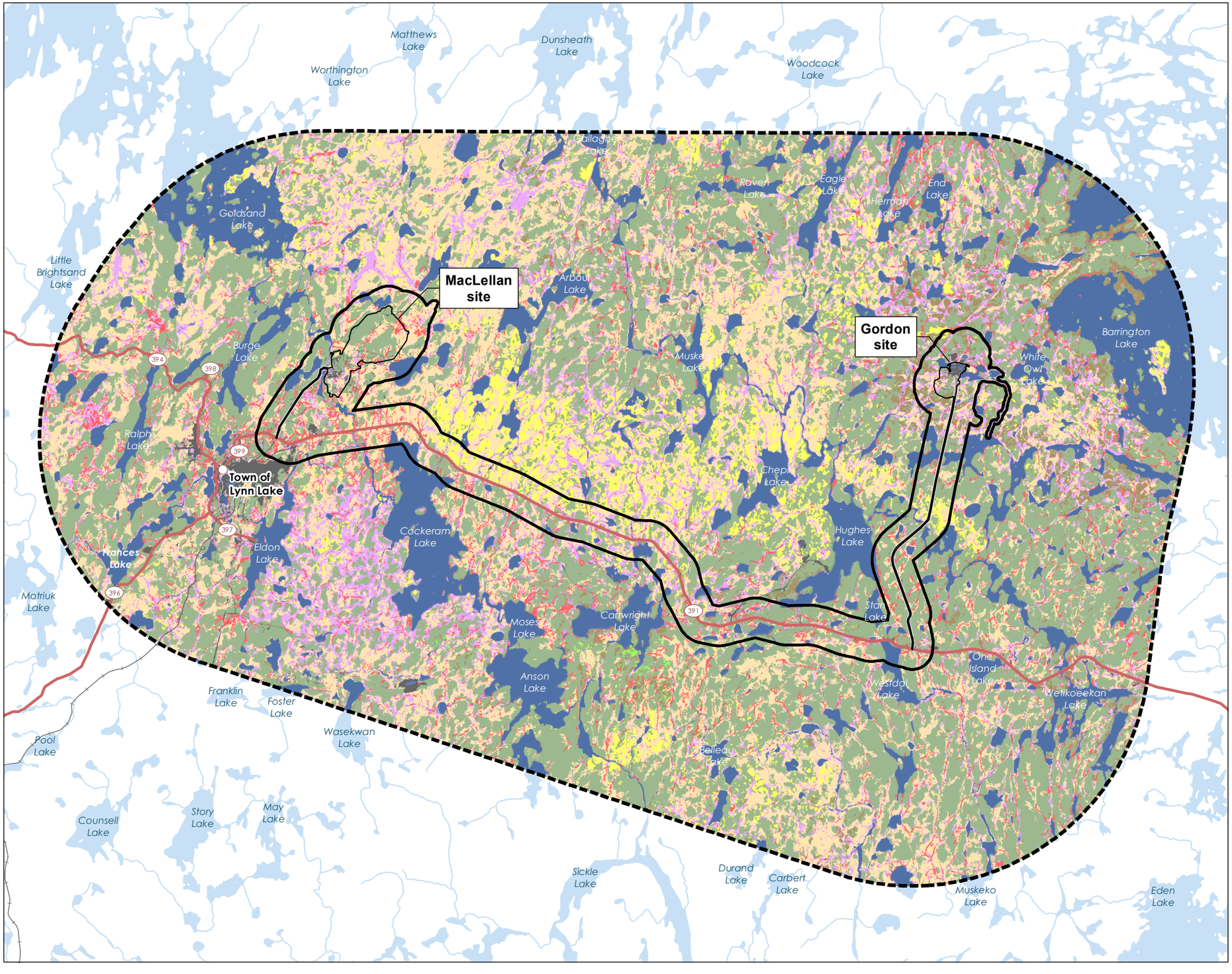
111473010

Map No.
2

Title
Swamps and Field-Verifed Watercourses - MacLellan site

G:_GIS_Project_Folders\111473008_ILGP_EA\workspaces\ACV\20200508_spring_watercourse_investigations\Map2_MacLellan_Swamps_and_FieldVerifiedWatercourses_20210923.mxd Revised: 2021-09-28 by ACampigotto

A.3 ATTACHMENT IAAC-151



Stantec

Project Infrastructure
- Project Development Area

Study Area
- Vegetation and Wetlands Local Assessment Area (LAA)
- Vegetation and Wetlands Regional Assessment Area (RAA)

Land Use/Land Cover

Native Upland
- Barren
- Coniferous
- Deciduous
- Mixedwood
- Shrubland

Wetland
- Bog
- Fen
- Marsh
- Swamp

Water
- Water

Anthropogenic
- Development

Landbase
- Highway
- Access Road
- Rail
- Watercourse
- Waterbody

N

0 2 4 Kilometres

(At original document size of 11x17)
1:200,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada
3. Land Use/Land Cover; Stantec 2017.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-06-01
Technical Review by NDeCarlo on 2021-06-01

Client/Project
111473008
ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.
IAAC-151-1

Title
Land Cover in the Regional Assessment Area

G:\...GIS Project Folder\111473008 (LGP EA\RAs\MC-CN-SK\Map IAAC-151-1 LandCover within Veg LAA RAA 20210601.mxd Revised: 2021-06-01 By: ACampigotto

Table IAAC-151-1 Plants of Interest to Indigenous Nations Identified During Engagement, Observed Abundance During Project Vegetation Surveys and Land Cover Class Where Found or Expected

Plants of Interest to Indigenous Nations	Scientific name of Potential Species in Manitoba	Species Recorded in RAA	Plant Conservation Status Rank (MBCDC 2018)	Number of Observations	Average Percent Cover	Min Percent Cover	Max Percent Cover	Standard Deviation of Percent Cover	Land Cover Class
Acorus calamus (sweet flag)/ muskrat root	*Acorus americanus*	-	S4S5	0	N/A	N/A	N/A	N/A	Swamp, Marsh, Water
bear root	*Hedysarum alpinum*	-	S4S5	0	N/A	N/A	N/A	N/A	Mixedwood, Development
beaver pineapple	*Matricaria discoidea*	-	SNA	0	N/A	N/A	N/A	N/A	Development
blueberries	*Vaccinium angustifolium, Vaccinium caespitosum, Vaccinium myrtilloides*	*Vaccinium myrtilloides*	S5	30	16.6	0.1	70	18.6	Conifer, Mixedwood, Shrubland, Bog
		Vaccinium uliginosum	S5	18	5.1	0.1	25	6.3	Conifer, Bog
birch	*Betula glandulosa, Betula neoalaskana, Betula occidentalis, Betula papyrifera, Betula pendula, Betula pumila*	*Betula glandulosa*	S5	21	9.2	0.1	30	10.4	Bog, Fen, Marsh, and Swamp
		Betula papyrifera	S5	23	6.7	0.1	25	7.3	Mixedwood, Deciduous
		Betula pumila	S5	3	25.3	1	45	18.3	Bog, Fen, Swamp
buffalo berries	*Shepherdia argentea, Shepherdia canadensis*	-	S3S4	0	N/A	N/A	N/A	N/A	Mixedwood, Deciduous, Shrubland
			S5	0	N/A	N/A	N/A	N/A	
chaga fungus	*Inonotus obliquus*	-	N/A	0	N/A	N/A	N/A	N/A	Mixedwood, Deciduous
choke cherries	*Prunus virginiana*	-	S5	0	N/A	N/A	N/A	N/A	Coniferous, Mixedwood, Deciduous
cloudberries	*Rubus chamaemorus*	*Rubus chamaemorus*	S5	19	3.2	0.1	20	5.7	Bog
cranberries	*Viburnum* species, *Vaccinium oxycoccos, Vaccinium vitis-idaea*	*Vaccinium oxycoccos*	S5	29	0.4	0.1	3	0.6	Bog, Swamp, and Fen
		Vaccinium vitis-idaea	S5	46	2.7	0.1	15	3.7	Bog, Mixedwood, Barren
		Viburnum edule	S5	1	0.1	0.1	0.1	0	Mixedwood, Deciduous, Shrubland
frog ears moss	*unknown*	-	N/A	0	N/A	N/A	N/A	N/A	-
green birch	*Alnus viridis, Alnus incana, Alnus viridis* ssp. *crispa, Alnus incana* ssp. *rugosa*	*Alnus viridis*	S5	15	15.5	1	50	15.1	Deciduous, Mixedwood, Shrubland
jack pine	*Pinus banksiana*	*Pinus banksiana*	S5	27	22.1	1	60	18.2	Conifer, Mixedwood
Labrador tea	Rhododendron groenlandicum	Rhododendron groenlandicum	S5	48	34.2	0.1	80	20.5	Bog, Swamp, Mixedwood
mint	Mentha canadensis, Mentha spicata	-	S5	0	N/A	N/A	N/A	N/A	Marsh
			SNA	0	N/A	N/A	N/A	N/A	
moss	*Dicranum groenlandicum, dicranum species, Pleurozium schreberi, Hylocomium splendens, Ptilium crista-castrensis, Tomentypnum nitens, sphagnum species, Sphagnum fuscum*	*Dicranum polysetum*	S4S5	38	0.3	0.1	1	0.4	Barren, Mixedwood, Conifer
		Dicranum polysetum	S4S5	38	0.3	0.1	1	0.4	Barren, Mixedwood, Conifer
		Pleurozium schreberi	S4S5	35	21	0.1	90	26.2	Conifer, Mixedwood, Deciduous
		Tomenthypnum nitens	S4S5	5	0.7	0.1	2	0.7	Fen, Swamp

Table IAAC-151-1 Plants of Interest to Indigenous Nations Identified During Engagement, Observed Abundance During Project Vegetation Surveys and Land Cover Class Where Found or Expected

Plants of Interest to Indigenous Nations	Scientific name of Potential Species in Manitoba	Species Recorded in RAA	Plant Conservation Status Rank (MBCDC 2018)	Number of Observations	Average Percent Cover	Min Percent Cover	Max Percent Cover	Standard Deviation of Percent Cover	Land Cover Class
		Hylocomium splendens	S4S5	13	10.3	0.1	70	18.8	Conifer, Mixedwood, Deciduous
		Ptilium crista-castrensis	S4S5	1	0.1	0.1	0.1	0	Conifer, Mixedwood, Deciduous
		Sphagnum fuscum	S4S5	20	26.4	0.1	80	24.8	Bog, Fen
		Sphagnum angustifolium	S4S5	23	14.6	0.1	70	19	Bog, Fen
		Sphagnum capillifolium	S4S5	4	6.8	1	20	7.8	Bog, Fen
		Sphagnum magellanicum	S4S5	9	8.1	0.1	40	11.8	Bog
		Sphagnum majus	SNR	1	0.1	0.1	0.1	0	Fen
		Sphagnum squarrosum	S4S5	10	7.9	0.1	20	7.5	Fen, Swamp
		Sphagnum teres	S4S5	2	0.1	0.1	0.1	0	Fen, Swamp
		Sphagnum warnstorfii	S4	9	4.2	0.1	10	4.3	Fen
pin cherries	*Prunus pensylvanica*	-	S5	0	N/A	N/A	N/A	N/A	Development, Mixedwood, Deciduous, Conifer
pineapple root	*Matricaria discoidea*	-	SNA	N/A	N/A	N/A	N/A	N/A	Development
pond lily	*Nuphar microphylla, Nuphar variegata, Nymphaea leibergii, Nymphaea loriana, Nymphaea odorata, Nymphaea tetragona**	*Nuphar variegata*	S5	2	0.1	0.1	0.1	0	Water
		*Nymphaea tetragona**	S2?	N/A	N/A	N/A	N/A	N/A	Water
poplar	*Populus alba, Populus balsamifera, Populus deltoides, Populus grandidentata, Populus tremuloides*	*Populus tremuloides*	S5	7	3.5	0.1	15	5	Mixedwood, Deciduous
raspberries	*Rubus species, Rubus arcticus, Rubus idaeus, Rubus pubescens*	*Rubus arcticus*	S5	8	0.3	0.1	1	0.4	Bog, Fen, Swamp
		Rubus idaeus	S5	1	1	1	1	0	Conifer, Mixedwood, Deciduous, Shrubland, Development
rat root	*Acorus americanus*	-	S4S5	0	N/A	N/A	N/A	N/A	Swamp, Marsh
saskatoon	*Amelanchier alnifolia*	-	S5	0	N/A	N/A	N/A	N/A	Conifer, Mixedwood, Deciduous
seneca root	*Polygala senega*		S4	0	N/A	N/A	N/A	N/A	Mixedwood, Barren, Development
spruce	*Picea glauca, Picea mariana*	*Picea mariana*	S5	53	36.2	0.1	105	25.9	Bog, Swamp, Conifer, Mixedwood
strawberries	*Fragaria vesca, Fragaria virginiana*	*Fragaria virginiana*	S5	1	1	1	1	0	Mixedwood, Deciduous, Development
true tinder fungus	*Inonotus obliquus*	-	N/A	0	N/A	N/A	N/A	N/A	Mixedwood, Deciduous
wild carrot	*Daucus carota*	-	SNA	0	N/A	N/A	N/A	N/A	Development
willows	*Salix species*	*Salix* species	N/A	33	13.7	0.1	66	16.2	Shrubland, Fen, Swamp, Mixedwood, Deciduous
		*Salix arbusculoides**	S2S3	4	16.3	3	40	14.4	Conifer, Mixedwood, Shrublands, Bog, Fen, Swamp
		Salix bebbiana	S5	6	8.2	0.1	20	8.5	Conifer, Mixedwood, Shrublands, Bog, Fen, Swamp, Development

Table IAAC-151-1 Plants of Interest to Indigenous Nations Identified During Engagement, Observed Abundance During Project Vegetation Surveys and Land Cover Class Where Found or Expected

Plants of Interest to Indigenous Nations	Scientific name of Potential Species in Manitoba	Species Recorded in RAA	Plant Conservation Status Rank (MBCDC 2018)	Number of Observations	Average Percent Cover	Min Percent Cover	Max Percent Cover	Standard Deviation of Percent Cover	Land Cover Class
		Salix candida	S5	2	5	5	5	0	Conifer, Mixedwood, Shrublands, Fen, Swamp, Developed
		Salix discolor	S5	3	9.3	1	20	7.9	Conifer, Mixedwood, Shrublands, Fen, Swamp
		Salix lutea	N/A	1	5	5	5	0	Mixedwood, Shrublands, Swamp
willows	*Salix species*	*Salix maccalliana*	S4	15	11.6	0.1	45	12.4	Marsh, Bog, Fen, Swamp
		Salix myrtillifolia	S5	9	2.7	0.1	10	3.2	Conifer, Bog, Fen, Swamp
		Salix pedicellaris	S5	4	4.3	1	10	3.7	Bog, Fen, Swamp
		Salix planifolia	S5	3	7.3	2	15	5.6	Mixedwood, Conifer, Bog, Fen
		Salix pseudomonticola	S4S5	1	5	5	5	0	Conifer, Mixedwood, Deciduous, Bog, Fen, Swamp, Shrubland
		Salix pyrifolia	S4S5	1	0.1	0.1	0.1	0	Bog, Fen, Swamp
		Salix scouleriana	S4	4	11.5	0.1	40	16.5	Conifer, Mixedwood, Bog, Swamp, Developed

NOTE:
Berry picking, medicinal plants, and variety of herbs were also mentioned by Indigenous Nations, but insufficient information was available to identify plant species.
- species not recorded in the RAA.
* species is a SOCC.
N/A data not available.
Landcover types determined using Johnson et al. (2017) and Flora of North America (2020).

A.4 ATTACHMENT IAAC-159

Table IAAC-159-1 Monitoring Activities, as Outlined in Conceptual Soil Management and Remediation Plan for the Project

Potential Effects	Measurable Parameters and Monitoring Methods
Soil Monitoring During the Construction Phase	
Change in baseline soils	Monitor topsoil and peat salvage activities for proper depths and separation.
Change in soil quality – land capability and reclamation suitability	Monitor soil quality by collecting and analyzing soil samples of salvaged soil.
Change in soil quality – soil compaction and rutting risk	Monitor salvage of soil during non-frozen soils conditions in wet areas (e.g., Organic and Cryosolic soils) for susceptibility to compaction and rutting under heavy loads.
	Monitor for excessively wet soil conditions to determine the need to temporarily halt construction and limit rutting and compaction on soil salvage and stockpile areas, using the following indicators as a guide: • Rutting of topsoil to the extent that mixing of soil horizons may occur; • Excessive wheel slip; • Excessive build-up of mud on tires and cleats; • Formation of puddles; or, • Excessive tracking of mud on to roads as vehicles leave the soil salvage or stockpile areas
	Monitor salvage operations to confirm that multiple passes over the same area by machinery are limited.
Change in soil quantity –water and wind erosion risk	Monitor the footprint of area cleared versus area available for soil salvage.
	Monitor soil and sediment controls as outlined in the Erosion and Sediment Control Plan.
	Monitor soil salvage operation to determine if activities should temporarily cease for coarse textured soils if conditions are prone to soil wind erosion.
	Monitor fugitive dust controls (See Air Quality Monitoring Plan).
Change in soil quality – admixing	Monitor topsoil stripping operations.
Change in soil quality – soil contamination	Monitor soils for possible soil contamination during excavation of developed lands.
	Monitor fueling and maintenance of equipment activities and effectiveness of spill response plan.
Soil Monitoring During the Operation Phase	
Change in soil quality – land capability and reclamation suitability	The operation phase at the Gordon and MacLellan Mine site PDAs will follow the same monitoring as described for the construction phase.
	Monitor for opportunities for progressive reclamation that can include direct replacement of salvaged soil on areas available for reclamation.
Change in soil quality – soil compaction and rutting risk	Monitor weather conditions and observations of rutting or compaction to determine if a temporary halt on soil handling operations during excessive wet soil conditions is necessary.
Change in soil quantity – water and wind erosion risk	Monitor erosion control on exposed soils as outlined in the Vegetation and Weed Management Plan and Erosion and Sediment Control Plan.

Table IAAC-159-1 Monitoring Activities, as Outlined in Conceptual Soil Management and Remediation Plan for the Project

Potential Effects	Measurable Parameters and Monitoring Methods
Change in soil quality – admixing	Document soil stockpiles and monitor unintentional disturbance to topsoil or peat stockpiles.
	Monitor soil handling to limit to unnecessary transport and excess handling.
Change in soil quality – soil contamination	Monitor for equipment refueling and maintenance activities where these activities are prohibited.
	Monitor and document effectiveness of spill response measures.
	Sample surface water and groundwater as outlined in the Erosion and Sediment Control Plan and the Groundwater Management and Monitoring Plan.
Soil Monitoring During The Decommissioning/Closure Phase	
Change in soil quality – land capability and reclamation suitability	Monitor and document restoration efforts including the re-establishment of final grades and drainage patterns.
	Sample soil replaced at final site reclamation to verify cover soil quality for land capability and reclamation suitability
Change in soil quality – soil compaction and rutting risk	Inspect and document areas where the overburden needs to be chisel ploughed because of suspected compaction issues prior to topsoil and/or peat replacement.
	Monitor soil replacement activities so as to limit repeated vehicle and equipment travel on the same site.
Change in soil quantity – water and wind erosion risk	Monitor weather conditions to determine if a cease to soil placement during windy or wet weather soil moisture conditions is necessary
	Monitor erosion control measures as outlined in the Erosion and Sediment Control Plan
	Monitor grading efforts at final soil replacement on slopes
Change in soil quality – admixing	Monitor soil replacement activities to limit admixing
Change in soil quality – soil contamination	Monitor and document final clean-up and reclamation of a contaminated site following an assessment of soil conditions.
	Monitor and document overburden/cover soil replacement depths Project components that have a potential risk for ARD/ML.
	Monitor effectiveness of capping depths at as a mitigation for ARD/ML contamination
	Monitor effectiveness of winter placement of overburden capping and cover soil on TMF
	Monitor mitigation controls for migration of material with ARD/ML potential to the soil as outlined in the Groundwater Management and Monitoring Plan.

Table IAAC-159-2 Monitoring Schedule, as Outlined in Conceptual Soil Management and Remediation Plan for the Project

Monitoring Activity	Construction	Operation	Decommissioning/ Closure	Post- Closure
Soil quality sampling and analyses of soils for land capability and reclamation suitability	Ongoing – Assess Soil Quality during soil salvage	Ongoing – Assess Soil Quality during soil salvage and storage activities	Ongoing – Assess to soils quality	Every 5 years until the revegetation goal has been reached
Monitor/document change in soil quality – compaction and rutting	Ongoing – Assess during soil salvage activities	Ongoing – Assess during soil salvage and storage activities	Ongoing – Assess during soil replacement activities	Every 5 years until the revegetation goal has been reached
Monitor/document change in soil quantity – wind and water erosion	Ongoing – Assess during soil salvage activities	Ongoing – Assess during soil salvage activities Periodic Assessment of Erosion from Soil Stockpiles	Ongoing during soil replacement activities	Annually until reclamation is complete and then reduced to every 5 years until the revegetation goal has been reached
Monitor/document change in soil quality – admixing	Ongoing – Assess during soil salvage activities	Ongoing – Assess during soil salvage and storage activities	Ongoing during soil replacement activities	Annually until reclamation is complete and then reduced to every 5 years until the revegetation goal has been reached
Soil quantity sampling and analyses of soil contamination	Ongoing – Assess during soil salvage activities Periodic Assessment to identify soil condition and plan remediation	Ongoing – Assess during soil salvage activities Periodic Assessment to identify soil condition and plan remediation	Ongoing during soil replacement activities Periodic Assessment to identify soil condition and plan remediation	Annually until reclamation is complete and then reduced to every 5 years until the revegetation goal has been reached at Permanent Closure

Table IAAC-159-3 Monitoring Thresholds for Revegetated Areas, as Outlined in Conceptual Vegetation and Weed Management Plan for the Project

Attribute/ Measurable Parameter	Time Period			
	Year 1*	Year 2	Year 3	Year 5
Erosion/Soil Movement	Some evidence of soil movement, but flow patterns are short and shallow	Some evidence of soil movement, but flow patterns are short and shallow	No sign of soil movement	No sign of soil movement
Litter Quality	N/A	Accumulation present	Clear evidence of accumulation, including standing dead and fallen material	Clear evidence of accumulation and decomposition, including standing dead and variably decomposed fallen material
Litter Quantity	N/A	N/A	Litter somewhat patchy to uniform across site (including leaf litter, needle litter, and woody debris)	Litter more or less uniform across site (including leaf litter, needle litter, and woody debris)
Plant Cover	≥25%[2]	≥30%	≥35%	≥40% and greater than or equal to cover observed in year three
Plant Diversity	≥90% of seeded species are present	Seeded plants are the dominant cover Non-native perennial plants occupy ≤5% of total cover	Seeded plant abundance is within 25% of species cover in seed mix Non-native perennial plants occupy ≤5% of total cover	All dominant and indicator plants of corresponding early to mid-seral native community are present. More than one community structural layer is present (e.g., forbs, prostrate and low shrubs). Percent cover of all species is at or below natural levels and unlikely to abnormally dominate the site and reduce diversity to less than the number of species in seed mix. Non-native plants occupy ≤5% of total cover.
Plant Vigour	≤25% of plants are wilted or have signs of disease[1]	≤20% of plants are wilted or have signs of disease	≤15% of plants are wilted or have signs of disease	No signs of poor plant health or disease (e.g., wilted leaves, necrosis, infected seed heads)

Table IAAC-159-3 Monitoring Thresholds for Revegetated Areas, as Outlined in Conceptual Vegetation and Weed Management Plan for the Project

Attribute/ Measurable Parameter	Time Period			
	Year 1*	Year 2	Year 3	Year 5
Weed Abundance	No Tier 1 non-native invasive species present. Tier 2 regulated weed abundance similar to surrounding undisturbed area or less than 15%. Annual/Tier 3 regulated weed/non-native plant abundance not interfering with desired plant development (i.e., not out shading plants).	No Tier 1 non-native invasive species present. Tier 2 regulated weed abundance similar to surrounding undisturbed area or less than 10%. Annual/Tier 3 regulated weed abundance/distribution ≤ few patches and sporadically occurring plants.	No Tier 1 non-native invasive species present. Tier 2 regulated weed abundance similar to surrounding undisturbed area or less than 5%. Annual/Tier 3 regulated weed abundance/distribution ≤ few patches and sporadically occurring plants.	No Tier 1 non-native invasive species present. Tier 2 weed abundance similar to surrounding undisturbed area or less than 5%. Annual/Tier 3 regulated weed abundance/distribution ≤ few sporadically occurring plants.

Note:

* Initial monitoring phase conducted following at least one full growing season after completion of site revegetation.

[1] If area is seeded.

[2] Assessed in late summer. Areas selected for reseeding if percent cover target not achieved.

Table IAAC-159-4 Monitoring Schedule, as Outlined in Conceptual Vegetation and Weed Management Plan for the Project

Monitoring Activity	Frequency			
	Construction	Operation	Decommissioning	Closure/Post- Closure
Revegetation Areas	Ongoing, if applicable	Annually until rehabilitation is complete and then reduced to every 5 years	Post-revegetation	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached
Sensitive features (i.e., known SOCC locations)	Ongoing	Annually until rehabilitation is complete and then reduced to every 5 years	Post-revegetation	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached
Weed Infestations	Ongoing	Annually during the active growing season	Prior to decommissioning and post-revegetation	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached
Wetlands	Ongoing/as needed (when construction is within/adjacent to wetlands)	Annually, after spring melt and runoff (mid-to late-summer)	Annually	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached
MRSAs	n/a	Annually	Annually	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached
Soil Stockpiles	Ongoing	Annually during the active growing season	Prior to decommissioning and post-revegetation	Annually until rehabilitation is complete and then reduced to every 5 years until the revegetation goal has been reached

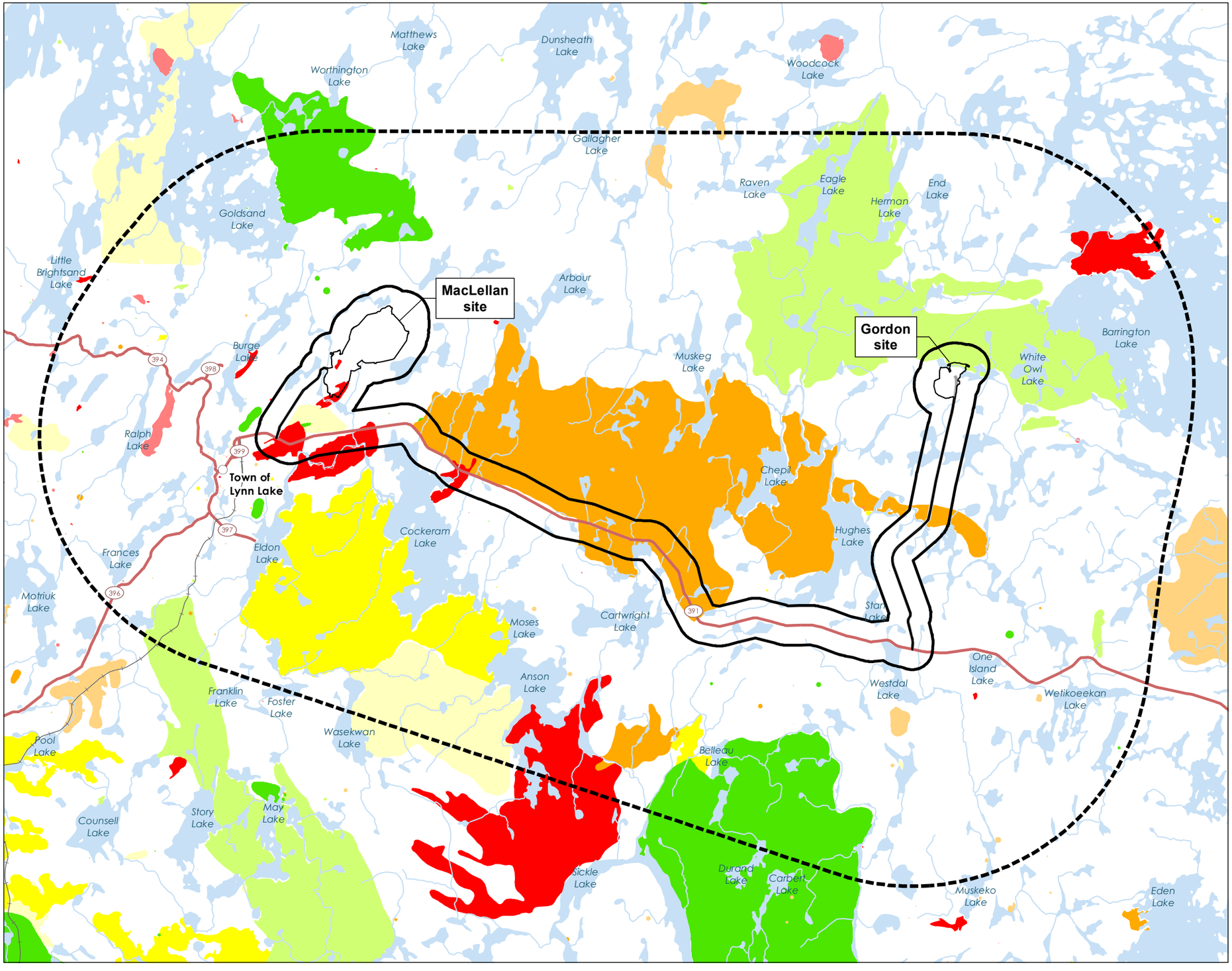
A.5 ATTACHMENT IAAC-160

Table IAAC-160-1 Species Identified in Traditional Land and Resource Use Studies as being Important to Indigenous Nations

Wildlife Group	Species Assemblage	Common Name	Scientific Name	Indigenous Nation[1]		Focal species[2]
				MMF	MCFN	
Mammals	Large Mammals	Moose	*Alces alces*	✓	✓	✓
		Woodland caribou	*Rangifer tarandus caribou*		✓	✓
		Caribou	unspecified		✓	
		Deer	unspecified		✓	
		Black bear	*Ursus americanus*	✓	✓	✓
		Wolf	*Canis lupus*	✓	✓	✓
	Furbearers	Wolverine	*Gulo gulo*	✓	✓	✓
		Red fox	*Vulpes vulpes*	✓	✓	
		Canada lynx	*Lynx canadensis*	✓	✓	
		American marten	*Martes americana*	✓	✓	✓
		Mink	*Neovison vison*	✓	✓	
		Weasel	unspecified		✓	
		Rabbit	unspecified		✓	
		Beaver	*Castor canadensis*	✓	✓	
		Muskrat	*Ondatra zibethicus*	✓	✓	
		River otter	*Lontra canadensis*	✓	✓	
Birds	Migratory Birds	Ducks	unspecified		✓	✓
		Geese	unspecified	✓	✓	✓
		Swan	unspecified		✓	✓
	Other Birds	Grouse	unspecified	✓	✓	✓
		Chickens	unspecified	✓	✓	✓
		Spruce grouse	*Falcipennis canadensis*		✓	✓
		Willow ptarmigan	*Lagopus lagopus*		✓	✓

NOTES
[1] Manitoba Metis Federation (MMF; SVS 2020) and Marcel Colomb First Nation (MCFN; Stantec 2018). A '✓' indicates species was identified as being important to participant(s).
[2] Species formally included as a focal species in the Wildlife and Wildlife Habitat VC assessment (see Volume 2, Chapter 12.0, Table 12-1).

A.6 ATTACHMENT IAAC-162



Stantec

Project Infrastructure
- Project Development Area

Study Area
- Wildlife and Wildlife Habitat Local Assessment Area (LAA)
- Wildlife and Wildlife Habitat Regional Assessment Area (RAA)

Manitoba Fires (1980 - 2019)
- 1980 - 1984
- 1985 - 1989
- 1990 - 1994
- 1995 - 1999
- 2000 - 2004
- 2005 - 2009
- 2010 - 2014
- 2015 - 2019

Landbase
- Highway
- Access Road
- Rail
- Watercourse
- Waterbody

N

0 2 4 Kilometres

(At original document size of 11x17)
1:200,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada
3. Land Use/Land Cover; Stantec 2017.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-03-01
Technical Review by DRouthier on 2021-03-01

Client/Project
111473012
ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.
IAAC-162-1

Title
Fire occurence within the Wildlife and Wildlife Habitat RAA between 1980-2019

G:\...GIS Project Folder\111473009_ILGP_EA\IRA\Wildlife Fires\Mxd_IAAC-162-1_Fire_Occurrence_1980_to_2019_20210929.mxd Revised: 2021-09-29 by ACampigotto

Table IAAC-162-1 Forest Fire Occurrence within the Regional Assessment Area between 1980-2019

Forest Fire History in the RAA			40 Years Post-fire Habitat Availability for Woodland Caribou[1]	
Year of Fire	Area Burned (ha)	Percent of RAA Burned (%)[2]	Year	Project Phase[1,3]
1980	0.0	0.0	2020	Pre-construction (4,231.5 ha)
1981	4,231.5	2.4	2021	
1982	0.0	0.0	2022	Construction (10.5 ha)
1983	10.5	< 0.1	2023	
1984	0.0	0.0	2024	Operation (28,837.1 ha)
1985	2.9	< 0.1	2025	
1986	5.5	< 0.1	2026	
1987	7,144.5	4.1	2027	
1988	1.0	< 0.1	2028	
1989	416.5	0.2	2029	
1990	130.2	0.1	2030	
1991	0.5	< 0.1	2031	
1992	2.3	< 0.1	2032	
1993	12,800.0	7.3	2033	
1994	618.5	0.4	2034	
1995	7,713.7	4.4	2035	
1996	1.5	< 0.1	2036	
1997	111.3	0.1	2037	Decommissioning/ Closure (318.1 ha)
1998	56.2	< 0.1	2038	
1999	9.2	< 0.1	2039	
2020	0.0	0.0	2040	
2001	139.2	0.1	2041	
2002	2.3	< 0.1	2042	
2003	121.2	0.1	2043	Post-closure (16,720.6 ha)
2004	180.1	0.1	2044	
2005	704.8	0.4	2045	
2006	8.3	< 0.1	2046	
2007	15,465.9	8.8	2047	
2008	9.1	< 0.1	2048	
2009	0.0	0.0	2049	
2010	213.7	0.1	2050	
2011	0.1	< 0.1	2051	
2012	17.5	< 0.1	2052	
2013	1.6	< 0.1	2053	
2014	0.5	< 0.1	2054	Post-Project Completion (3,582.5 ha)
2015	1.1	< 0.1	2055	
2016	11.8	< 0.1	2056	
2017	783.0	0.4	2057	

Table IAAC-162-1 Forest Fire Occurrence within the Regional Assessment Area between 1980-2019

Forest Fire History in the RAA			40 Years Post-fire Habitat Availability for Woodland Caribou[1]	
Year of Fire	**Area Burned (ha)**	**Percent of RAA Burned (%)[2]**	**Year**	**Project Phase[1,3]**
2018	1,584.5	0.9	2058	
2019	1,200.0	0.7	2059	
Grand Total	53,700.4	30.4	34 years	53,700.4 ha

NOTES

[1] Habitat 40 years post-fire becomes habitat for woodland caribou (Environment and Climate Change Canada 2020).

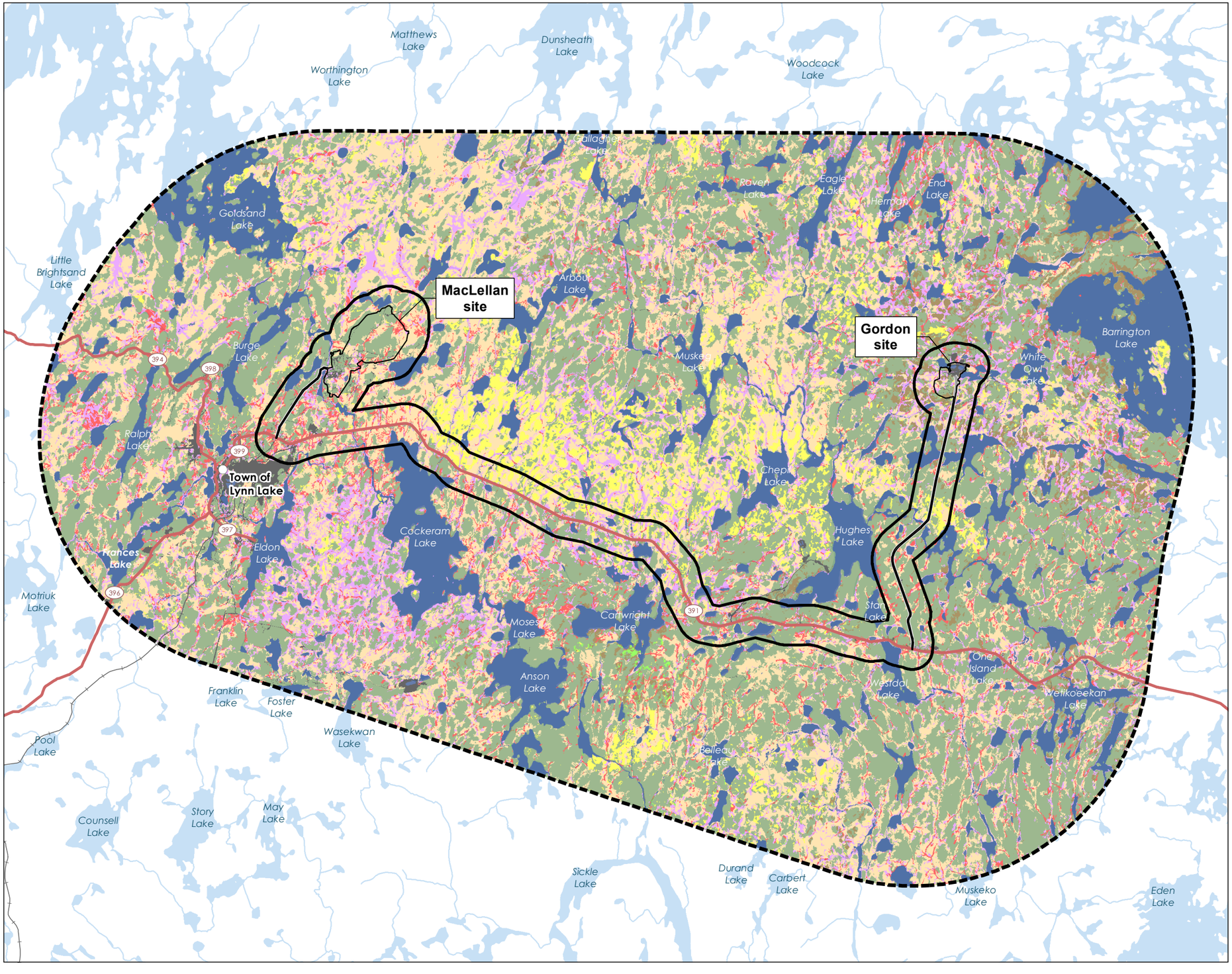
[2] The RAA is 176,378.8 ha.

[3] The total amount of burned habitat reaching 40 years of age is summed for each Project phase. Conservatively using the temporal boundaries for the MacLellan site that has a longer operation phase than the Gordon site (i.e., 13 years versus 6 years; Volume 2, Chapter 12, Section 12.1.4.2). Construction start date uncertain but assumed to be 2022 for the purposes of this response.

REFERENCES

Environment and Climate Change Canada. 2020. Amended Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. xiii + 143pp.

A.7 ATTACHMENT IAAC-163



Stantec

Project Infrastructure
- Project Development Area

Study Area
- Wildlife and Wildlife Habitat Local Assessment Area (LAA)
- Wildlife and Wildlife Habitat Regional Assessment Area (RAA)

Land Use/Land Cover

Upland
- Barren
- Coniferous
- Deciduous
- Mixedwood
- Shrubland

Wetland
- Bog
- Fen
- Marsh
- Swamp

Water
- Water

Anthropogenic
- Development

Landbase
- Highway
- Access Road
- Rail
- Watercourse
- Waterbody

N

0 2 4 Kilometres

(At original document size of 11x17)
1:200,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada
3. Land Use/Land Cover; Stantec 2017.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-05-21
Technical Review by DRouthier on 2021-05-21

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473012

Map No.
IAAC-163-1

Title
Land Cover in the Regional Assessment Area

G:\...GIS Project Folder\111473098 - LGP EA\MXD\IAAC-163-1 LandCoverRAA.MXD - IAAC-163-1 LandCover RAA 20210629.mxd - Revised: 2021-06-29 by ACampigotto

Table IAAC-163-1 Existing Condition of the PDA, LAA, and RAA and the Residual Change in Wildlife Habitat in the LAA and RAA

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Upland[1]	Barren	Naturally unvegetated (i.e., rock outcrop, beaches)	0.0 (0.0%)	0.0 (0.0%)	0.9 (<0.1%)	0.0 (0.0%)	0.9 (0.0%)
	Conifer Dense	>60% crown closure, with ≥75% coniferous tree cover	238.6 (20.6%)	2,933.9 (20.2%)	29,040.1 (16.5%)	2,695.3 (-8.1%)	28,801.5 (-0.8%)
	Conifer Open	26-60% crown closure, with ≥75% coniferous tree cover	185.0 (16%.0)	1,573.3 (10.8%)	18,512.5 (10.5%)	1,388.3 (-11.8%)	18,327.5 (-1.0%)
	Conifer Sparse	10-25% crown closure, with ≥75% coniferous tree cover	122.2 (10.6%)	1,164.0 (8.0%)	2,1814.9 (12.4%)	1,041.8 (-10.5%)	2,1692.7 (-0.6%)
	Deciduous	>75% deciduous tree cover	0.0 (0.0%)	0.0 (0.0%)	155.1 (0.1%)	0.0 (0.0%)	155.1 (< 0.1%)
	Mixedwood Dense	>60% crown closure, with neither coniferous nor deciduous trees comprising ≥75% total tree cover	40.0 (3.5%)	340.8 (2.3%)	2,969.7 (1.7%)	300.8 (-11.7%)	2,929.7 (-1.3%)
	Mixedwood Open	26-60% crown closure, with neither coniferous or deciduous trees comprising ≥75% total tree cover	2.5 (0.2%)	63.6 (0.4%)	1,317.3 (0.7%)	61.1 (-3.9%)	1,314.8 (-0.2%)
	Shrubland	≥20% shrub cover	7.9 (0.7%)	643.2 (4.4%)	6,778.6 (3.8%)	635.3 (-1.2%)	6,770.7 (-0.1%)
		Upland Subtotal[3]	**596.2 (51.5%)**	**6,718.8 (46.2%)**	**80,589.1 (45.7%)**	**6,122.6 (-8.9%)**	**79,992.9 (-0.7%)**

Table IAAC-163-1 Existing Condition of the PDA, LAA, and RAA and the Residual Change in Wildlife Habitat in the LAA and RAA

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Wetland[2]	Bog Shrubby	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% shrub cover and tree cover that is ≤25%	50.6 (4.4%)	826.3 (5.7%)	13,266.9 (7.5%)	775.7 (-6.1%)	13,216.3 (-0.4%)
	Bog Treed	Isolated from surface or groundwater influence with >40 cm peat accumulation, > 25% tree cover by coniferous species	189.7 (16.4%)	2,607.3 (17.9%)	28,979.8 (16.4%)	2,417.6 (-7.3%)	28,790.1 (-0.7%)
	Fen Graminoid	Connected to surface or groundwater with >40 cm peat accumulation, ≤25% shrub and tree cover	4.5 (0.4%)	31.9 (0.2%)	532.0 (0.3%)	27.4 (-14%)	527.5 (-0.8%)
	Fen Patterned	Connected to surface or groundwater with a pattern of strings and flarks	5.1 (0.4%)	220.2 (1.5%)	442.7 (0.3%)	215.1 (-2.3%)	437.6 (-1.2%)
	Fen Shrubby	Connected to surface or groundwater with >40 cm peat accumulation, >25% shrub and ≤25% tree cover	63.2 (5.5%)	1,052.5 (7.2%)	12,553.8 (7.1%)	989.3 (-6%)	12,490.6 (-0.5%)
	Fen Treed	Connected to surface or groundwater with >40 cm peat accumulation, >25% tree cover	14.9 (1.3%)	220.2 (1.5%)	2,809.9 (1.6%)	205.3 (-6.7%)	2,795.0 (-0.5%)
	Marsh	<40 cm peat accumulation with <25% shrub and tree cover	0.0 (0.0%)	15.5 (0.1%)	383.6 (0.2%)	15.5 (< 0.1%)	383.6 (< 0.1%)
	Swamp Shrubby	<40 cm peat accumulation with >25% shrub cover and ≤25% tree cover	10.9 (0.9%)	105.1 (0.7%)	1,168.4 (0.7%)	94.2 (-10.4%)	1,157.5 (-0.9%)
	Swamp Treed	<40 cm peat accumulation with >25% tree cover	62.2 (5.4%)	1,012.1 (7.0%)	6,603.2 (3.7%)	949.9 (-6.1%)	6541 (-0.9%)
		Wetland Subtotal[3]	**400.9 (34.6%)**	**6,091.1 (41.9%)**	**6,6740.3 (37.8%)**	**5,690.2 (-6.6%)**	**66,339.4 (-0.6%)**

Table IAAC-163-1 Existing Condition of the PDA, LAA, and RAA and the Residual Change in Wildlife Habitat in the LAA and RAA

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Water	Water	Lakes, rivers, or streams	17.5 (1.5%)	1,238.3 (8.5%)	27,480.8 (15.6%)	1,220.8 (-1.4%)	27,463.3 (-0.1%)
Water Subtotal[3]			**17.5 (1.5%)**	**1,238.3 (8.5%)**	**27,480.8 (15.6%)**	**1,220.8 (-1.4%)**	**27,463.3 (-0.1%)**
Natural Land Cover Subtotal[4]			**1014.7 (87.6%)**	**14,532.5 (96.7)**	**174,810.2 (99.1%)**	**13,033.5 (-10.3%)**	**173,795.5 (- 0.6%)**
Anthropogenic	Development	Disturbed land, settlements, roads, industrial development	142.3 (12.3%)	484.3 (3.3%)	1,568.7 (0.9%)	1,499.0 (209.5%)	2583.4 (64.7%)
Anthropogenic Subtotal[3]			**142.3 (12.3%)**	**484.3 (3.3%)**	**1568.7 (0.9%)**	**1,499.0 (209.5%)**	**2583.4 (64.7%)**
Project Grand Total[3]			1,157.0 (100.0%)	14,532.5 (100.0%)	176,378.9 (100.0%)	14,532.5 (0.0%)	176,378.9 (0.0%)

[1] Canadian Forest Service 2003
[2] Halsey et al. 1997, AESRD 2015
[3] Represent actual totals and may differ from land cover sums due to rounding.
[4] Includes upland, wetland, and water landscape types.

Table IAAC-163-2 Recommended Setback Distances and Restricted Activity Periods for the Lynn Lake Gold Project (DRAFT)

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	Scientific Name			Low	Medium	High
Mammals						
Black bear[a]	*Ursus americanus*	Active den	Year round	150	150	150
Little brown myotis[b,c]	*Myotis lucifugus*	Roost	May 1 – August 31	100	500	500
Northern myotis[b,c]	*Myotis septentrionalis*	Roost	May 1 – August 31	100	500	500
Bat cave[d]	-	Cave	Year round	200	200	200
Wolverine[e]	*Gulo gulo*	Den	Year round	100	250	500
Mineral lick[a]	-	Mineral lick	Year round	120	120	120
Denning species (e.g., red fox, gray wolf, American marten, fisher, least weasel)[c]	-	Active den	Year round	50	50	50
Birds						
American white pelican	*Pelecanus erythrorhynchos*	Nesting colony	April 1 - August 31	500	750	1000
Bald eagle	*Haliaeetus leucocephalus*	Active or traditional nest site	March 15 - July 15	250	500	1000
Bank swallow	*Riparia riparia*	Nesting colony	May 15 - July 31	50	150	300
Barn swallow	*Hirundo rustica*	Nest site	May 15 - Sept. 30	50	100	100
Boreal Owl	*Aegolius funereus*	Nest Site	March 1 - July 15	250	500	1000
Canada warbler	*Cardellina canadensis*	Nest site	May 1 - July 31	200	300	450
Common nighthawk	*Chordeiles minor*	Nest site	May 1 - August 31	100	200	300
Double-crested cormorant	*Phalacrocorax auritus*	Nesting colony	April 1 - August 31	400	500	750
Great gray owl	*Strix nebulosa*	Active or traditional nest site	Feb. 15 - July 15	250	500	1000
Grebes	-	Nesting colony	May 15 - July 15	100	200	400

Table IAAC-163-2 Recommended Setback Distances and Restricted Activity Periods for the Lynn Lake Gold Project (DRAFT)

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	**Scientific Name**			**Low**	**Medium**	**High**
Gulls/terns	-	Nesting colony	May 1 - July 15	400	500	750
Herons	-	Nesting colony	April 1 - August 31	400	500	750
Horned grebe	*Podiceps auratus*	Nest site	May 1 - Sept. 15	100	200	400
Northern hawk owl	*Surnia ulula*	Nest site	Feb. 15 - July 15	250	500	1000
Osprey[a]	*Pandion haliaetus*	Nest site	August 1 to March 31	500	1000	1000
Olive-sided flycatcher	*Contopus cooperi*	Nest site	May 1 - August 31	50	150	300
Rusty blackbird	*Euphagus carolinus*	Nest site	May 1 - July 31	50	150	300
Sharp-tailed grouse[3]	*Tympanuchus phasianellus*	Lek	Mar 15 - May 15	200	500	1000
Short-eared owl	*Asio flammeus*	Nest site	April 15 - Sept. 15	200	300	500
Trumpeter swan	*Cygnus buccinator*	Nest site	April 1 - July 31	500	750	1000
Yellow rail	*Coturnicops noveboracensis*	Nest site	May 1 - July 15	100	150	300
Amphibians						
Northern leopard frog[b]	*Lithobates pipiens*	Hibernaculum and breeding habitat	Year round	10	200	500

[1] - Recommended setback distances and restricted activity periods are derived from Manitoba Conservation Data Centre's Recommended Development Setback Distances from Birds document (MB CDC 2015) unless otherwise specified (see a to e below)

[a] - Manitoba Hydro's Manitoba-Minnesota Transmission Project Construction Environmental Protection Plan

[b] - Saskatchewan Ministry of Environment's Saskatchewan Activity Restriction Guidelines for Sensitive Species (SK MOE 2017)

[c] - Core maternity roost period for bats as defined by Fenton and Barclay (1980) and Barclay (1982 and 1984)

[d] - Manitoba's Forest Management Guidelines for Terrestrial Buffers (Government of Manitoba 2017)

[e] - Environment Canada's Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region (Environment Canada 2009)

[2] - Low: foot traffic, occasional/infrequent/short-term small vehicle (<1 ton) or ATV use; Medium: trucks>1 ton, regular/frequent/long-term small vehicle (<1 ton) or ATV use; High: road, distribution line, or outlet channel construction, forest harvest, rock crushing, asphalt batching, quarry or gravel pit operation

[3] - Low disturbance category considered as foot traffic only, all other activities (i.e., occasional/infrequent/short-term small vehicle (<1 ton) or ATV use considered Medium disturbance).

Table IAAC-163-3 Summary of Mitigation Measures for Migratory Birds[1], Species at Risk, and Species of Cultural Importance[2]

Species Group	Mitigation Measure
Migratory Birds[1]	• Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report to the Wildlife and Fisheries Branch of the Department of Agriculture and Resource Development (DARD) for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of site to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020).

Table IAAC-163-3 Summary of Mitigation Measures for Migratory Birds[1], Species at Risk, and Species of Cultural Importance[2]

Species Group	Mitigation Measure
	• Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Alamos will undertake pre-constructions surveys for raptor nests.
Species at Risk	• Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine on occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou (*Rangifer tarandus caribou*) calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30.

Table IAAC-163-3 Summary of Mitigation Measures for Migratory Birds[1], Species at Risk, and Species of Cultural Importance[2]

Species Group	Mitigation Measure
	• Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering, install amphibian exclusion screens on intake pumps. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report to the Wildlife and Fisheries Branch of DARD for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations.

Table IAAC-163-3 Summary of Mitigation Measures for Migratory Birds[1], Species at Risk, and Species of Cultural Importance[2]

Species Group	Mitigation Measure
	• Alamos will undertake pre-constructions surveys for bat hibernacula. • Alamos will continue the remote camera survey to share the results with provincial wildlife authorities (e.g., for woodland caribou and wolverine).
Culturally Important Species[2]	• Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2. Report to the Wildlife and Fisheries Branch of DARD for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD.

Table IAAC-163-3 Summary of Mitigation Measures for Migratory Birds[1], Species at Risk, and Species of Cultural Importance[2]

Species Group	Mitigation Measure
	• Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Alamos will undertake pre-constructions surveys for raptor nests. • Alamos will continue the remote camera survey (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and share the results with provincial wildlife authorities. • Alamos will monitor beaver activity to help manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk.

[1] The assessment of Project effects on birds considered both migratory (i.e., those protected under the *Migratory Birds Convention Act* that provide ecological and cultural value [e.g., songbirds] and subsistence value to resource users and Indigenous community members [e.g., ducks and geese]) and non-migratory (species not protected un the *Migratory Birds Convention Act* that are present in the RAA year-round that provide ecological and cultural value [e.g., eagles, owls, ravens] and subsistence value to resource users and Indigenous community members [e.g., grouse and ptarmigan]) bird species. A complete list of bird species is available in Chapter 12, Appendix N of the Environmental Impact Statement.

[2] Includes migratory (ducks, geese, and swans) and non-migratory (grouse, chickens, spruce grouse [*Falcipennis canadensis*], and willow ptarmigan [*Lagopus lagopus*]) birds as reported in the Project-specific Traditional Land and Resource Use reports prepared by Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020). Also, see response to IAAC-160.

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Construction			
Site Preparation at Both Sites (removal of existing buildings; removal of contaminated materials; vegetation clearing and earthworks; development of temporary construction camp at the MacLellan site)	✓	✓	**Gordon Site** Construction of the Gordon site Project Development Area (PDA) will result in the direct loss or alteration of 269 ha of habitat within the Local Assessment Area (LAA), a decrease of 2% from baseline conditions within the LAA (includes expansion of the storage/stockpiling of ore, overburden, and mine rock areas during the operation phase). Vegetation clearing and water development and control will result in a direct loss of 119 ha (44%) of upland terrestrial habitats, 65 ha (24%) of wetland habitats, and 13 ha (5%) of open water habitats and alteration of 72 ha (27%) of developed lands. Species that occupy disturbed and rocky habitats, such as common nighthawk (*Chordeiles minor*), are most likely to be affected by the alteration of developed lands. An indirect loss or alteration of wildlife habitat is expected through sensory disturbance, edge effects, and altered wetland function that can result in habitat avoidance and reduced habitat effectiveness for wildlife, including birds and SAR and SOCC, in areas adjacent to the PDA. Sensory disturbance (i.e., noise and artificial light) emitted during construction is expected to cease immediately following the conclusion of construction activities. Baseline noise estimates ranged from 35-41 decibels (dBA) in the regional assessment area (RAA; Chapter 7 of the Environmental Impact Statement [EIS]) and noise-related effects to wildlife have the potential to occur beyond 40 dBA. The distance at which the mean volume of construction activities attenuates around the site to 40 DBA is approximately 1 km (Chapter 7 of the EIS) and therefore contained within the wildlife and wildlife habitat LAA. Increased traffic volumes associated with the Project may increase the existing level of indirect effects to wildlife (i.e., avoidance) along PR 391 and the Gordon site access road, but effects are not expected to extend far beyond the PDA. Edge effects are anticipated to be minor because the Gordon site is an existing site with existing edge effects (albeit effects may have been lessened over time due to vegetation regrowth), but expansion of the PDA will add to this existing disturbance. Additionally, the Project will not result in increased habitat fragmentation as core areas of large patches will not be lost. Dewatering of the existing pits will be controlled and directed into both Gordon and Farley lakes to reduce potential effects to Farley Creek. However, an indirect change in riparian habitat may extend beyond the LAA along Farley Creek, but habitats downstream of the creek will remain unaffected (i.e., Swede Lake, Ellystan Lake; Chapter 9 of the EIS). Riparian habitats and terrestrial and wetlands habitats adjacent to Gordon Lake, Farley Lake, and Farley Creek are likely to be temporarily altered (i.e., flooded), which could affect the vegetation community and habitat for species such as olive-sided flycatcher (*Contopus cooperi*) and rusty blackbird (*Euphagus carolinus*) and duck and waterbird species (e.g., common loon [*Gavia immer*]). Residual effects to migratory and non-migratory birds and their habitats have incorporated year-round potential effects, including during the primary nesting and migration periods for birds. Direct and indirect loss or alteration of upland and wetland habitats, described above, is most likely to affect migratory bird species commonly observed breeding in the RAA, included ruby-crowned kinglet (*Regulus calendula*), Tennessee warbler (*Leiothlypis peregrina*), and swamp sparrow (*Melospiza georgiana*). Other commonly observed, non-migratory bird species likely to be affected include spruce grouse (*Falcipennis canadensis*), willow ptarmigan (*Lagopus lagopus*), common raven (*Corvus corax*), and gray jay (*Perisoreus canadensis*). Upland and wetland habitats are widely available throughout the RAA. Construction of the Gordon site PDA will result in the direct loss or alteration of 117 ha of habitat within the LAA for common nighthawk, a decrease of 2% from baseline conditions within the LAA (5,560 ha). Analysis of habitat mapping suggests that breeding habitat for the species is relatively
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	–	–	

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Mine Components at Both Sites (construction of: ore pads; ore, overburden and mine rock storage areas; mill feed storage area and crushing plant, ore milling and processing plant, and tailings management facility (TMF) at the MacLellan site; water management facilities [e.g., sumps, ponds and ditches])	–	–	abundant in the RAA (89,250 ha), which corresponds with the determination in the existing conditions that the species is relatively common within the RAA. Construction of the Gordon site PDA will result in the direct loss or alteration of 122 ha of habitat within the LAA for olive-sided flycatcher, a decrease of 1% from baseline conditions within the LAA (8,181 ha). Analysis of habitat mapping indicates olive-sided flycatcher breeding habitat is relatively abundant in the RAA (123,021 ha), which corresponds with the determination in the existing conditions that the species is relatively common within the RAA. Habitat losses for olive-sided flycatcher are expected to be less than 248 ha because despite the species inhabiting open and edge habitats, a portion of the 122 ha is already subject to disturbance (e.g., edge effects). Construction of the Gordon site PDA will result in the direct loss or alteration of 105 ha of habitat within the LAA for rusty blackbird, a decrease of 1% from baseline conditions within the LAA (7,690 ha). Analysis of habitat mapping suggests that breeding habitat for the species is relatively abundant in the RAA (113,177 ha); however, the species is relatively uncommon within the RAA. Therefore, the residual effects of direct and indirect habitat loss are expected to be minor. The absence of anthropogenic structures at the Gordon site precludes the possibility that barn swallow (*Hirundo rustica*) will be negatively affected by construction of the Gordon site. Additionally, baseline surveys did not detect barn swallows nesting under bridges along the existing access road and PR 391, but the bridges will remain unaffected by Project construction. Construction of site infrastructure (e.g., buildings) may create opportunities for breeding barn swallows or other bird species (e.g., cliff swallow [*Petrochelidon pyrrhonota*]). **MacLellan Site** Construction of the MacLellan site PDA will result in the loss or alteration of 938 ha of habitat within the LAA, a decrease of 11% from baseline conditions within the LAA; however, 72 ha (8%) is existing development (includes expansion of the storage/stockpiling of ore, overburden, and mine rock and tailings management facility [TMF] areas during the operation phase). Vegetation clearing and water development and control will result in a direct loss of 490 ha (51%) of terrestrial habitats, 372 ha (40%) of wetland habitats, and 4 ha (<1%) of open water habitats (notably East Pond). Most of the undeveloped PDA, however, is subject to some existing indirect effects of development, primarily for mineral exploration trails and cut lines north of the historical mine site. Species that occupy disturbed and rocky habitats, such as common nighthawk, are most likely to be affected by the alteration of developed habitats, whereas migratory birds most likely to be affected following the loss of the terrestrial and wetland habitats. An indirect loss or alteration of wildlife habitat is expected through sensory disturbance, edge effects, and altered wetland function that can result in habitat avoidance and reduced habitat effectiveness for wildlife, including migratory birds, SAR and SOCC, moose, and furbearers in areas adjacent to the PDA. Sensory disturbance (i.e., noise and artificial light) emitted during construction is expected to cease immediately following the conclusion of construction activities but some chronic sensory disturbance will persist into the operation phase. Baseline noise estimates ranged from 35-41 dBA in the RAA (Chapter 7 of the EIS) and noise-related effects to wildlife have the potential to occur beyond 40 dBA (Shannon et al. 2016). The distance at which the mean volume of construction activities attenuates to 40 dBA is approximately 1 km (Chapter 7 of the EIS) and therefore contained within the wildlife and wildlife habitat LAA. Increased traffic volumes associated with the Project may increase the existing level of indirect effects to wildlife (i.e., avoidance) along the MacLellan site access road. Edge effects are anticipated to be minimal because the MacLellan site is an existing site with existing edge effects (albeit effects may have become ameliorated over time due to vegetation regrowth), but expansion of the PDA will add to this existing disturbance. Additionally, the Project will not result in increased habitat fragmentation as core areas of large patches will not be lost. Edge effects and fragmentation effects may be offset by the PDA eliminating existing effects associated with the network of existing trails in the PDA. An indirect change in habitat may occur as water levels rise in the tributary connecting East Pond and the Keewatin River, following indirect draw-down of East Pond. These effects will not extend beyond the LAA as the Keewatin River can
Utilities, Infrastructure, and Other Facilities at Both Sites (construction of: buildings and yards; access roads [i.e., upgrades at the Gordon and MacLellan site] and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling facilities)	–	–	

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Water Development and Control at Both Sites (dewatering of existing pits at the Gordon site and underground workings at the MacLellan site; re-alignment of existing diversion channel at Gordon site; interceptor wells at the Gordon site)	✓	✓	accept the increased flow. Riparian habitats and terrestrial and wetlands habitats adjacent to the tributary are likely to be temporarily altered (i.e., flooded), which could affect the vegetation community and habitat for species such as olive-sided flycatcher, rusty blackbird, and duck species. As with the Gordon site, residual effects to migratory and non-migratory birds and their habitats have incorporated year-round potential effects, including during the primary nesting and migration periods for birds. Direct and indirect loss or alteration of upland and wetland habitats, described above, is most likely to affect migratory bird species commonly observed breeding in the RAA, including ruby-crowned kinglet, Tennessee warbler, and swamp sparrow. Other commonly observed, non-migratory bird species likely to be affected include spruce grouse, willow ptarmigan, common raven, and gray jay. Upland and wetland habitats are widely available throughout the RAA. There is one known environmentally sensitive site (ESS), a bald eagle (*Haliaeetus leucocephalus*) nest, within the MacLellan site LAA (approximately 230 m south of the PDA along the Keewatin River) that may be adversely affected by construction activities. In 2019, the nest was inactive, with the most recent breeding activity observed in 2015. Construction of the MacLellan site PDA will result in the loss or alteration of 525 ha of habitat within the LAA for common nighthawk, a decrease of 27% from baseline conditions within the LAA (1,964 ha). Overall, the Project will result in the loss or alteration of 644 ha of habitat within the LAA for common nighthawk, a decrease of 9% from baseline conditions (7,288 ha). Analysis of habitat mapping suggests that breeding habitat for the species is relatively abundant in the RAA (89,250 ha), which corresponds with the determination in the existing conditions that the species is relatively common within the RAA. Effects resulting from direct habitat loss are expected to be offset by the Project creating disturbed sites that may become suitable for common nighthawk nests. Construction of the MacLellan site PDA will result in the loss or alteration of 713 ha of habitat within the LAA for olive-sided flycatcher, a decrease of 27% from baseline conditions within the LAA (2,628 ha). Overall, the Project will result in the loss or alteration of 961 ha of habitat within the LAA for olive-side-flycatcher, a decrease of 8% from baseline conditions (10,512 ha). Analysis of habitat mapping suggests that breeding habitat for the species is relatively abundant in the RAA (123,021 ha), which corresponds with the determination in the existing conditions that the species is relatively common within the RAA. Habitat losses for olive-sided flycatcher are expected to be less than 713 ha because despite the species inhabiting open and edge habitats, a portion of the 713 ha is already subject to disturbance (e.g., edge effects). Construction of the MacLellan site PDA will result in the loss or alteration of 622 ha of habitat within the LAA for rusty blackbird, a decrease of 25% from baseline conditions within the LAA (2,472 ha). Overall, the Project will result in the loss or alteration of 836 ha of habitat within the LAA for rusty blackbird, a decrease of 7% from baseline conditions (9,967 ha). Analysis of habitat mapping suggests that breeding habitat for the species is relatively abundant in the RAA (113,177 ha); however, the species is relatively uncommon within the RAA. Therefore, the residual effects of direct and indirect habitat loss are expected to be minor. The removal of anthropogenic structures at the MacLellan site that are known to provide nesting habitat for barn swallow may adversely affect the species. However, construction of site infrastructure (e.g., buildings) may create new opportunities for breeding barn swallows or other bird species (e.g., cliff swallow). **Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in habitat during construction are characterized by the following: • Direction is adverse: there will be a direct and indirect loss or alteration of wildlife habitat. • Magnitude is low: effects will result in a <10% and <5% change in wildlife habitat and SAR and SOCC habitat in the LAA, respectively. • Geographic extent is the RAA: indirect loss or alteration of habitat associated with noise may occasionally exceed the LAA and indirect effects associated with dewatering activities may exceed the LAA (i.e., Farley Creek). • Timing is high sensitivity: although clearing will occur in the winter, construction will likely occur through the year, including during sensitive periods for wildlife. • Frequency is single event: effects will occur once during the construction phase. • Duration is short-term: indirect effects will cease following the construction period (i.e., <2 years) but direct effects will persist into the decommissioning/closure phase. • Change is reversible: effects will cease following the construction phase. • Ecological context is disturbed to undisturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Emissions, Discharges, and Wastes[3]	✓	✓	
Employment and Expenditure[4]	–	–	

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Operation			
Open Pit Mining at Both Sites (drilling; blasting; removal, loading and on-site hauling of mined material [i.e., ore, overburden, and mine rock])	–	–	**Gordon Site** A direct loss of wildlife habitat is expected to occur through vegetation clearing during the expansion of the storage/stockpiling of ore, overburden, and mine rock areas and anticipated effects are described above in the construction phase. An indirect loss or alteration of wildlife habitat is expected through sensory disturbance that can result in habitat avoidance and reduced habitat effectiveness for wildlife in areas adjacent to the PDA, as described above during the construction phase. Chronic sensory disturbance from mining equipment and ore hauling and occasional blasting disturbance will terminate following completion of the operation phase (six years; Section 12.1.3). Baseline noise estimates ranged from 35-41 dBA in the RAA (Chapter 7 of the EIS) and noise-related effects to wildlife have the potential to occur beyond 40 dBA. The distance at which the mean volume of operational activities around the site attenuates to 40 dBA is approximately 1 km (Chapter 7 of the EIS) and therefore contained within the wildlife and wildlife habitat LAA. Increased traffic volumes associated with the Project may increase the existing level of indirect effects to wildlife (i.e., avoidance) along PR 391 and the Gordon site access road, but effects are not expected to extend far beyond the PDA. Some species may habituate to the chronic sensory disturbance near the site and those that inhabit the LAA adjacent to the site access road and PR 391 may be unaffected. It is difficult to quantify the adverse effects of indirect loss or alteration of wildlife habitat, but it is unlikely that the Project will have an appreciable long-term effect, including for common nighthawk, olive-sided flycatcher, rusty blackbird, or barn swallow. The Project is predominantly situated on previously developed lands and adjacent to existing sources of anthropogenic disturbance (e.g., PR 391) that have already compromised habitat effectiveness in the LAA. Noise and light abatement measures for machinery and buildings will be used to reduce sensory disturbance to wildlife, including migratory birds, within the LAA (Volume 5, Appendix B). The effects to wildlife resulting from sensory disturbance are expected to be similar as those described above during the construction phase and wildlife occupying the LAA are already subject to some degree of altered habitat effectiveness. Sensory disturbance from the Project will temporarily increase the degree of altered habitat effectiveness and some wildlife species may avoid the portions of the LAA or relocate to inhabit other areas of the RAA with an abundance of undisturbed habitats. Other species may become tolerant of the increased disturbance and the indirect loss or alteration of wildlife is expected to cease following the operation phase. **MacLellan Site** A direct loss of wildlife habitat is expected to occur through vegetation clearing during the expansion of the storage/stockpiling of ore, overburden, and mine rock and TMF areas and anticipated effects are described above in the construction phase. An indirect loss or alteration of wildlife habitat is expected through sensory disturbance that can result in habitat avoidance and reduced habitat effectiveness for wildlife, including migratory and non-migratory birds, in areas adjacent to the PDA, as described above for the Gordon site. Chronic sensory disturbance (i.e., noise, light) from mining equipment, ore hauling, and ore processing and occasional blasting disturbance will terminate following completion of the operation phase (13 years; Section 12.1.3). Baseline noise estimates ranged from 35-41 dBA in the RAA (Chapter 7 of the EIS) and noise-related effects to wildlife have the potential to occur beyond 40 dBA (Shannon et al. 2016). The distance at which the mean volume of operational activities around the site attenuates to 40 dBA is approximately 1 km (Chapter 7 of the EIS) and therefore contained within the wildlife and wildlife habitat LAA. Increased traffic volumes associated with the Project may increase the existing level of indirect effects to wildlife (i.e., avoidance) along the MacLellan site access road but effects are not expected to extend far beyond the PDA. Some species may habituate to the chronic sensory disturbance near the site and those that inhabit the LAA adjacent to the site access road may be unaffected. For the reasons described above for the Gordon site, the Project is unlikely to result in an appreciable long-term indirect loss or alteration of wildlife habitat, including for wolverine, woodland caribou, common nighthawk, olive-sided flycatcher, rusty blackbird, barn swallow, little brown myotis, or northern myotis. The MacLellan site is not anticipated to adversely affect woodland caribou during the operation phase as the effects are already assessed during the construction phase. The bald eagle nest within the MacLellan site LAA (approximately 230 m south of the PDA along the Keewatin River) may continue to be adversely affected by operation activities. However, given several years of inactivity and following two proposed years of construction, the nest may not be used in the future and effects may be negligible. **Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in habitat during operation are characterized by the following: • Direction is adverse: there will be an indirect loss or alteration of wildlife habitat. • Magnitude is low: effects will result in a <10% and <5% change in wildlife habitat and SAR and SOCC habitat in the LAA, respectively. • Geographic extent is the RAA: effects associated with noise may occasionally exceed the LAA.
Storage/Stockpiling of Ore, Overburden, and Mine Rock at Both Sites	✓	✓	
Ore Milling and Processing at the MacLellan Site (ore crushing and conveyance; ore milling)	–	–	
Water Management at Both Sites (mine water collection and storage; process water supply for the MacLellan site including water intake on Keewatin River at the MacLellan site; pumping fresh/fire water from Farley Lake at Gordon site; operation of interceptor wells at the Gordon site)	✓	✓	
Tailings Management at the MacLellan Site	✓	✓	
Utilities, Infrastructure, and Other Facilities at Both Sites (presence and operation of: buildings and yards; access roads and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling	–	–	

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
facilities; explosives storage, maintenance of access roads and bridges)			• Timing is high sensitivity: site operation will occur through the year, including during sensitive periods for wildlife. • Frequency is continuous: effects will occur throughout during operation. • Duration is medium-term: effects will occur during the operation period (i.e., six years). • Change is reversible: effects will cease following operations. • Ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Emissions, Discharges, and Wastes[3]	✓	✓	
Employment and Expenditure[4]	–	–	
Decommissioning/Closure			
Decommissioning at Both Sites	✓	✓	**Gordon Site** In general, potential Project-related environmental effects for a change in habitat, both direct and indirect, are positive during the decommissioning/closure phase. For example, a direct positive change in habitat will occur where water infilling and vegetation succession of the PDA provides increased habitat opportunities for wildlife. Similarly, sensory disturbances are expected to be greatly reduced and returned to baseline conditions during closure and, over time, edge effects will continue to be abated during active closure and post-closure as succession softens the unnatural transition between the PDA and adjacent habitat. Regenerating habitats in the site PDA will provide habitat opportunities for moose and migratory birds, including SAR and SOCC. Following decommissioning/closure, the site will be returned to a more suitable condition for wildlife when compared to baseline conditions and over time the habitat within the entire PDA will mature to be more consistent with habitats in the LAA. Decommissioning/closure of the Gordon site will benefit SAR and SOCC, including wolverine, woodland caribou, common nighthawk, olive-sided flycatcher, rusty-blackbird, little brown myotis, and northern myotis. The removal of mine infrastructure, however, may adversely affect species such as barn swallow that rely on anthropogenic structures for nesting sites. Overall, reclamation and closure of the site will benefit wildlife and wildlife habitat compared to baseline conditions. **MacLellan Site** In general, potential Project-related environmental effects for a change in habitat, both direct and indirect, are positive during the decommissioning/closure phase. For example, a direct positive change in habitat will occur where water infilling and vegetation succession of the PDA provides increased habitat opportunities for wildlife. Similarly, sensory disturbances are expected to be greatly reduced and returned to baseline conditions during decommissioning/closure and, over time, edge effects will continue to be abated during active closure and post-closure as succession softens the unnatural transition between the PDA and adjacent habitat. Regenerating habitats in the site PDA will provide habitat opportunities for moose and migratory birds, including SAR and SOCC. Following decommissioning/closure, the existing mine development will be returned to a more suitable condition for wildlife when compared to baseline conditions and over time the habitat within the entire PDA will mature to be more consistent with habitats in the LAA. Decommissioning/closure of the MacLellan site will benefit SAR and SOCC, including wolverine, woodland caribou, common nighthawk, olive-sided flycatcher, rusty-blackbird, little brown myotis and northern myotis. The removal of mine infrastructure, however, may adversely affect species such as barn swallow that rely on anthropogenic structures for nesting sites. Overall, decommissioning/closure of the site will benefit wildlife and wildlife habitat compared to baseline conditions.
Reclamation at Both Sites	✓	✓	
Post-Closure at Both Sites (long-term monitoring)	✓	✓	
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	–	–	

Table IAAC-163-4 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Habitat

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Emissions, Discharges and Wastes[3]	✓	✓	**Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in habitat during decommissioning/closure are characterized by the following: • Direction is adverse and positive: decommissioning may affect some species reliant on anthropogenic structure (e.g., barn swallow) but there will be a long-term benefit to wildlife and wildlife habitat following reclamation and closure of the Gordon site. • Magnitude is low: effects will result in a <10% and <5% change in wildlife habitat and SAR and SOCC habitat in the LAA, respectively. • Geographic extent is the RAA: direct and indirect effects will no longer exceed the LAA. • Timing is high sensitivity: site decommissioning/closure will occur through the year, including during sensitive periods for wildlife, however the level of activity is unlikely to disturb wildlife. • Frequency is continuous: effects will occur throughout the decommissioning/closure phase. • Duration is long-term: effects will occur during the decommissioning/closure phase. • Change is reversible: effects will cease following the decommissioning/closure phase. • Ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Employment and Expenditure[4]	–	–	

NOTES:

✓ = Potential interaction

– = No interaction

[1] The assessment of Project effects on birds considered both migratory (i.e., those protected under the *Migratory Birds Convention Act* that provide ecological and cultural value [e.g., songbirds] and subsistence value to resource users and Indigenous community members [e.g., ducks and geese]) and non-migratory (species not protected un the *Migratory Birds Convention Act* that are present in the RAA year-round that provide ecological and cultural value [e.g., eagles, owls, ravens] and subsistence value to resource users and Indigenous community members [e.g., grouse and ptarmigan]) bird species. A complete list of bird species is available in Chapter 12, Appendix N of the Environmental Impact Statement.

[2] Includes migratory (ducks, geese, and swans) and non-migratory (grouse, chickens, spruce grouse [*Falcipennis canadensis*], and willow ptarmigan [*Lagopus lagopus*]) birds as reported in the Project-specific Traditional Land and Resource Use reports prepared by Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020). Also, see response to IAAC-160.

[3] Emissions, Discharges, and Wastes (e.g., air, waste, noise, light, liquid and solid effluents) are generated by many Project activities. Rather than acknowledging this by placing a check mark against each of these activities, “Emissions, Discharges and Wastes” have been introduced as an additional component under each Project phase.

[4] Project employment and expenditures are generated by most Project activities and components and are the main drivers of many socio-economic effects. Rather than acknowledging this by placing a check mark against each of these activities, “Employment and Expenditures” have been introduced as an additional component under each Project phase.

Table IAAC-163-5 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Mortality Risk

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Construction			
Site Preparation at Both Sites (removal of existing buildings; removal of contaminated materials; vegetation clearing and earthworks; development of temporary construction camp at the MacLellan site)	✓	✓	**Gordon Site** Site preparation, including vegetation clearing and earthworks, is expected to take approximately two years to complete. Site preparation and construction will implement mitigation measures that consider timing restrictions for wildlife species, including sensitive breeding periods for migratory birds, bats, and amphibians. Construction will be scheduled to begin outside the primary nesting period for migratory birds (Zone C7; May 7 to August 7; ECCC 2019b); however, if vegetation removal is required within the primary nesting period, pre-construction avian use surveys (territorial, breeding behavior) and nest searches will be completed to limit mortality risk during construction by identifying, avoiding or otherwise mitigating effects on active nests. During construction, there is potential for increased mortality risk to young birds due to their limited mobility (e.g., crushed by construction equipment). Vehicle-related wildlife mortality has the potential to affect a wider range of species, including migratory birds and SAR/SOCC. Vehicles will abide by posted speed limits and multi-passenger vehicles will be used, where practical, to reduce the potential for wildlife-vehicle collisions. Proper management of wastes, including at temporary camps, will reduce the potential for wildlife to be attracted to the construction site (e.g., common raven), thus reducing the potential for mortality risk related to human-wildlife conflict. SAR and SOCC are not uniquely susceptible to a change in mortality risk during the construction phase in comparison to other species. Implementing mitigation measures and adhering to timing restrictions and/or MB CDC (2014) activity restriction setback buffers will reduce the potential Project effects on SAR and SOCC. Common nighthawk is the species most likely to be affected as they can nest in disturbed habitats and are present within the LAA. Mitigation measures and adherence to timing restrictions and/or activity restriction buffers for clearing and construction will reduce the potential Project effects on migratory birds breeding in the LAA. **MacLellan Site** While the MacLellan site has a higher amount of existing infrastructure that needs to be removed (potentially affecting barn swallow) and constructed (e.g., ore processing plant), the Project pathways for change in mortality risk and proposed mitigation are similar for both sites during all Project phases. The main difference is the TMF at the MacLellan site that has the potential to increase wildlife mortality risk via drowning and the power distribution line has the potential to increase wildlife mortality risk, primarily for migratory birds, via electrocution or line strikes. These small differences will not change the characterization of effects for a change in mortality risk; the assessment of the residual effects for the Project is the same for both sites and as described above. **Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in mortality risk during construction are characterized by the following: • Direction is adverse: risks will be reduced; however, an increase in wildlife mortality risk is anticipated. • Magnitude is low: effects will not result in a measurable change in the abundance of wildlife, including for migratory birds and SAR and SOCC, in the LAA. • Geographic extent is the LAA: effects from site preparation and human-wildlife interaction will be confined to the PDA but traffic mortality risk will extend to the LAA (i.e., along the road). • Timing is high sensitivity: although clearing will occur in the winter, construction will likely occur through the year, including during sensitive periods for wildlife. • Frequency is multiple irregular events: effects will occur at no set schedule throughout the construction phase. • Duration is short-term: effects will occur during the construction period (i.e., < two years). • Change is reversible: effects will cease following the construction phase.
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	✓	✓	
Mine Components at Both Sites (construction of: ore pads; ore, overburden and mine rock storage areas; mill feed storage area and crushing plant, ore milling and processing plant, and tailings management facility (TMF) at the MacLellan site; water management facilities [e.g., sumps, ponds and ditches])	–	–	
Utilities, Infrastructure, and Other Facilities at Both Sites (construction of: buildings and yards; access roads [i.e., upgrades at the Gordon and MacLellan site] and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling facilities)	–	–	
Water Development and Control at Both Sites (dewatering of existing pits at the Gordon site and underground workings at the MacLellan site; re-alignment of existing diversion channel at Gordon site; interceptor wells at the Gordon site)	✓	✓	
Emissions, Discharges, and Wastes[3]	–	–	
Employment and Expenditure[4]	–	–	

Table IAAC-163-5 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Mortality Risk

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
			• Ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Operation			
Open Pit Mining at Both Sites (drilling; blasting; removal, loading and on-site hauling of mined material [i.e., ore, overburden, and mine rock])	–	–	**Gordon Site** Mortality associated with Project-related transportation is the primary pathway for wildlife mortality to occur during operation, by transportation of ore to on-site stockpiles and to the ore processing plant at the MacLellan site (estimated at seven trucks per hour; Chapter 2, Section 2.3.1.1), and other Project-related traffic. The reported mortality risk to different wildlife groups vary (Huijser et al. 2009) but birds are one of the most at-risk species groups (Seiler 2003, Ford and Fahrig 2007). Current traffic levels on PR 391 are estimated at approximately 150 vehicles per day (MI 2017). Project-related transportation will increase levels to approximately 400 vehicles per day between the sites (based on seven trucks per hour for 20 hours/day [return trip], plus passenger vehicle and material transport traffic). Using the average of 0.23 wildlife collisions per MVKT in the LAA, 1.5 reportable wildlife collisions per year would be expected for large mammals during operations. Vehicle collisions with smaller species are much more difficult to predict and may be as high as 32 birds per year on PR 391. While this estimate does not include mortality associated with the access road or on-site traffic, the risk may be reduced with the adoption of Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.15 of the EIS) and reduced speed limits in some sensitive areas (e.g., adjacent to wetlands). Increased mortality risk due to traffic is anticipated to be short-term as the Gordon site will only be operational for six years. With mitigation, cyanide levels in the TMF will be maintained below guidelines and in adherence to the standard of practice to protect the environment including wildlife (e.g., migratory birds) from exposure to toxic tailings. As such, mortality risk to wildlife is not expected to change as a result of the TMF. SAR and SOCC are not uniquely susceptible to a change in mortality risk during the operation phase in comparison to other species. Following mitigation measures and adherence to timing restrictions and/or MB CDC (2015) activity restriction setback buffers will reduce the potential Project effects on SAR and SOCC. Mitigation measures for reducing vehicle speeds will reduce the potential Project effects on migratory birds breeding in the LAA. Species most likely to be affected are species that inhabit upland and wetland habitats adjacent to roadways (e.g., mallard [*Anas platyrhynchos*]). **MacLellan Site** See description in the construction phase above. **Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in mortality risk during operation are characterized by the following: • Direction is adverse: risks will be reduced; however, a net increase in wildlife fatalities is anticipated. • Magnitude is low: effects will not result in a measurable change in the abundance or distribution of wildlife, including for migratory birds and SAR and SOCC, in the LAA. • Geographic extent is the LAA: traffic-related mortality risk will extend to the LAA. • Frequency is multiple irregular events: effects will occur at no set schedule throughout operation. • Timing is high sensitivity: operation will occur through the year, including during sensitive periods for wildlife. • Duration is medium-term: effects will occur during the operation period (i.e., six years).
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA, including truck transportation of ore from the Gordon site to the MacLellan site)	✓	✓	
Storage/Stockpiling of Ore, Overburden, and Mine Rock at Both Sites	–	–	
Ore Milling and Processing at the MacLellan Site (ore crushing and conveyance; ore milling)	–	–	
Water Management at Both Sites (mine water collection and storage; process water supply for the MacLellan site including water intake on Keewatin River at the MacLellan site; pumping fresh/fire water from Farley Lake at Gordon site; operation of interceptor wells at the Gordon site)	–	–	
Tailings Management at the MacLellan Site	✓	✓	
Utilities, Infrastructure, and Other Facilities at Both Sites (presence and operation of: buildings and yards; access roads and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling facilities; explosives storage, maintenance of access roads and bridges)	✓	✓	
Emissions, Discharges, and Wastes[3]	–	–	
Employment and Expenditure[4]	–	–	

Table IAAC-163-5 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Mortality Risk

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
			• Change is reversible: effects will cease following operation. • Ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Decommissioning/Closure			
Decommissioning at Both Sites	–	–	**Gordon Site** Active closure activities are expected to have similar residual effects as those described above for the construction phase, albeit on a reduced scale. The decommissioning/closure phase and specifically the post-closure period are expected to have more enduring effects, primarily as it relates to the indirect mortality of wildlife resulting from increased access. Both predators such as wolves and humans use linear features (e.g., trails, cut lines) to increase hunting efficiency and gain access to prey species (e.g., James and Stuart-Smith 2000; Latham 2011; Dickie et al. 2016). The PDA will be a single anthropogenic disturbance but will not include a network of trails or cut lines extending into the LAA that can be used by predators and hunters to access further reaches of the LAA. Additionally, the Project will not create new access opportunities to watercourses that can then be used by hunters to access previously inaccessible portions of the LAA. Upland game birds and waterfowl are most likely to be affected by an increase in indirect mortality risk resulting from increased hunting. However, given the absence of linear features resulting from the Project, they are unlikely to alter their distribution to avoid the LAA beyond existing levels of anthropogenic avoidance. SAR and SOCC are not uniquely susceptible to a change in mortality risk during the decommissioning/closure phase in comparison to other species. Following mitigation measures and adherence to timing restrictions and/or MB CDC (2015) activity restriction setback buffers will reduce the potential Project effects on SAR and SOCC. Species such as common nighthawk and olive-sided flycatcher may benefit from open habitats and edges following reclamation. **MacLellan Site** See description in the construction phase above. **Characterization of Residual Effects** • Direction is adverse: there may be a net increase in wildlife fatalities. • Magnitude is low: a measurable change in the abundance or distribution of wildlife in the LAA is unlikely given the absence of trails and cut lines with the potential to be used by predators and hunters. • Geographic extent is the LAA: mortality risk will extend to the LAA. • Frequency is multiple irregular events: effects will occur at no set schedule throughout the decommissioning/closure phase. • Timing is high sensitivity: activities will occur through the year, including during sensitive periods for wildlife. • Duration is long-term: effects will occur throughout the decommissioning/closure phase. • Change is reversible: effects will cease following the decommissioning/closure phase. • Ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Reclamation at Both Sites	–	–	
Post-Closure at Both Sites (long-term monitoring)	✓	✓	
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	✓	✓	
Emissions, Discharges and Wastes[3]	–	–	
Employment and Expenditure[4]	–	–	

NOTES:
✓ = Potential interaction
– = No interaction
[1] The assessment of Project effects on birds considered both migratory (i.e., those protected under the *Migratory Birds Convention Act* that provide ecological and cultural value [e.g., songbirds] and subsistence value to resource users and Indigenous community members [e.g., ducks and geese]) and non-migratory (species not protected un the *Migratory Birds Convention Act* that are present in the RAA year-round that provide ecological and cultural value [e.g., eagles, owls, ravens] and subsistence value to resource users and Indigenous community members [e.g., grouse and ptarmigan]) bird species. A complete list of bird species is available in Chapter 12, Appendix N of the Environmental Impact Statement.

Table IAAC-163-5 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Mortality Risk

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	

[2] Includes migratory (ducks, geese, and swans) and non-migratory (grouse, chickens, spruce grouse [*Falcipennis canadensis*], and willow ptarmigan [*Lagopus lagopus*]) birds as reported in the Project-specific Traditional Land and Resource Use reports prepared by Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020). Also, see response to IAAC-160.

[3] Emissions, Discharges, and Wastes (e.g., air, waste, noise, light, liquid and solid effluents) are generated by many Project activities. Rather than acknowledging this by placing a check mark against each of these activities, “Emissions, Discharges and Wastes” have been introduced as an additional component under each Project phase.

[4] Project employment and expenditures are generated by most Project activities and components and are the main drivers of many socio-economic effects. Rather than acknowledging this by placing a check mark against each of these activities, “Employment and Expenditures” have been introduced as an additional component under each Project phase.

Table IAAC-163-6 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Wildlife Health

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Construction			The assessment of the potential change in wildlife health is based on the ecological risk assessment (ERA), which evaluates the potential for ecological receptors (i.e., birds) to experience adverse health effects as a result of exposure to chemical stressors (Chapter 5, Appendix H of the EIS). In the ERA, adverse effects refer to toxicologically induced changes in the health of ecological receptors resulting from exposure to chemicals of potential concern (COPC) released into the environment, specifically the LAA, as a result of Project-related activities over the lifetime of the Project. As a result, residual effects are not separated by Project phase. **Gordon and MacLellan Sites** Risk quotient (RQ) values higher than 1.0 were encountered for both the Baseline Case and the Future Case for several COPC for bird ecological receptors (Volume 5, Appendix H of the EIS); however, in most cases, the Project-related contribution to the RQ is negligible to low (generally less than 1%). Additionally, the model assumes that the species receptor spends 100% of the time in the area of high COPC concentrations which is unlikely to be true. Therefore, Project-related increases in health risks to mammal and bird ecological receptors at the Gordon site resulting from exposure to the COPC assessed is expected to be negligible to low. Bioaccumulation of COPC is not expected to occur as the Project is not expected to result in the emission of COPC in quantities that would bioaccumulate in the environment. For example, the predicted increase in selenium concentrations in soil at both the Gordon and MacLellan sites is 0.3%, which is a minor change and unlikely to affect vegetation or wildlife (Volume 5, Appendix H of the EIS). SAR and SOCC and migratory birds are not uniquely susceptible to a change in wildlife health during the construction, operation, and decommissioning/closure phases in comparison to other species. Therefore, SAR and SOCC can be expected to be subject to a similar level of effects as non-SAR and SOCC wildlife species. **Characterization of Residual Effects** Following the implementation of mitigation measures, residual effects for change in wildlife health during construction are characterized by the following: • Direction is adverse: there will be increased exposure to COPC. • Magnitude is negligible to low: effects will not result in a measurable change in the abundance or distribution of wildlife, including for migratory birds and SAR and SOCC, in the LAA. • Geographic extent is the LAA: effects of emissions, discharges, and wastes will be confined to the LAA. • Timing (i.e., seasonality and life stages) is applicable to the assessment of wildlife and wildlife habitat. • Frequency is continuous: effects will occur throughout the construction and operation phases. • Duration is long-term: effects will extend beyond the life of the Project but will cease following the decommissioning/closure phase. • Change is reversible: effects will cease following the decommissioning/closure phase. • The ecological context is disturbed: the LAA is relatively disturbed or adversely affected by human activity but the RAA contains large areas of habitat unaffected by human activity.
Site Preparation at Both Sites (removal of existing buildings; removal of contaminated materials; vegetation clearing and earthworks; development of temporary construction camp at the MacLellan site)	–	–	
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	–	–	
Mine Components at Both Sites (construction of: ore pads; ore, overburden and mine rock storage areas; mill feed storage area and crushing plant, ore milling and processing plant, and tailings management facility (TMF) at the MacLellan site; water management facilities [e.g., sumps, ponds and ditches])	–	–	
Utilities, Infrastructure, and Other Facilities at Both Sites (construction of: buildings and yards; access roads [i.e., upgrades at the Gordon and MacLellan site] and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling facilities)	–	–	
Water Development and Control at Both Sites (dewatering of existing pits at the Gordon site and underground workings at the MacLellan site; re-alignment of existing diversion channel at Gordon site; interceptor wells at the Gordon site)	–	–	
Emissions, Discharges, and Wastes[3]	✓	✓	
Employment and Expenditure[4]	–	–	
Operation			
Open Pit Mining at Both Sites (drilling; blasting; removal, loading and on-site hauling of mined material [i.e., ore, overburden, and mine rock])	–	–	
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA, including truck transportation of ore from the Gordon site to the MacLellan site)	–	–	
Storage/Stockpiling of Ore, Overburden, and Mine Rock at Both Sites	–	–	
Ore Milling and Processing at the MacLellan Site (ore crushing and conveyance; ore milling)	–	–	

Table IAAC-163-6 Potential Project-Environment Interactions with Birds and Bird Habitat for Change in Wildlife Health

Project Activities and Components	Project Interactions with Birds		Summary of Residual Effect
	Migratory Bird Species[1]	Culturally Important Species[2]	
Water Management at Both Sites (mine water collection and storage; process water supply for the MacLellan site including water intake on Keewatin River at the MacLellan site; pumping fresh/fire water from Farley Lake at Gordon site; operation of interceptor wells at the Gordon site)	✓	✓	
Tailings Management at the MacLellan Site	✓	✓	
Utilities, Infrastructure, and Other Facilities at Both Sites (presence and operation of: buildings and yards; access roads and internal mine roads; site lighting and security; power supply and distribution system; potable water treatment plant at the MacLellan site; on-site pipelines at the MacLellan site; fuel storage and distribution systems; sewage treatment facilities; domestic solid waste handling facilities; explosives storage, maintenance of access roads and bridges)	–	–	
Emissions, Discharges, and Wastes[3]	✓	✓	
Employment and Expenditure[4]	–	–	
Decommissioning/Closure			
Decommissioning at Both Sites	–	–	
Reclamation at Both Sites	–	–	
Post-Closure at Both Sites (long-term monitoring)	–	–	
Project-related Transportation within the LAA (movement of trucks, equipment, bulk materials, supplies, and personnel within the LAA)	–	–	
Emissions, Discharges and Wastes[3]	✓	✓	
Employment and Expenditure[4]	–	–	

NOTES:

✓ = Potential interaction

– = No interaction

[1] The assessment of Project effects on birds considered both migratory (i.e., those protected under the *Migratory Birds Convention Act* that provide ecological and cultural value [e.g., songbirds] and subsistence value to resource users and Indigenous community members [e.g., ducks and geese]) and non-migratory (species not protected un the *Migratory Birds Convention Act* that are present in the RAA year-round that provide ecological and cultural value [e.g., eagles, owls, ravens] and subsistence value to resource users and Indigenous community members [e.g., grouse and ptarmigan]) bird species. A complete list of bird species is available in Chapter 12, Appendix N of the Environmental Impact Statement.

[2] Includes migratory (ducks, geese, and swans) and non-migratory (grouse, chickens, spruce grouse [*Falcipennis canadensis*], and willow ptarmigan [*Lagopus lagopus*]) birds as reported in the Project-specific Traditional Land and Resource Use reports prepared by Marcel Colomb First Nation (the First Nation in closest proximity to the Project; Stantec 2018) and the Manitoba Metis Federation (SVS 2020). Also, see response to IAAC-160.

[3] Emissions, Discharges, and Wastes (e.g., air, waste, noise, light, liquid and solid effluents) are generated by many Project activities. Rather than acknowledging this by placing a check mark against each of these activities, “Emissions, Discharges and Wastes” have been introduced as an additional component under each Project phase.

[4] Project employment and expenditures are generated by most Project activities and components and are the main drivers of many socio-economic effects. Rather than acknowledging this by placing a check mark against each of these activities, “Employment and Expenditures” have been introduced as an additional component under each Project phase.

A.8 ATTACHMENT IAAC-164

Table IAAC-164-1 Recommended Setback Distances and Restricted Activity Periods for Species at Risk and Species of Conservation Concern for the Lynn Lake Gold Project

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	Scientific Name			Low	Medium	High
Mammals						
Little brown myotis[a,b]	*Myotis lucifugus*	Roost	May 1 – August 31	100	500	500
Northern myotis[a,b]	*Myotis septentrionalis*	Roost	May 1 – August 31	100	500	500
Bat cave[c]	-	Cave	Year round	200	200	200
Wolverine[d]	*Gulo gulo*	Den	Year round	100	250	500
Birds						
Bank swallow	*Riparia riparia*	Nesting colony	May 15 - July 31	50	150	300
Barn swallow	*Hirundo rustica*	Nest site	May 15 - Sept. 30	50	100	100
Boreal Owl	*Aegolius funereus*	Nest Site	March 1 - July 15	250	500	1000
Canada warbler	*Cardellina canadensis*	Nest site	May 1 - July 31	200	300	450
Common nighthawk	*Chordeiles minor*	Nest site	May 1 - August 31	100	200	300
Horned grebe	*Podiceps auratus*	Nest site	May 1 - Sept. 15	100	200	400
Olive-sided flycatcher	*Contopus cooperi*	Nest site	May 1 - August 31	50	150	300
Rusty blackbird	*Euphagus carolinus*	Nest site	May 1 - July 31	50	150	300
Short-eared owl	*Asio flammeus*	Nest site	April 15 - Sept. 15	200	300	500
Trumpeter swan	*Cygnus buccinator*	Nest site	April 1 - July 31	500	750	1000
Yellow rail	*Coturnicops noveboracensis*	Nest site	May 1 - July 15	100	150	300
Amphibians						
Northern leopard frog[a]	*Lithobates pipiens*	Hibernaculum and breeding habitat	Year round	10	200	500

[1] - Recommended setback distances and restricted activity periods are derived from Manitoba Conservation Data Centre's Recommended Development Setback Distances from Birds document (MB CDC 2015) unless otherwise specified (see a to d below)

[a] - Saskatchewan Ministry of Environment's Saskatchewan Activity Restriction Guidelines for Sensitive Species (SK MOE 2017)

[b] - Core maternity roost period for bats as defined by Fenton and Barclay (1980) and Barclay (1982 and 1984)

Table IAAC-164-1 Recommended Setback Distances and Restricted Activity Periods for Species at Risk and Species of Conservation Concern for the Lynn Lake Gold Project

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	Scientific Name			Low	Medium	High

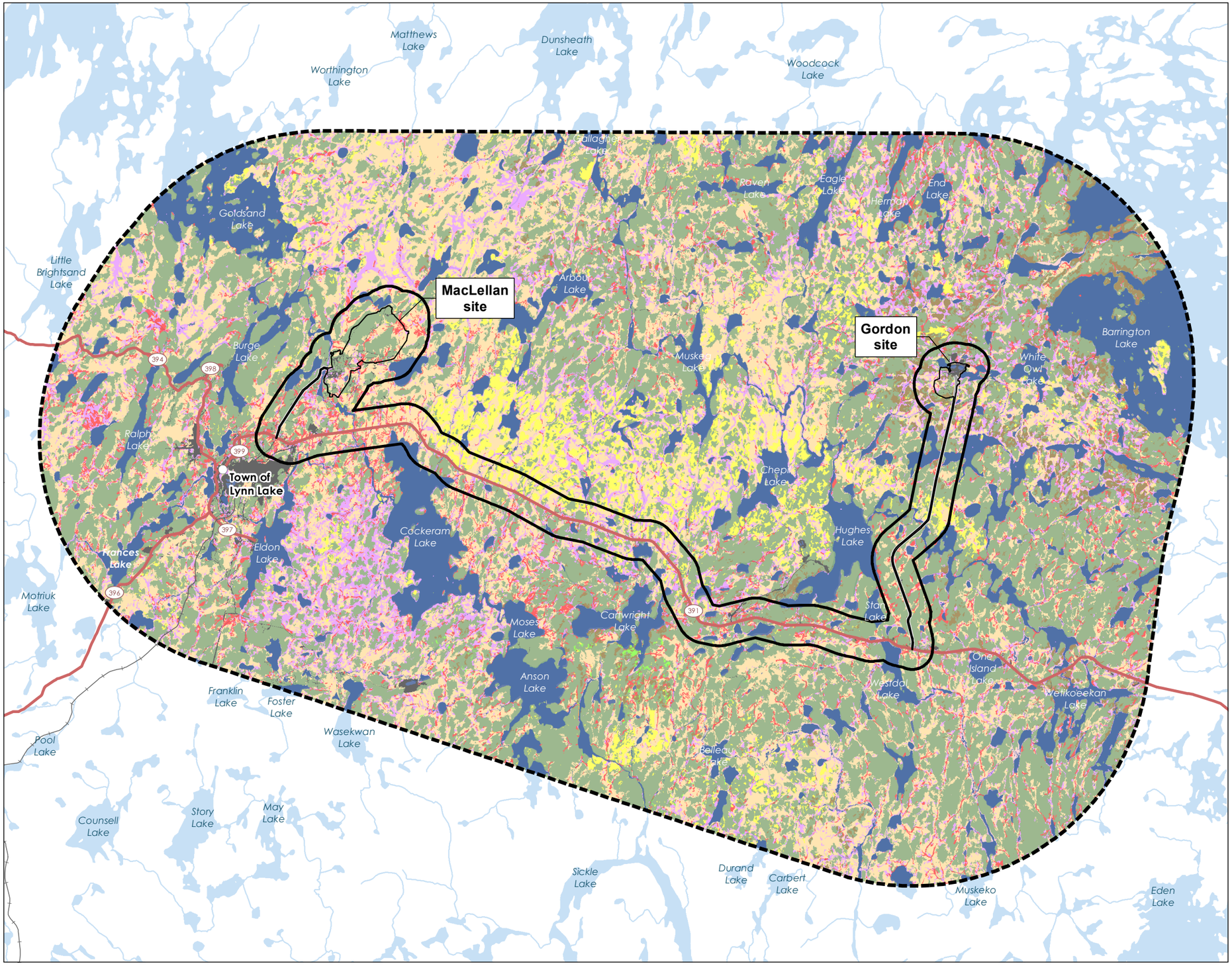
[c] - Manitoba's Forest Management Guidelines for Terrestrial Buffers (Government of Manitoba 2017)

[d] - Environment Canada's Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region (Environment Canada 2009)

[2] - Low: foot traffic, occasional/infrequent/short-term small vehicle (<1 ton) or ATV use; medium: trucks>1 ton, regular/frequent/long-term small vehicle (<1 ton) or ATV use; High: road, distribution line, or outlet channel construction, forest harvest, rock crushing, asphalt batching, quarry, or gravel pit operation

[3] - low disturbance category considered as foot traffic only, all other activities (i.e., occasional/infrequent/short-term small vehicle (<1 ton) or ATV use considered medium disturbance).

A.9 ATTACHMENT IAAC-165



Stantec

Project Infrastructure
- Project Development Area

Study Area
- Wildlife and Wildlife Habitat Local Assessment Area (LAA)
- Wildlife and Wildlife Habitat Regional Assessment Area (RAA)

Land Use/Land Cover

Upland
- Barren
- Coniferous
- Deciduous
- Mixedwood
- Shrubland

Wetland
- Bog
- Fen
- Marsh
- Swamp

Water
- Water

Anthropogenic
- Development

Landbase
- Highway
- Access Road
- Rail
- Watercourse
- Waterbody

N

0 2 4 Kilometres

(At original document size of 11x17)
1:200,000

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Base Data Sources: Government of Manitoba and Government of Canada
3. Land Use/Land Cover; Stantec 2017.

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2021-05-21
Technical Review by DRouthier on 2021-05-21

Client/Project
111473012
ALAMOS GOLD INC.
Lynn Lake Gold Project

Map No.
IAAC-165-1

Title
Habitat in the Regional Assessment Area for Moose, Gray Wolf, Black Bear, and Beaver

G:\...\GIS Project Folder\111473008 IL\GP EA\MXD\IAAC-165 Habitat in RAA Moose_GrayWolf_BlackBear_Beaver_20210629.mxd - Revised: 2021-06-29 By: ACampigotto

Table IAAC-165-1 Existing and Residual Conditions for Land Cover Classes in the PDA, LAA, and RAA for Moose, Gray Wolf, Black Bear, and Beaver[1]

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Upland[2]	Barren	Naturally unvegetated (i.e., rock outcrop, beaches)	0.0 (0.0%)	0.0 (0.0%)	0.9 (<0.1%)	0.0 (0.0%)	0.9 (0.0%)
	Conifer Dense	>60% crown closure, with ≥75% coniferous tree cover	238.6 (20.6%)	2,933.9 (20.2%)	29,040.1 (16.5%)	2,695.3 (-8.1%)	28,801.5 (-0.8%)
	Conifer Open	26-60% crown closure, with ≥75% coniferous tree cover	185.0 (16%.0)	1,573.3 (10.8%)	18,512.5 (10.5%)	1,388.3 (-11.8%)	18,327.5 (-1.0%)
	Conifer Sparse	10-25% crown closure, with ≥75% coniferous tree cover	122.2 (10.6%)	1,164.0 (8.0%)	2,1814.9 (12.4%)	1,041.8 (-10.5%)	2,1692.7 (-0.6%)
	Deciduous	>75% deciduous tree cover	0.0 (0.0%)	0.0 (0.0%)	155.1 (0.1%)	0.0 (0.0%)	155.1 (< 0.1%)
	Mixedwood Dense	>60% crown closure, with neither coniferous nor deciduous trees comprising ≥75% total tree cover	40.0 (3.5%)	340.8 (2.3%)	2,969.7 (1.7%)	300.8 (-11.7%)	2,929.7 (-1.3%)
	Mixedwood Open	26-60% crown closure, with neither coniferous or deciduous trees comprising ≥75% total tree cover	2.5 (0.2%)	63.6 (0.4%)	1,317.3 (0.7%)	61.1 (-3.9%)	1,314.8 (-0.2%)
	Shrubland	≥20% shrub cover	7.9 (0.7%)	643.2 (4.4%)	6,778.6 (3.8%)	635.3 (-1.2%)	6,770.7 (-0.1%)
		Upland Subtotal[4]	**596.2 (51.5%)**	**6,718.8 (46.2%)**	**80,589.1 (45.7%)**	**6,122.6 (-8.9%)**	**79,992.9 (-0.7%)**

Table IAAC-165-1 Existing and Residual Conditions for Land Cover Classes in the PDA, LAA, and RAA for Moose, Gray Wolf, Black Bear, and Beaver[1]

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Wetland[3]	Bog Shrubby	Isolated from surface or groundwater influence with >40 cm peat accumulation, >25% shrub cover and tree cover that is ≤25%	50.6 (4.4%)	826.3 (5.7%)	13,266.9 (7.5%)	775.7 (-6.1%)	13,216.3 (-0.4%)
	Bog Treed	Isolated from surface or groundwater influence with >40 cm peat accumulation, > 25% tree cover by coniferous species	189.7 (16.4%)	2,607.3 (17.9%)	28,979.8 (16.4%)	2,417.6 (-7.3%)	28,790.1 (-0.7%)
	Fen Graminoid	Connected to surface or groundwater with >40 cm peat accumulation, ≤25% shrub and tree cover	4.5 (0.4%)	31.9 (0.2%)	532.0 (0.3%)	27.4 (-14%)	527.5 (-0.8%)
	Fen Patterned	Connected to surface or groundwater with a pattern of strings and flarks	5.1 (0.4%)	220.2 (1.5%)	442.7 (0.3%)	215.1 (-2.3%)	437.6 (-1.2%)
	Fen Shrubby	Connected to surface or groundwater with >40 cm peat accumulation, >25% shrub and ≤25% tree cover	63.2 (5.5%)	1,052.5 (7.2%)	12,553.8 (7.1%)	989.3 (-6%)	12,490.6 (-0.5%)
	Fen Treed	Connected to surface or groundwater with >40 cm peat accumulation, >25% tree cover	14.9 (1.3%)	220.2 (1.5%)	2,809.9 (1.6%)	205.3 (-6.7%)	2,795.0 (-0.5%)
	Marsh	<40 cm peat accumulation with <25% shrub and tree cover	0.0 (0.0%)	15.5 (0.1%)	383.6 (0.2%)	15.5 (< 0.1%)	383.6 (< 0.1%)
	Swamp Shrubby	<40 cm peat accumulation with >25% shrub cover and ≤25% tree cover	10.9 (0.9%)	105.1 (0.7%)	1,168.4 (0.7%)	94.2 (-10.4%)	1,157.5 (-0.9%)
	Swamp Treed	<40 cm peat accumulation with >25% tree cover	62.2 (5.4%)	1,012.1 (7.0%)	6,603.2 (3.7%)	949.9 (-6.1%)	6541 (-0.9%)
		Wetland Subtotal[4]	**400.9 (34.6%)**	**6,091.1 (41.9%)**	**6,6740.3 (37.8%)**	**5,690.2 (-6.6%)**	**66,339.4 (-0.6%)**

Table IAAC-165-1 Existing and Residual Conditions for Land Cover Classes in the PDA, LAA, and RAA for Moose, Gray Wolf, Black Bear, and Beaver[1]

Landscape Type	Land Cover Class	Description	Existing Condition			Residual Condition	
			PDA	LAA	RAA	LAA	RAA
			Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Total (%)	Area (ha) and Percent Change (%)	Area (ha) and Percent Change (%)
Water	Water	Lakes, rivers, or streams	17.5 (1.5%)	1,238.3 (8.5%)	27,480.8 (15.6%)	1,220.8 (-1.4%)	27,463.3 (-0.1%)
Water Subtotal[4]			**17.5 (1.5%)**	**1,238.3 (8.5%)**	**27,480.8 (15.6%)**	**1,220.8 (-1.4%)**	**27,463.3 (-0.1%)**
Natural Land Cover Subtotal[5]			**1014.7 (87.6%)**	**14,532.5 (96.7)**	**174,810.2 (99.1%)**	**13,033.5 (-10.3%)**	**173,795.5 (- 0.6%)**
Anthropogenic	Development	Disturbed land, settlements, roads, industrial development	142.3 (12.3%)	484.3 (3.3%)	1,568.7 (0.9%)	1,499.0 (209.5%)	2583.4 (64.7%)
Anthropogenic Subtotal[4]			**142.3 (12.3%)**	**484.3 (3.3%)**	**1568.7 (0.9%)**	**1,499.0 (209.5%)**	**2583.4 (64.7%)**
Project Grand Total[4]			1,157.0 (100.0%)	14,532.5 (100.0%)	176,378.9 (100.0%)	14,532.5 (0.0%)	176,378.9 (0.0%)

[1] The assessment assumes that moose, gray wolf, black bear, and beaver use all land cover types throughout the year and has conservatively assessed change is habitat using this approach.

[2] Canadian Forest Service 2003

[3] Halsey et al. 1997, AESRD 2015

[4] Represent actual totals and may differ from land cover sums due to rounding.

[5] Includes upland, wetland, and water landscape types.

Table IAAC-165-2 Recommended Setback Distances and Restricted Activity Periods for the Lynn Lake Gold Project (DRAFT)

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	Scientific Name			Low	Medium	High
Mammals						
Black bear[a]	*Ursus americanus*	Active den	Year round	150	150	150
Little brown myotis[b,c]	*Myotis lucifugus*	Roost	May 1 – August 31	100	500	500
Northern myotis[b,c]	*Myotis septentrionalis*	Roost	May 1 – August 31	100	500	500
Bat cave[d]	-	Cave	Year round	200	200	200
Wolverine[e]	*Gulo gulo*	Den	Year round	100	250	500
Mineral lick[a]	-	Mineral lick	Year round	120	120	120
Denning species (e.g., red fox, gray wolf, American marten, fisher, least weasel)[c]	-	Active den	Year round	50	50	50
Birds						
American white pelican	*Pelecanus erythrorhynchos*	Nesting colony	April 1 - August 31	500	750	1000
Bald eagle	*Haliaeetus leucocephalus*	Active or traditional nest site	March 15 - July 15	250	500	1000
Bank swallow	*Riparia riparia*	Nesting colony	May 15 - July 31	50	150	300
Barn swallow	*Hirundo rustica*	Nest site	May 15 - Sept. 30	50	100	100
Boreal Owl	*Aegolius funereus*	Nest Site	March 1 - July 15	250	500	1000
Canada warbler	*Cardellina canadensis*	Nest site	May 1 - July 31	200	300	450
Common nighthawk	*Chordeiles minor*	Nest site	May 1 - August 31	100	200	300
Double-crested cormorant	*Phalacrocorax auritus*	Nesting colony	April 1 - August 31	400	500	750
Great gray owl	*Strix nebulosa*	Active or traditional nest site	Feb. 15 - July 15	250	500	1000
Grebes	-	Nesting colony	May 15 - July 15	100	200	400
Gulls/terns	-	Nesting colony	May 1 - July 15	400	500	750

Table IAAC-165-2 Recommended Setback Distances and Restricted Activity Periods for the Lynn Lake Gold Project (DRAFT)

Species or Feature[1]		Key Wildlife Feature	Restricted Activity Period	Recommended Setback Distance by Disturbance Category (meters)[2]		
Common Name	**Scientific Name**			**Low**	**Medium**	**High**
Herons	-	Nesting colony	April 1 - August 31	400	500	750
Horned grebe	*Podiceps auratus*	Nest site	May 1 - Sept. 15	100	200	400
Northern hawk owl	*Surnia ulula*	Nest site	Feb. 15 - July 15	250	500	1000
Osprey	*Pandion haliaetus*	Nest site	August 1 to March 31	100	100	100
Olive-sided flycatcher	*Contopus cooperi*	Nest site	May 1 - August 31	50	150	300
Rusty blackbird	*Euphagus carolinus*	Nest site	May 1 - July 31	50	150	300
Sharp-tailed grouse[3]	*Tympanuchus phasianellus*	Lek	Mar 15 - May 15	200	500	1000
Short-eared owl	*Asio flammeus*	Nest site	April 15 - Sept. 15	200	300	500
Trumpeter swan	*Cygnus buccinator*	Nest site	April 1 - July 31	500	750	1000
Yellow rail	*Coturnicops noveboracensis*	Nest site	May 1 - July 15	100	150	300
Amphibians						
Northern leopard frog[b]	*Lithobates pipiens*	Hibernaculum and breeding habitat	Year round	10	200	500

[1] - Recommended setback distances and restricted activity periods are derived from Manitoba Conservation Data Centre's Recommended Development Setback Distances from Birds document (MB CDC 2015) unless otherwise specified (see a to e below)

[a] - Manitoba Hydro's Manitoba-Minnesota Transmission Project Construction Environmental Protection Plan

[b] - Saskatchewan Ministry of Environment's Saskatchewan Activity Restriction Guidelines for Sensitive Species (SK MOE 2017)

[c] - Core maternity roost period for bats as defined by Fenton and Barclay (1980) and Barclay (1982 and 1984)

[d] - Manitoba's Forest Management Guidelines for Terrestrial Buffers (Government of Manitoba 2017)

[e] - Environment Canada's Petroleum Industry Activity Guidelines for Wildlife Species at Risk in the Prairie and Northern Region (Environment Canada 2009)

[2] - Low: foot traffic, occasional/infrequent/short-term small vehicle (<1 ton) or ATV use; medium: trucks>1 ton, regular/frequent/long-term small vehicle (<1 ton) or ATV use; High: road, distribution line, or outlet channel construction, forest harvest, rock crushing, asphalt batching, quarry or gravel pit operation

[3] - low disturbance category considered as foot traffic only, all other activities (i.e., occasional/infrequent/short-term small vehicle (<1 ton) or ATV use considered medium disturbance).

A.10 ATTACHMENT IAAC-168

Table IAAC-168-1 Mitigation Measures for Species at Risk / Species of Conservation Concern and Species of Cultural Importance

Species Group	Mitigation Measure
Species at Risk	• Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine on occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering, install amphibian exclusion screens on intake pumps. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2). Report to the Wildlife and Fisheries Branch of the Department of Agriculture and Resource Development (DARD) for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites.

Table IAAC-168-1 Mitigation Measures for Species at Risk / Species of Conservation Concern and Species of Cultural Importance

Species Group	Mitigation Measure
	• Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site. • Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Alamos will undertake pre-constructions surveys for bat hibernacula. • Alamos will continue the remote camera survey to share the results with provincial wildlife authorities (e.g., for woodland caribou and wolverine).
Culturally Important Species	• Schedule vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2021). If activities that could result in risk of harm cannot be avoided, Alamos will follow methods outlined in the WMMP to reduce potential effects to migratory birds and their nests. • Adhere to the provincial recommended development setback and timing restriction guidelines for birds (MB CDC 2015) and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows).

Table IAAC-168-1 Mitigation Measures for Species at Risk / Species of Conservation Concern and Species of Cultural Importance

Species Group	Mitigation Measure
	• Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984) and breeding season for birds (Zone C7; May 7 to August 7; ECCC 2021). If habitat tree removal or general tree clearing is required during the maternity roosting period, a Qualified Biologist will review the trees to determine on occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter [e.g., American marten (*Martes americana*)]. • Demolish existing buildings and infrastructure outside of the nesting window for birds and the maternity roosting period for bats (May 1 to August 31; Fenton and Barclay 1980; Barclay 1982, 1984). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Use down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Provide low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Maintain a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Restrict unauthorized access to habitat adjacent to the PDA. • Use existing roads and trails where possible. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the setback distances and activity restrictions outlined in Appendix A, Table A-2). Report to the Wildlife and Fisheries Branch of the Department of Agriculture and Resource Development (DARD) for direction on follow-up actions if necessary. • Reduce travel speeds, use multi-passenger vehicles, install signs to increase awareness, and clear roadside vegetation to maintain line of sight to reduce the chance for wildlife collisions both on-site and between sites. • Report wildlife encounters and problem wildlife concerns or sightings to Alamos using the standardized form. Appropriate action or follow-up will be guided by the Wildlife and Fisheries Branch of DARD. • Follow best management practices for general site housekeeping to reduce wildlife attraction (e.g., food and chemical storage, prompt removal of roadkill). • Control fugitive dust emissions from roads, material handling, and storage areas/stockpiles through measures such as: application of dust suppressants (e.g., water); use of surfactants (as a contingency); dust sweeping; gravel application; truck wheel washing stations; and enclosure of dust sources (Volume 3, Chapter 23, Section 23.5.7 of the EIS; Stantec 2020). • Develop and implement administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Adhere to applicable Transport Canada emission requirements for new mobile equipment on-site.

Table IAAC-168-1 Mitigation Measures for Species at Risk / Species of Conservation Concern and Species of Cultural Importance

Species Group	Mitigation Measure
	• Use perimeter berms and runoff and contact-water collection ditches around the overburden storage areas, ore stockpiles, and mine rock storage areas to collect overland flow and seepage, intercept groundwater flow, and divert non-contact water away from Project components. • Store fuel in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Treat effluent from sewage treatment plant and water management facilities to levels that will meet applicable federal and provincial guidelines of toxicity. • Use dust suppressants (e.g., water) in situations that have increased potential to generate dust. • Conduct effective and timely equipment maintenance to keep mining vehicles and equipment in good working condition. • Dispose of and handle of waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Alamos will undertake pre-constructions surveys for raptor nests. • Alamos will continue the remote camera survey (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and share the results with provincial wildlife authorities. • Alamos will monitoring beaver activity to help manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk.

A.11 ATTACHMENT IAAC-170

Table IAAC-170-1 Proposed Follow-up and Monitoring Activities within the Wildlife Monitoring and Management Plan

Follow-up / Monitoring Activity	Parameter	Timing / Frequency	Methods
Bat Hibernacula Survey	Presence/absence of bat hibernacula in the LAA.	Single event prior to site preparation activities.	Ultrasonic autonomous recording unit within the LAA.
Raptor Nest Survey	Presence of new raptor nest(s) or a change in status of previously documented raptor nests within the LAA.	Single event prior to site preparation activities.	Aerial survey of the LAA.
Avian Mitigation Plan	Active bird nest in the PDA or within the maximum associated setback distance outside the PDA.	Single event during the construction phase and as required during operation and decommissioning/closure phases.	Pre-clearing nest surveys (passive point-count survey or low-intensity nest search).
Remote Camera Study	Presence/absence of woodland caribou in the LAA and RAA.	Continuous prior to construction and during construction, operation, and decommissioning/closure phases.	Remote cameras.
Mortality Reporting	Wildlife mortality events or wildlife incidents associated with Project (within the LAA).	Continuous during the construction, operation, and decommissioning phases.	Self-reporting program administered by Alamos
Beaver Management	Beaver interactions with the Project (i.e., surface water) within the LAA.	Continuous during the construction, operation, and decommissioning phases.	Water level monitoring and aerial beaver dam surveys.
Wildlife and Tailings Management Facility Monitoring	Wildlife interaction with the tailings management facility.	Continuous during the operation and decommissioning/closure phases.	Includes regular inspection and monitoring methods outlined in the Surface Water Management Plan.

Notes:
LAA – Local Assessment Area
PDA- Project Development Area

A.12 ATTACHMENT IAAC-181

Table IAAC-181-1 Annual Average CRs for Off-Duty Workers for Non-Carcinogenic COPC for a 3 Weeks on 1 Week Off Work Rotation

COPC	Future Case		
	EPC ($\mu g/m^3$)	Inhalation Reference Concentration ($\mu g/m^3$)	CR
NO_2	1.4E+01	2.3E+01	5.9E-01
$PM_{2.5}$	1.1E+01	8.8E+00	**1.2E+00**
DPM	9.3E-02	5.0E+00	1.9E-02
HCN	9.6E-02	2.5E+00	3.9E-02
Acetaldehyde	3.6E-02	9.0E+00	4.0E-03
Acrolein	8.3E-03	2.0E-02	4.1E-01
Benzene	1.4E-02	3.0E+01	4.7E-04
1,3-Butadiene	7.1E-04	2.0E+00	3.5E-04
Ethylbenzene	2.4E-03	1.0E+03	2.4E-06
Formaldehyde	1.0E-01	1.0E+01	1.0E-02
Propionaldehyde	8.2E-03	8.0E+00	1.0E-03
Toluene	1.2E-02	3.8E+03	3.1E-06
2,2,4-Trimethylpentane	3.2E-03	1.8E+03	1.8E-06
Xylenes	8.0E-03	1.8E+02	4.4E-05
Acenaphthene	2.4E-04	1.0E+01	2.4E-05
Acenaphthylene	3.1E-04	1.0E+01	3.1E-05
Anthracene	3.3E-05	5.0E-02	6.7E-04
Fluoranthene	3.9E-05	5.0E-02	7.8E-04
Fluorene	3.2E-04	1.0E+00	3.2E-04
Naphthalene	2.5E-03	3.7E+00	6.7E-04
Phenanthrene	5.5E-04	8.0E-01	6.9E-04
Pyrene	4.4E-05	5.0E-02	8.8E-04
Arsenic	4.0E-03	1.0E+00	4.0E-03
Beryllium	2.3E-06	2.0E-02	1.1E-04
Cadmium	4.2E-05	1.0E-02	4.2E-03
Chromium Total	1.0E-03	2.0E-03	5.1E-01
Cobalt	1.7E-04	5.0E-01	3.5E-04
Copper	6.6E-04	1.0E+00	6.6E-04
Lead	1.5E-03	2.0E-01	7.4E-03

Table IAAC-181-1 Annual Average CRs for Off-Duty Workers for Non-Carcinogenic COPC for a 3 Weeks on 1 Week Off Work Rotation

COPC	Future Case		
	EPC ($\mu g/m^3$)	Inhalation Reference Concentration ($\mu g/m^3$)	CR
Manganese	7.0E-07	5.0E-02	1.4E-05
Mercury	6.2E-07	3.0E-01	2.1E-06
Molybdenum	7.3E-06	1.2E+01	6.1E-07
Nickel	1.3E-03	2.0E-02	6.6E-02
Selenium	2.8E-05	2.0E-01	1.4E-04
Silver	2.6E-05	1.0E-02	2.6E-03
Thallium	3.0E-05	1.0E-01	3.0E-04
Uranium	3.1E-05	3.0E-01	1.0E-04
Vanadium	4.4E-04	1.0E+00	4.4E-04
Zinc	5.9E-03	2.0E+00	2.9E-03

Table IAAC-181-2 Cancer Risk CRs for Off-Duty Workers for a 3 Week on 1 Week Off Work Rotation

COPC	Project Alone Case			
	Maximum LADC ($\mu g/m^3$)	TRV-RSC ($\mu g/m^3$)	CR	Equivalent ILCR
Acetaldehyde	5.9E-03	4.6E+00	2.7E-02	2.7E-07
Benzene	2.3E-03	3.0E+00	6.9E-03	6.9E-08
1,3-Butadiene	1.1E-04	3.3E-01	3.8E-05	3.8E-10
Formaldehyde	1.7E-02	7.7E-01	1.3E-02	1.3E-07
2,2,4-Trimethylbenzene	5.2E-04	1.8E+03	9.4E-01	9.4E-06
$B[a]P_{TPE}$	7.0E-07	3.2E-01	2.2E-07	2.2E-12
Arsenic	1.1E-04	1.6E-03	1.7E-07	1.7E-12
Beryllium	7.8E-08	4.2E-03	3.3E-10	3.3E-15
Cadmium	1.3E-06	1.0E+03	1.3E-03	1.3E-08
Chromium VI	5.7E-10	1.3E-04	7.4E-14	7.4E-19
Nickel	7.9E-05	7.7E-03	6.1E-07	6.1E-12

A.13 ATTACHMENT IAAC-191

Photo IAAC-191-1 Aerial Photograph Showing Original Stream Between Gordon and Farley Lakes

Appendix B RESPONSES TO MATHIAS COLOMB CREE NATION TRADITIONAL LAND AND RESOURCE USE INFORMATION

ALAMOS GOLD INC.

ALAMOS GOLD INC.
LYNN LAKE GOLD PROJECT

Response to Mathias Colomb Cree Nation Traditional Land and Resource Use Information including Mitigation Table

August 4, 2021

Prepared by:

Stantec Consulting Ltd.

Table of Contents

LIST OF APPENDICES

Terms of Use

Alamos Gold Inc. (Alamos) has prepared this response to the *Mathias Colomb Cree Nation Knowledge and Use Study Specific To Alamos Gold Inc.'s Proposed Lynn Lake Gold Project* (TLRU Report). This response is intended to inform the regulatory process, including consultation, and project planning of the Lynn Lake Gold Project (the Project). Subject to the conditions below, the final copy of this response will be filed with the Impact Assessment Agency of Canada (the Agency), becoming part of the public record, and with other regulators, as required. Alamos will also use this response, and the information in the TLRU Report, as part of the record of its engagement process for the Project.

Mathias Colomb Cree Nation (MCCN) has put the following disclaimers and conditions on the use of the information in the TLRU Report:

> *The information contained in this Report is based on research conducted by Firelight Research Inc., as well as published works and archival research. It reflects the understandings of the lead author and is not intended to be a complete depiction of the dynamic and living system of use and knowledge maintained by Mathias Colomb Cree Nation members. It may be updated, refined, or changed as new information becomes available. All mapped information is based on interviews with Mathias Colomb Cree Nation knowledge holders conducted within constraints of time, budget, and scope. Base map data originate from the Geobase and Natural Resources Canada. Project related data originates from the proponent* (Polden et al. 2021:i).
>
> *This Report is non-confidential and is intended for consideration by MCCN, the Proponent and regulator. All community data collected for this Study is the property of MCCN and may not be used or reproduced for other purposes without the written consent of MCCN. Nothing in this Report should be construed as to waive, reduce, or otherwise constrain MCCN rights within, or outside of, regulatory processes. Nor should this Report be construed as to define, limit, or otherwise constrain the Aboriginal or Treaty rights of other First Nations or Indigenous peoples. The Report and data collected as part of the Study should not be relied upon to inform other projects or initiatives without the written consent of MCCN* (Polden et al. 2021:12).

Acronyms

Alamos	Alamos Gold, Inc.
EIS	environmental impact statement
FIFO	fly in fly out
ha	hectare
IAAC	Impact Assessment Agency of Canada
km	kilometre
LAA	local assessment area
MCC	Manitoba Conservation and Climate
MCCN	Mathias Colomb Cree Nation
PDA	Project development area
RAA	regional assessment area
TEK	traditional ecological knowledge
TLRU	traditional land and resource use
TMF	tailings management facility
VC	valued component

1.0 TRADITIONAL LAND AND RESOURCE USE INFORMATION AND MITIGATION

1.1 OVERVIEW

On June 3, 2021, Mathias Colomb Cree Nation provided an Indigenous Knowledge and Use Study (TLRU Report) specific to Alamos Gold Inc.'s proposed Lynn Lake Gold Project (the Project). The TLRU Report is dated May 21, 2021 and is composed of traditional land and resource use (TLRU) and traditional ecological knowledge (TEK) information as well as recommended mitigation measures presented by Mathias Colomb Cree Nation. The TLRU Report was completed and provided to Alamos after the filing of the May 2020 Environmental Impact Statement (EIS). TLRU information, concerns, and recommendations will be used for ongoing Project planning, consultation and regulatory purposes.

Information Sources

The information contained in the mitigation table response (Appendix A, Table 1) has been compiled using two sources:

- *Mathias Colomb Cree Nation Knowledge and Use Study Specific to Alamos Gold Inc.'s Proposed Lynn Lake Gold Project* (2021), Guy Polden, MSc and Firelight Research Inc., with the Mathias Colomb Cree Nation.
- *Alamos Gold, Inc., Lynn Lake Gold Project Environmental Impact Statement*, filed May 2020.

The TLRU Report contains non-confidential baseline information regarding current and available Mathias Colomb Cree Nation knowledge and use data collected with respect to Mathias Colomb Cree Nation traditional lands, within the vicinity of the Project and includes analysis of mapped knowledge and use (i.e., site-specific) data shared by 20 MCCN members during mapping interviews from September 23, 2020 to November 3, 2020. Data are also included from previous knowledge and use interviews conducted with MCCN members. These were documented in the draft TLRU Report (Polden et al. 2021). While each statement in the Mathias Colomb Cree Nation TLRU Report has been attributed with its original source, for the purposes of Table 1 (Appendix A) all TLRU and TEK information and recommendations are attributed to Mathias Colomb Cree Nation and have not been separated by information source or individual participant, respecting the fact that Mathias Colomb Cree Nation are the collective rights holders and Alamos' engagement is with Mathias Colomb Cree Nation as a whole.

1.2 METHODS

Following a thorough review of the Mathias Colomb Cree Nation TLRU Report, data were summarized into related topics that represent the information, concerns, and recommendations shared by Mathias Colomb Cree Nation and reviewed against the results of the May 2020 EIS. This information has been compiled into the Mathias Colomb Cree Nation Traditional Land and Resource Use Information and Mitigation Table 1, which appears in Appendix A.

RESPONSE TO MATHIAS COLOMB CREE NATION TRADITIONAL LAND AND RESOURCE USE INFORMATION INCLUDING MITIGATION TABLE

The Mathias Colomb Cree Nation Traditional Land and Resource Use Information and Mitigation Table 1 utilizes the following organizational structure:

- Column 1: TLRU column includes information shared by Mathias Colomb Cree Nation regarding existing conditions followed by potential Project effects. The information in Table 1 has been organized under the following May 2020 categories:
    - TEK
        - atmospheric environment
        - noise and vibration
        - groundwater
        - surface water
        - fish and fish habitat
        - vegetation and wetlands
        - wildlife and wildlife habitat
    - TLRU
        - hunting
        - fishing
        - trapping
        - plant harvesting
        - travel
        - cultural, spiritual, and ceremonial practices or areas
    - Accidents and malfunctions
    - Environmental management and monitoring.

Column 2: The information included in the “Location of Sites or Areas” column demonstrates where the specific sites or areas identified by Mathias Colomb Cree Nation are in relation to the Project, including the Project development area (PDA), local assessment area (LAA), or regional assessment area (RAA), and in geographical reference to specific Project components. Identification of specific sites or areas identified by Mathias Colomb Cree Nation in Column 2 of the Traditional Land and Resource Use Information and Mitigation Table has been completed using the information provided in the TLRU Report. However, the ability to definitively locate sites or areas identified by Mathias Colomb Cree Nation has been limited due to the scale and resolution of the PDF figures in the TLRU Report. Alamos requested

the associated GIS shape files from Mathias Colomb Cree Nation in June 2021, which would allow for more accurate location and review of Mathias Colomb Cree Nation site-specific information against the results of the EIS; however, discussions regarding this information sharing are currently ongoing.

With respect to spatial boundaries, Alamos acknowledges that the Mathias Colomb Cree Nation TLRU Report defines spatial boundaries differently (see Section 2.1 below) from those used in the TLRU assessment in Chapter 17 of the EIS. The spatial boundaries in the TLRU assessment were determined using standard practices and are defined in Chapter 17 (Section 17.1.5.1) of the EIS. For consistency, the site-specific information shared by Mathias Colomb Cree Nation has been reviewed against the results of the EIS and located within the spatial boundaries defined in Chapter 17, Section 17.1.5. These are defined as follows, based on standard environmental assessment practice:

- Project Development Area (PDA): encompasses the immediate area in which Project activities and components may occur plus a 30-metre (m) buffer and is the anticipated area of direct physical disturbance associated with construction and operation of the Project (i.e., the Project footprint; Map 17-1). The PDA of Gordon site is approximately 271.52 hectares (ha). The PDA of MacLellan site is approximately 937.88 ha.

- Local Assessment Area (LAA): The LAA is the maximum area within which Project environmental effects can be predicted or measured with a reasonable degree of accuracy and confidence. The boundary aligns with the LAA established for the wildlife and wildlife habitat VC (Chapter 12). This LAA also encompasses the predicted extent of potential effects on terrestrial uses (effects on vegetation and wetlands VC, Chapter 11) and was established to consider the area in which the Project activities could have direct or indirect effects on Current Use. This is because traditional practices rely on the resources as assessed in these biophysical VCs, as well as fish and fish habitat (Chapter 10) and on access to these resources. The LAA is a 1 km buffer around the PDA to account for sensory disturbance to harvested wildlife species, to traditional practices, and dust on harvested plants. It is approximately 14,392.32 ha (Map 17-1).

- Regional Assessment Area (RAA): The RAA is the area within which the Project's environmental effects may interact or accumulate with the environmental effects of other projects or activities that have been or will be carried out such that cumulative environmental effects may potentially occur. Site-specific locations identified in the TLRU Report that are outside the RAA have been included in the Traditional Land and Resource Use Information and Mitigation Table 1 in an effort to characterize the extent and nature of Mathias Colomb Cree Nation traditional practices in the region. The boundary aligns with the RAA selected for the wildlife and wildlife habitat VC (Chapter 12) due to Indigenous use and reliance on moose in the area, as described by Marcel Colomb First Nation. As traditional harvesting depends on the species considered in this VC and it covers a broad area of the most mobile species, the RAA is used to provide regional context for the significance of residual effects and is also the area within which the potential for cumulative effects of the Project in combination with other past, present, or reasonably foreseeable projects or activities are considered. The RAA is approximately 176,378.84 ha (Map 17-1).

Map 17-1 of the EIS has been included here as Appendix B.

Column 3: Information included in the “Mathias Colomb Cree Nation Recommendations and Requests” column outlines any recommendations or requests proposed by MCCN mitigating potential effects from the Project. They have been included once or multiple times, depending on the relevant topics.

Column 4: Information included in the “Relevant May 2020 EIS Section(s)” column identifies the section(s) of the May 2020 EIS where MCCN’s information, concerns, or recommendations have been considered.

Column 5: Information included in the “Mitigation Measures Proposed in the Environmental Impact Statement(s)” column identifies the relevant mitigation measures that have been proposed in the May 2020 EIS to mitigate potential effects from the Project.

Column 6: Information included in the “Additional Alamos Response” column provides Alamos’ additional responses to the issues and concerns raised by Mathias Colomb Cree Nation outlined in Column 5.

2.0 TRADITIONAL LAND AND RESOURCE USE INFORMATION AND MITIGATION TABLE

2.1 OVERVIEW OF THE MATHIAS COLOMB CREE NATION TLRU REPORT

According to the TLRU Report, hunting and trapping, water and fishing, and cultural continuity, have been and continue to be important traditional use values of Mathias Colomb Cree Nation in the Project area. Mathias Colomb Cree Nation people are descendants of the Missinippi (Big River) of the upper Churchill region. The Missinippi people have lived in the area now recognized as Mathias Colomb Cree Nation territory since time immemorial. Today, the main settlement is on one reserve in the community of Pukatawagan. Pukatawagan is located in northwest Manitoba, approximately 210 km north of The Pas (Polden et al. 2021), and 122 and 123 kms from the Gordon and Maclellan sites, respectively. There are no all-weather access roads connecting Pukatawagan to the Project. The information presented in the TLRU Report identifies 316 site-specific values in relation to the Project, reflecting use of the Project area by Mathias Colomb Cree Nation for generations.

The Mathias Colomb Cree Nation TLRU Report defines three separate, but strongly linked, valued components (VCs):

- Hunting and Trapping
- Water and Fishing
- Cultural Continuity

These VCs were chosen to represent the critical conditions or elements that required for the continued practice of Mathias Colomb Cree Nation culture and livelihoods. The information shared in the TLRU Report was collected from 15 interviews with 20 Mathias Colomb Cree Nation members. Study participants were selected by Mathias Colomb Cree Nation.

The TLRU Report defines the following study areas in relation to the Project:

- Project Footprint: within 250 m of the Project and, where available, related physical works, access routes, and activities, and representing an approximation of a zone within which the abundance of wildlife and land use by humans may be altered.
- Local Study Area (LSA): within 5 km of the Project and representing an approximation of the distance easily travelled in a day from a point of origin (e.g., a cabin, camp, or other location) by foot, through bush, and back again, as when hunting.
- Regional Study Area (RSA) within 25 km of the Project and representing a broad area within which direct and indirect effects of the Project, such as noise, dust, odours, access management activities,

traffic, effects on water, and other forms of disturbance may be anticipated to interact with cumulative effects, causing additive or synergistic effect with impacts to community values.

The TLRU Report identifies 18 site-specific values within the Project footprint (two cultural continuity values, 12 hunting and trapping values, and four water and fishing values); 139 site-specific values within the LSA (49 cultural continuity values, 43 hunting and trapping values, and 47 water and fishing values); and 316 site-specific values within the RSA (89 cultural continuity values, 115 hunting and trapping values, and 112 water and fishing values). Sites and areas recorded in the TLRU Report were buffered to account for a margin of error and to protect information confidentiality. Points locations were randomized within a 250 m radius and then buffered by one km; similarly, a one km buffer was also generated around each line and polygon.

Mathias Colomb Cree Nation identified potential Project interactions with hunting and trapping values defined by Mathias Colomb Cree Nation, including:

- "*Loss of valuable animal habitat and changes in animal movement patterns due to land clearing and other mine construction and operation activities;*
- *Reduced access by MCCN members to preferred harvesting areas resulting from the enclosure of the mine property and associated barriers to movement (e.g., gating of roads, fencing, and enforcement of restrictions);*
- *Avoidance of traditional hunting and trapping areas due to safety concerns in the vicinity of mining operations;*
- *Displacement of animals from the Study Area due to disturbances during construction and operation (e.g., noise and vibrations from blasting);*
- *Negative impacts to animal health resulting from Project activities, including through the potential introduction and dispersion of contaminants; and*
- *The need for MCCN members to travel greater distances with increased effort to access lands and resources suitable for Hunting and Trapping (resulting from the above interactions).*" (Polden et al. 2021).

Mathias Colomb Cree Nation identified potential Project interactions with water and fishing values defined by Mathias Colomb Cree Nation, including:

- "*Negative impacts to water quality and fish health resulting from the potential introduction and dispersion of contaminants from tailings management facilities into surrounding lakes and water courses; and*
- *Diminished ability of MCCN members to harvest fish and drinking water as a result of the loss of confidence in the quality of resources.*" (Polden et al. 2021).

Mathias Colomb Cree Nation expressed concerns regarding identified potential Project interactions with cultural continuity defined by Mathias Colomb Cree Nation, including:

- "*Impaired access to cabins, campsites, and traditional harvesting areas in the Study Area leading to reductions in the ability and opportunity for MCCN members to transfer bodies of knowledge and skills to younger generations;*
- *Changes in the landscape and increased worker population and human activity negatively impacting sense of place and peaceful enjoyment of lands and resources within the [TLRU Report] Study Area;*
- *Direct loss of medicines and other valued plant resources due to clearing for Project activities; and*
- *Diminished confidence in the health and integrity of medicines and other valued plant resources due to the potential dispersion of industrial contaminants (e.g., air pollution and airborne dust).*" (Polden et al. 2021).

Mathias Colomb Cree Nation noted several limitations of the TLRU Report. Not all knowledge holders were able to participate in TLRU Report; many Mathias Colomb Cree Nation members with important knowledge of the Study Area were unable to participate. Data collected for each participant was limited by what the participant was able and willing to report at the time of the interview. The recorded site-specific use values represent a small portion of the actual area required for the meaningful practice of an MCCN way of life and exercise of Aboriginal and treaty rights. The TLRU Report does not reflect all Mathias Colomb Cree Nation current use in relation to the Project, and an absence of data does not signify an absence of use or value.

Finally, Mathias Colomb Cree Nation emphasized that the TLRU Report does not include recommendations on prevention, mitigation, monitoring, or compensation measures for Project-related impacts to Mathias Colomb Cree Nation. It is the position of Mathias Colomb Cree Nation monitoring, accommodation, and compensation measures should be determined in a collaborative dialogue between Mathias Colomb Cree Nation and Alamos.

2.2 MATHIAS COLOMB CREE NATION TLRU ASSOCIATED WITH THE PROJECT

Appendix A, Table 1 Column 1 provides an overview of Mathias Colomb Cree Nation's TLRU within and in the vicinity of the PDA, LAA, and RAA, as provided in the TLRU Report. Alamos has reviewed the information, considered it in reference to the May 2020, and provided additional responses, where applicable.

3.0 CONCLUSION

Overall, the information provided by Mathias Colomb Cree Nation in the TLRU Report aligns with other project-specific TLRU studies and information shared through engagement and serves to confirm the assumptions made in the EIS regarding the nature and extent of Mathias Colomb Cree Nation traditional use in relation to the Project. For instance, species of interest, environmental observations regarding changes in water quality, the change in the range of barren land caribou, lakes, rivers, and travel routes identified through engagement and project-specific TLRU studies were considered in the EIS. The information shared by Mathias Colomb Cree Nation is therefore consistent with the EIS, which was based on a conservative assumption that TLRU activities (including hunting, trapping, fishing, and plant gathering, use of trails and travelways, use of habitation areas, and use of cultural and spiritual sites) occur near the Project. While the information contained in the TLRU Report identified additional site-specific traditional use by Mathias Colomb Cree Nation, the TLRU Report did not identify new potential Project effects, effects pathways or effects to sites, traditional resources, activities, or practices that had not been previously assessed in the EIS. The conclusion of the TLRU assessment in Volume 2, Chapter 17 of the May 2020 EIS that the effects of the Project on TLRU will not result in the long-term loss of availability of traditional use resources or access to lands currently relied on for traditional use practices or the permanent loss of traditional use sites and areas in the RAA remains unchanged. The overall conclusion of the May 2020 EIS (Volume 3, Chapter 25 of the EIS): "*Based on the results of the environmental assessment, including implementing the identified mitigation measures, the Project is not likely to cause significant adverse environmental effects, including cumulative effects and effects from accidents and malfunctions and effects of the environment on the Project.*" remains unchanged as well.

Alamos is committed to continuing to work with Mathias Colomb Cree Nation to discuss mitigation strategies to avoid, reduce, or otherwise manage potential effects of the Project and to address or respond to identified concerns. The information shared by Mathias Colomb Cree Nation will continue to be used for Project planning, consultation, and regulatory purposes, where applicable.

4.0 REFERENCES

Polden, Guy and Firelight Research Inc., with the Mathias Colomb Cree Nation. 2021. Mathias Colomb Cree Nation Knowledge and Use Study Specific To Alamos Gold Inc.'s Proposed Lynn Lake Gold Project. Prepared on behalf of Mathias Colomb Cree Nation. Submitted to Lorna Bighetty, Chief, Mathias Colomb Cree Nation.

Appendix A TABLE 1: MATHIAS COLOMB CREE NATION TRADITIONAL LAND AND RESOURCE USE INFORMATION AND MITIGATION TABLE

Appendix A Table 1: Mathias Colomb Cree Nation Traditional Land and Resource Use Information and Mitigation Table

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Traditional Ecological Knowledge					
Atmosphere					
Potential Project Effects MCCN expressed concern that degradation of the environment through air pollution and airborne dust deposition caused by Project activities would harm or diminish confidence in the health of medicines and other valued plant resources and animals harvested in the vicinity of the Project.	No locations related to atmospheric conditions were specifically identified in the mapping within the TLRU Report.	n/a	Chapter 6: Sections 6.1.2 (page 6.6) Influence of engagement on the assessment of the atmospheric environment Section 6.3 (page 6.28) Project Interactions with atmospheric environment Section 6.4.1.2 (page 6.33) Project pathway of effects on air emissions and dust Section 6.4.1.3 (page 6.51) Mitigations for effects of dust and emissions Section 6.7.1.1. (page 6.84 and page 6.85) Summary of changes in air quality at the Gordon site and at the MacLellan site	• Dust suppression, as described in the air quality assessment (Chapter 6) will reduce sensory disturbance, effects to habitat or traditionally harvested species. • Dust mitigation measures, as described in the air quality assessment (Chapter 6) to reduce dust emissions and deposition including: – Enclosure of the mill feed storage area, crushing plant conveyor, and the fine ore stockpile to reduce fugitive dust emissions. – Use of dust collection/control systems at the primary crusher and the processing plant. – Optimization of haul roads, infrastructure to reduce transport distances and areas of exposed dry surfaces. – Regular maintenance/inspections of haul roads to monitor loose dust and track-out. – Dust suppression (application of water or, if required, chemical dust suppressants) during dry periods. – Speed limits on the on-site haul roads (35-40 km/h). – Dust sweeping and truck wheel washing stations prior to entering onto PR 391 to reduce track-out. – Stabilization (vegetation or covering) of topsoil and overburden stockpiles. • Air pollution mitigation measures as described in the air quality assessment (Chapter 6) and the wildlife assessment (Chapter 12) to reduce environmental degradation and disturbance to wildlife, including: – Enclosure of leaching and adsorption processes at the ore milling and processing plant to reduce HCN emissions due to volatilization loses. – Design for use of high efficiency wet scrubbers (or equivalent) ton control emissions from Project facilities, where feasible. – Limited concentration of WAD-cyanide in water discharge to the TMF to 10 mg/L to reduce fugitive HCN emissions from the TMF pond. – Maintenance of engine/exhaust systems to keep equipment in good working condition. – Sulfur in diesel will be kept below 15 mg/kg as per the Sulphur in Diesel Fuel Regulations.	As described in IAAC-46, the Air Quality Monitoring plan will have adaptive management based on defined particulate matter concentrations at prescribed distances from dust sources. As described in IAAC-123, a dust control efficiency of 75% on the haul roads and access roads will be achieved throughout the life of the Project by application of water at a minimum frequency of every 8 hours during summer and increasing the watering frequency in dry summer days and high wind conditions and if measured ambient PM concentrations are in exceedance of the Manitoba Ambient Air Quality Criteria (AAQC). Chemical dust suppressants will be applied as an alternative option to watering during high wind conditions or if measured ambient PM concentrations are in exceedance of the Manitoba AAQC and if an increase of watering is determined ineffective or unfeasible. As described in IAAC-125, if the ambient air quality monitoring program indicates that the ambient TSP, PM_{10} or $PM_{2.5}$ concentrations are greater than Manitoba AAQC, additional mitigations to reduce dust emissions will be implemented. The additional dust mitigation measures could include: • Increased watering frequency on haul roads and access roads.

[1] For concision, the acronym MCCN will be used for Mathias Colomb Cree Nation within the body of this table.
[2] Includes sites described in the TLRU Report with associated geographic coordinates, as well as sites mapped on the figures. Where geographic coordinates described in the TLRU Report align with sites mapped on the figures, these sites have been conflated or buffered. Therefore, specific locations cannot be confirmed. If shapefiles are provided by MCCN, Alamos will review the data in reference to the Project spatial boundaries.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				– Cold starts will be limited to the extent possible, and a no idling policy will be implemented. Relevant mitigation as described in the wildlife and wildlife habitat assessment (Chapter 12, Sections 12.4.2.3, 12.4.3.4, and 12.4.4.3) to reduce effects on traditionally important species and resources. Relevant mitigation as described in the vegetation and wetlands assessment (Chapter 11, Sections 11.4.2.2, 11.4.3.2, 11.4.4.2) The application of relevant actions in the Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.15) to reduce effects on traditionally important species and resources. The application of relevant actions in the Air Quality Management Plan (Chapter 23, Section 23.5.7) to reduce effects on the environment from dust and air emissions.	• Application of chemical dust suppressants on haul roads and access roads. • Temporary suspension of construction and mining activities during high wind conditions. As described in detail in IAAC-125 and IAAC-127, continuous meteorological monitoring and continuous ambient air monitoring of ambient TSP, PM_{10} and $PM_{2.5}$ concentrations will be implemented during Project construction and operation in conjunction with emissions mitigation to assess the effectiveness of the dust mitigation and to evaluate the need for more rigorous dust mitigation. Monitoring stations will be installed to measure both, background ambient particulate matter (PM) concentrations (in an upwind location from the Project sites) and ambient particulate matter concentrations influenced by the Project (in downwind locations). Continuous meteorological monitoring stations (each with a 10 m tower) will be installed at Gordon and MacLellan sites and will provide real time meteorological data to assist in the implementation of adaptive management for dust emissions. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Noise and Vibration					
Potential Project Effects MCCN expressed concerns about Project-related noise affecting the environment. MCCN stated that operation noise from a copper mine near Fox Lake resulted in decreased trapping success.	The following location is outside the RAA outlined in the EIS (distance from PDA): • Fox Lake Mine (47 km) No locations related to noise and vibration were specifically identified in the mapping within the TLRU Report.		Chapter 7: Section 7.4.1.2 (page 7.17) Project pathway of effects on noise Section 7.4.1.3 (page 7.18) Mitigations for effects of noise on the environment Section 7.4.1.4 (page 7.19 and 7.24) project residual effects on noise during construction and operation Section 7.7.1 (page 7.38) Significance of project residual effects	• Maintenance of vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance as described in Chapter 12, Section 12.4.2.3. • Design and practice to reduce noise and vibration as described in Chapter 7, Sections 7.4.1.3 and 7.4.2.3 of the EIS including: – Locating large stationary machinery inside buildings where possible. – Enclosing the conveyor between buildings in the processing plant. – Use of exhaust mufflers on mobile equipment and maintaining engine and exhaust systems in good working condition. – Noise insulating panels in work camp building walls and roof. – Air conditioning system to allow for doors/windows of the work camp to be closed to reduce outdoor noise indoors. – Reducing idling of heavy fleet when not in operation, where practical. – Blasting using a blast design with a maximum of 207.9 kg explosive per time, only one hold/delay in the blast, and a minimum time delay between holes of 8 milliseconds. – Using a reduced blast charge of 43 kg for receptor 76 and 73 (Indigenous receptors) near the Gordon site and monitoring/engagement to confirm if blast can be increased for those areas. • The application of relevant actions in the Noise and Vibration Management Plan (Chapter 23, Section 23.5.8) to reduce effects on the environment from noise disturbances.	As described in IAAC-134, the Noise and Vibration Management Plan will include protocols that would serve to inform communities and land users of blasting or an anticipated blasting schedule ahead of time such that local receptors can prepare, and the resulting nuisance and startle responses are reduced. IAAC-135 provides a high-level summary of the Noise and Vibration Management Plan including details on the measurement parameters; schedule; methods and characteristics of monitoring activities; reporting mechanisms; regulatory instruments; reporting; and information sharing. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Groundwater					
Potential Project Effects MCCN expressed concern about the contents of collection ponds leaching into the ground and reaching watercourses, including the Granville Lake watershed and Churchill River.	The RAA outlined in the EIS is within Granville Lake watershed. The following locations are outside the RAA outlined in the EIS (distance from PDA): • Churchill River (32 km) • Granville Lake (33 km) No locations related to groundwater were specifically identified in the MCCN TLRU Report.	n/a	Chapter 8: Groundwater Section 8.1.2 (page 8.5) Influence of engagement on the assessment of groundwater; Section 8.3 (page 8.35) Project interactions with groundwater; Section 8.4 (page 8.39) Assessment of the potential effects to groundwater. Section 8.7.1 (page 8.81) Significance of project residual effects	Mitigations for potential effects on groundwater (quantity and quality) are in Chapter 8, Sections 8.4.2.2 and 8.4.3.2 of the EIS and include: • Limit construction footprint (i.e., PDA) to the extent possible to reduce the potential for reductions in groundwater recharge and limit the number of watersheds overprinted by the PDA. • Use standard management practices throughout the Project, including drainage control and excavation and open pit dewatering. • Intercept groundwater flowing into the open pit prior to discharge at the pit wall and return water generated from pumping groundwater interceptor wells to Gordon and Farley lakes to offset a reduction in groundwater discharge. The groundwater interceptor wells are an integral part of the open pit dewatering strategy and are therefore included in the effects assessment as mitigation. • Use standard construction methods, such as seepage cutoff collars, where trenches extend below the water table to mitigate preferential flow paths. • Design of the MRSA to increase the amount of runoff and reduce the amount of infiltration through the MRSA, thereby reducing the recharge and loading to groundwater. • Installation of contact water collection ditches around the overburden storage area, ore stockpile, and MRSA to collect toe seepage and groundwater recharge from these Project components. Groundwater quality will also be mitigated through the application of relevant actions in the Groundwater Monitoring Plan (Chapter 23, Section 23.5.4 of the EIS) to address unanticipated effects to groundwater through an adaptive management approach. Acid rock drainage and metal leaching from the collection and tailings ponds will be mitigated through the application of relevant actions in the Acid Rock Drainage and Metal Leaching Management and Monitoring Plan (Chapter 23, Section 23.5.3)	As described in IAAC-108, the Groundwater Monitoring and Management Plan will include include groundwater quantity (level, pumped volumes) and quality (general chemistry and select dissolved metals) monitoring with an adaptive management component. The adaptive management component will include triggers and thresholds for groundwater quantity and quality that alert to changing conditions and allow flexibility to address/accommodate new circumstances, adjust monitoring, implement new mitigation measures, and/or modify existing measures, if required. See response to IAAC-73 and Table IAAC-39-1 for further details on the conceptual Groundwater Monitoring Plan; elaborating on the detail provided in the EIS. As described in IAAC-27, mitigation measures for acid rock drainage and metal leaching include, but are not limited to: • Monitoring, collection, and recycling of contact water during operation. • Blending PAG and non-PAG waste rock during operation and encapsulation with overburden and soil at closure. This strategy was found to be effective based on monitoring of historical rock storage at the Gordon site. • Covering TMF with overburden and soil at closure. • Rehabilitation of temporary features (e.g., ore pads) at closure. • Flooding pits to prevent development of ARD/ML from materials exposed on pit walls. Alamos provided conceptual Enviornmental Management and

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Surface Water					
Existing Conditions MCCN identified water as an essential resource that supports resources and MCCN's harvesting practices, including hunting and medicinal plant harvesting. MCCN reported 163 fishing and water values, including 4 in the TLRU Report Footprint, 47 in the TLRU Report LSA, and 112 in the TLRU Report RSA. The MCCN TLRU Report spatial boundaries do not align with the Project spatial boundaries; therefore, some of the sites identified by MCCN may fall outside the Project spatial boundaries. MCCN relied and continue to rely on the Project area, including waterbodies in the RAA, for practices related to water, including fishing and collecting drinking water. **Potential Project Effects** MCCN expressed concern that the Project would result in reduced confidence in water quality, which would in turn affect water harvesting and fishing. MCCN explained that water quality may be affected by the potential introduction and spreading of contaminants from tailings management facilities into nearby waterbodies.	The LLGP is within the PDA outlined in the EIS. Chepil Lake, Churchill River system, Granville Lake watershed, Hughes Lake, and Lynn Lake are within the RAA outlined in the EIS. The following locations are outside the RAA outlined in the EIS (distance from PDA): • Dunphy Lakes (34.5 km) • Frances Lake (6.5 km) • Russell Lake (58 km) The 1 km buffer of 1 location related to surface water and fishing (Keewatin River) was identified in the MCCN TLRU Report that overlap the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to surface water and fishing were identified in the MCCN TLRU Report that overlap the LAA outlined in the EIS. The 1 km buffer of approximately 38 locations related to surface	n/a	Chapter 9: Surface Water Section 9.1.2 (page 9.8) Influence of engagement on the assessment of surface water. Section 9.2.2.2 (page 9.27) Water quality monitoring program Section 9.3 (page 9.30) Project interactions with surface water Section 9.4 (page 9.33) Assessment of potential for Project activities to affect surface water quality Section 9.7.1 (page 9.113) Significance of project residual effects.	Mitigation measures for effects on aquatic plants, including effects due to water management, are described in Chapter 11, Section 11.4.3.2. and 11.4.5.2 include: • Wetland buffering, silt fencing, and timing of vegetation clearing (i.e., during frozen conditions) as described in the vegetation and wetlands assessment (Chapter 11, Section 11.4.3.2) to reduce habitat loss or loss of traditionally important species. • Directing grading away from wetlands, and reducing the removal of vegetation in wetlands, where practicable. • Maintaining cross drainage across roadways to maintain the water flow to adjacent plant communities. • Using protective layers such as matting for access through wet areas. Mitigation measures to reduce effects on surface water (quantity and quality) are described in Chapter 9, Sections 9.4.2.2 and 9.4.3.2 of the EIS. By reducing effects on surface water, it is anticipated that effects on fish/fish harvesting will also be reduced. These measures include: • Constructing water management structures and grading access roads/perimeter of open pits to collect, divert, and release non-contact water to the environment and to collect, store, and re-use contact water (stored at the TMF) to meet demand in the processing plant. Excess water will only be discharged after reuse and treatment, as necessary. This reduces the water demand and reduces/eliminates discharge of water from the TMF to the environment and associated water quality effects. The treatment of contact water will meet applicable federal and provincial regulatory requirements, prior to discharge to the environment, if required. • Intercepting groundwater flowing into the open pit (Chapter 8, Section 8.4.2.2) thereby reducing the volume of contact water and reducing the potential dewatering of Gordon and Farley lakes.	As described in IAAC-26, a Closure Plan will be developed to restore Project sites to a satisfactory condition, in accordance with provincial legislation and guidelines, such that no long-term adverse effects on surface water quality or aquatic biota in the downstream receiving environment will occur. The Closure Plan will include methods for progressive reclamation and decommissioning of the Project and for re-establishing drainage patterns at both sites. The objectives of the Closure Plan include: • Stabilizing Project sites to physically, chemically, and biologically encouraging terrestrial and aquatic repopulation. • Providing reasonable paths for surface drainage. • Discharging contact water in compliance with effluent surface water and groundwater quality criteria. A detailed Closure Plan that conforms with *The Mines and Minerals Act – Mine* *Closure Regulation* will be submitted prior to the commencement of Project construction.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN expressed doubts about Project-specific reclamation planning and whether waterbodies would return to their natural condition following mining operations, stating that previous reclamation activities on other projects have not been sufficient.	water and fishing were identified in the MCCN TLRU Report that overlap the RAA outlined in the EIS.			• Maintaining existing drainage patterns with the use of culverts. Inspection of culverts periodically to remove accumulated material and debris to avoid erosion, flooding, habitat damage, property damage, and mobilization of sediment to downstream waterways. • Designing contact water collection ditches to reduce standing water and to withstand a 1 in 25-year flood and designing collection ponds with active water storage and for a 1 in 100-year storm. These features reduce the chance of overflowing and downstream contamination, should heavy precipitation occur. • Designing collection pond inlets and outlets to reduce water scour and meet sedimentation requirements. Sediment and erosion control measures will also be used during construction to reduce water quality effects, including effects to traditionally harvested species such as fish. • Treating domestic waste (approximately 60,000 L/day) at the sewage treatment plant at the MacLellan site, to meet applicable regulatory requirements before discharging to the environment, reducing effects on water quality downstream. • Aerating Wendy and East pits and groundwater from the interceptor wells to improve water quality prior to dewatering. • Treating and handling of building material that is used in water to avoid the release or leaching of substances that would affect water quality downstream. • Designing the TMF with two cells to allow progressive development during operation to reduce freshwater requirements. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF. • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake. • Mitigation measures for post closure, including: – Implementing passive treatment options (e.g., controlled pit stratification, fertilizer amendment, flow segregation) in the open pit should monitoring show that pit water quality is not suitable for release to the environment during the anticipated 21 years to fill the open pit with contact water at the conclusion of mine operation. – Operating the TMF as a non-discharging facility during operation through decommissioning/closure. – Expediting re-filling of open pits during decommissioning/closure to reduce exposure of pit walls. – Refilling open pits with contact water at closure to return groundwater levels to near baseline conditions. The application of relevant actions in the Emergency Response and Spill Prevention and Contingency Plan (Chapter 23, Section 23.5.1 of the EIS) to reduce effects on water quality should an accidental spill occur.	As described in IAAC-108, the Surface Water Monitoring and Management Plan will include monitoring of water quantity (stream flows, lake levels) and water quality downstream of the TMF at the MacLellan site and the MRSAs at the MacLellan and Gordon sites. The objectives of the plan will be to: • Establish and/or maintain reference monitoring sites to differentiate between natural seasonal or climatic variability in surface water quantity and quality and potential Project effects as the Project progresses. • Monitor potential changes in lake level and stream flows downstream of the TMF and MRSAs, to validate water balance model predictions and assess the effectiveness of mitigation measures, in response to construction, operation, and closure of the Gordon and MacLellan sites. • Monitor potential change in water quality in lakes and stream downstream of the TMF and MRSAs, to validate water quality model predictions and assess the effectiveness of mitigation measures, in response to construction, operation, and closure of the Gordon and MacLellan sites. Maintain a surface water quantity and surface water quality monitoring network sufficient to evaluate if quantitative thresholds are exceeded and to assess effectiveness of subsequent adaptive management measures. As described in IAAC-110, mitigation measures that could be implemented in the unlikely event that water quality in the collection ponds is found to exceed the limits are:

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				The application of relevant actions in the Erosion and Sediment Control Plan (Chapter 23, Section 23.5.13). The application of relevant actions in the Surface Water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to reduce effects on water quality/quantity from the use and management of water for the Project. The application of relevant actions in the Closure Plan as described in Chapter 23, Section 23.5.18 of the EIS. Mitigation measures to reduce effects on fish and fish habitat are largely related to those reducing effects on surface water (above) in addition to those described in Chapter 10, Section 10.4.1.3 and 10.4.2.3 of the EIS: • Restricting water withdrawal from the Keewatin River to <10% of instantaneous discharge. • Requiring heavy machinery working near water to be kept in good working condition, to be re-fueled no closure than 50 m from any waterbody or watercourse, and to be filled with biodegradable hydraulic fluids. • Using a heat exchanger, when required, to heat or cool water from Wendy and East pits prior to discharge to Farley Lake during construction and water from the groundwater interceptor wells prior to discharge to Gordon and Farley lakes to maintain important behavioral cues for fish (i.e., spawning and overwintering cues). • Mitigation measures for post-closure, including: – Designing open pit outlets so they are impassable to fish, to discourage fish from colonizing open pits in post-closure (Chapter 10, Section 10.4.1.3) – Directing contact water from the collection ditches around the MRSA, overburden stockpile, and mine infrastructure to the open pit during decommissioning/closure to reduce the filling period. – Continuing to operate the groundwater interceptor wells during closure while the open pit fills with water and progressively reducing their pumping rates until the water level in the open pit reaches the elevation of the surrounding groundwater table. – Implementing progressive rehabilitation (placement of a vegetated soil cover) of the overburden and MRSAs to reduce infiltration rates. The application of relevant actions in the Fish Habitat Offsetting Plan (Chapter 23, Section 23.5.15 of the EIS) to offset lost habitat area where harmful alteration, disruption, or destruction of fish habitat will occur, which could affect fish harvesting. The application of relevant actions in the Environmental Effects Monitoring Plan (EEMP) to verify the Project's compliance with the applicable mining effluent regulations (Chapter 23, Section 23.5.17). An EEMP will be developed in accordance with the *Metal and Diamond Mining Effluent Regulations* (MDMER) under the federal *Fisheries Act*, and the *Metal Mining Technical Guidance for Environmental Effects Monitoring* by ECCC (2012).	• Treatment of contact water with treatment technologies selected based on the concentration of the parameters of concern (e.g., coagulation/flocculation and sedimentation or filtration, ion exchange, chemical precipitation and/or biological treatment). • Piping of contact water from the Gordon site further downstream to waterbodies (e.g., Ellystan Lake) or watercourses (i.e., Hughes River) with greater assimilative capacity. The conceptual Fish Habitat Offsetting Plan is described in IAAC-53 which includes the following preliminary proposed offsets for fish habitat, which in turn is anticipated to offset effects on fish harvesting: • Construction of an approximately 1,200 m long, 8 m wide diversion channel between Gordon and Farley lakes to replace the existing diversion channel with habitat enhancement features to improve fish use and production. • Replacement of two adjacent culverts on the Burnt Timber Mine access road that currently prevent upstream and downstream fish passage between Waban Creek and headwater lakes in the Waban Creek watershed (e.g., Foster Lake, Expansion Lake, Franklin Lake, McVeigh Lake) with a clear-span bridge. • Replacement of three adjacent culverts on the Burnt Timber Mine access road that currently prevent the upstream passage of fish between Waban Creek and Wasekwan Lake with a clear-span bridge. • Funding of a lake sturgeon research and assessment program on the Hughes River as a complementary measure.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Fish and Fish Habitat					
Existing Conditions MCCN identified the following fish species in the vicinity of the Project: • lake trout • jackfish (northern pike) • pickerel (walleye) • suckers • sturgeon • whitefish • tullibee • perch MCCN stated that there are pickerel spawning sites in the RAA. MCCN stated that historical mine waste has affected water quality, harming fish and fish habitat. MCCN identified Lake Wetikoeekan as a pickerel spawning area and identified several fish-bearing water sources in the vicinity of the Project. **Potential Project Effects** MCCN expressed doubt about Project-specific reclamation planning and whether waterbodies and fish habitat	Chepil Lake, Churchill River system, Granville Lake Watershed, and Lynn Lake are within the RAA outlined in the EIS. The following locations are outside the RAA outlined in the EIS(distance from PDA): • Churchill River (32 km) • Drybrough on Laurie River (40 km) • Dunphy Lakes (34.5 km) • Eager Lake (49.5 km) • Eaton Lake (29 km) • Frances Lake (6.5 km) • Lake Wetikoeekan (7 km) • Laurie Lake (54 km) • Laurie River on the north end of Glasspole Lake (39.5 km) Eve Lake could not be located. Additional information is required to confirm its location. The 1 km buffer of 1 location related to surface water and	n/a	The EIS considers the fish species of Indigenous interest as learned through engagement and project-specific TLRU studies. The influence of engagement on the assessment of fish and fish habitat is described in the EIS in Chapter 10, Section 10.2.1. Focal species included in the assessment include northern pike, walleye, forage species, and whitefish. The selection of focal species enables identification of avoidance and mitigation measures that would reduce potential effects to most, if not all, fish species and their habitats (Chapter 10, Section 10.1.3). The EIS discusses Project pathways that may affect fish and fish habitat, mitigations and residual effects in Chapter 10, Sections 10.4.1.3, 10.4.2, 10.4.3, 10.7.1; mitigations	• Wetland buffering, silt fencing, and timing of vegetation clearing as described in the vegetation and wetlands assessment (Chapter 11, Section 11.4.3.2) will reduce habitat loss or loss of traditionally important species. Mitigation measures to reduce effects on surface water (quantity and quality) are described in Chapter 9, Sections 9.4.2.2 and 9.4.3.2 of the EIS. By reducing effects on surface water, it is anticipated that effects on fish/fish harvesting will also be reduced. These measures include: • Constructing water management structures and grading access roads/perimeter of open pits to collect, divert, and release non-contact water to the environment and to collect, store, and re-use contact water (stored at the TMF) to meet demand in the processing plant. Excess water will only be discharged after reuse and treatment, as necessary. This reduces the water demand and reduces/eliminates discharge of water from the TMF to the environment and associated water quality effects. The treatment of contact water will meet applicable federal and provincial regulatory requirements, prior to discharge to the environment, if required. • Intercepting groundwater flowing into the open pit (Chapter 8, Section 8.4.2.2) thereby reducing the volume of contact water and reducing the potential dewatering of Gordon and Farley lakes. • Maintaining existing drainage patterns with the use of culverts. Inspection of culverts periodically to remove accumulated material and debris to avoid erosion, flooding, habitat damage, property damage, and mobilization of sediment to downstream waterways. • Designing contact water collection ditches to reduce standing water and to withstand a 1 in 25-year flood and designing collection ponds with active water storage and for a 1 in 100-year storm. These features reduce the chance of overflowing and downstream contamination, should heavy precipitation occur.	As described in IAAC-26, a Closure Plan will be developed to restore Project sites to a satisfactory condition, in accordance with provincial legislation and guidelines, such that no long-term adverse effects on surface water quality or aquatic biota in the downstream receiving environment will occur. The Closure Plan will include methods for progressive reclamation and decommissioning of the Project and for re-establishing drainage patterns at both sites. The objectives of the Closure Plan include: • Stabilizing Project sites to physically, chemically, and biologically encouraging terrestrial and aquatic repopulation. • Providing reasonable paths for surface drainage. • Discharging contact water in compliance with effluent surface water and groundwater quality criteria. The conceptual Fish Habitat Offsetting Plan is described in IAAC-53 which includes the following preliminary proposed offsets for fish habitat, which

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
would return to their natural condition following mining operations, stating that previous reclamation activities on other projects have not been sufficient. MCCN reported the potential for negative effects on fish health as a result of the potential introduction and spreading of contaminants from tailings management facilities into nearby waterbodies. Study participants reported dead fish in the Lynn Lake area as a result of pollution in Lynn Lake and the surrounding rivers and streams due to past mining activities and a landfill.	fishing (Keewatin River) was identified in the MCCN TLRU Report that overlap the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to surface water and fishing were identified in the MCCN TLRU Report that overlap the LAA outlined in the EIS. The 1 km buffer of approximately 38 locations related to surface water and fishing were identified in the MCCN TLRU Report that overlap the RAA outlined in the EIS.		for effects on fish and fish habitat in Chapter 11, Section 11.4.3.2; and Chapter 15, Section 15.4.4.2; and influence of Indigenous engagement, effects pathways, mitigations and residual effects in Chapter 17, Sections 17.1.1 to 5, 17.2.6, 17.2.14, 17.4.2.2, 17.4.2.3, 17.4.5.1 and 2, 17.7.1 and 4, and 17.10; Chapter 19, Sections 19.1.2.2, 19.2, and 19.9.3; and Chapter 23	• Designing collection pond inlets and outlets to reduce water scour and meet sedimentation requirements. Sediment and erosion control measures will also be used during construction to reduce water quality effects, including effects to traditionally harvested species such as fish. • Treating domestic waste (approximately 60,000 L/day) at the sewage treatment plant at the MacLellan site, to meet applicable regulatory requirements before discharging to the environment, reducing effects on water quality downstream. • Aerating Wendy and East pits and groundwater from the interceptor wells to improve water quality prior to dewatering. • Treating and handling of building material that is used in water to avoid the release or leaching of substances that would affect water quality downstream. • Designing the TMF with two cells to allow progressive development during operation to reduce freshwater requirements. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF. • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake. • Mitigation measures for post closure, including: – Implementing passive treatment options (e.g., controlled pit stratification, fertilizer amendment, flow segregation) in the open pit should monitoring show that pit water quality is not suitable for release to the environment during the anticipated 21 years to fill the open pit with contact water at the conclusion of mine operation. – Operating the TMF as a non-discharging facility during operation through decommissioning/closure. – Expediting re-filling of open pits during decommissioning/closure to reduce exposure of pit walls. – Refilling open pits with contact water at closure to return groundwater levels to near baseline conditions. Mitigation measures to reduce effects on fish health are largely related to those reducing effects on surface water quality (above) in addition to those described in Chapter 10, Section 10.4.1.3 and 10.4.2.3 of the EIS: • Designing open pit outlets so they are impassable to fish, to discourage fish from colonizing open pits in post-closure (Chapter 10, Section 10.4.1.3). • Directing contact water from the collection ditches around the MRSA, overburden stockpile, and mine infrastructure to the open pit during decommissioning/closure to reduce the filling period. • Continuing to operate the groundwater interceptor wells during closure while the open pit fills with water and progressively reducing their pumping rates until the water level in the open pit reaches the elevation of the surrounding groundwater table.	in turn is anticipated to offset effects on fish harvesting: • Construction of an approximately 1,200 m long, 8 m wide diversion channel between Gordon and Farley lakes to replace the existing diversion channel with habitat enhancement features to improve fish use and production. • Replacement of two adjacent culverts on the Burnt Timber Mine access road that currently prevent upstream and downstream fish passage between Waban Creek and headwater lakes in the Waban Creek watershed (e.g., Foster Lake, Expansion Lake, Franklin Lake, McVeigh Lake) with a clear-span bridge. • Replacement of three adjacent culverts on the Burnt Timber Mine access road that currently prevent the upstream passage of fish between Waban Creek and Wasekwan Lake with a clear-span bridge. • Funding of a lake sturgeon research and assessment program on the Hughes River as a complementary measure. A detailed Closure Plan that conforms with *The Mines and Minerals Act – Mine Closure Regulation* will be submitted prior to the commencement of Project construction. As described in IAAC-48 and IAAC-55, details of Aquatic Effects Monitoring Plan (AEMP) will be developed during the permitting phase of the Project. However, it is expected that this AEMP will include monitoring and adaptive management of groundwater, surface water quantity surface water quality, and fish and fish habitat at the Gordon site. Monitoring is expected to include data collection "before" and "after" mine construction at "impact" sites downstream of the Project and at

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				• Implementing progressive rehabilitation (placement of a vegetated soil cover) of the overburden and MRSAs to reduce infiltration rates. Implementation of a Closure Plan as described in Chapter 23, Section 23.5.18 of the EIS. The application of relevant actions in the Environmental Effects Monitoring Plan (EEMP) to verify the Project's compliance with the applicable mining effluent regulations (Chapter 23, Section 23.5.17). An EEMP will be developed in accordance with the *Metal and Diamond Mining Effluent Regulations* (MDMER) under the federal *Fisheries Act*, and the *Metal Mining Technical Guidance for Environmental Effects Monitoring* by ECCC (2012). The application of relevant actions in the Surface water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to address unanticipated effects to surface water through adaptive management. • Implementing passive treatment options (e.g., controlled pit stratification, fertilizer amendment, flow segregation) in the open pit should monitoring show that pit water quality is not suitable for release to the environment during the anticipated 21 years to fill the open pit with contact water at the conclusion of mine operation. • Operating the TMF as a non-discharging facility during operation through decommissioning/closure. • Expediting re-filling of open pits during decommissioning/closure to reduce exposure of pit walls. • Refilling open pits with contact water at closure to return groundwater levels to near baseline conditions. • Directing contact water from the collection ditches around the MRSA, overburden stockpile, and mine infrastructure to the open pit during decommissioning/closure to reduce the filling period. • Designing the TMF with two cells to allow progressive development during operation to reduce freshwater requirements. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF. • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake. Implementation of a Closure Plan as described in Chapter 23, Section 23.5.18 of the EIS. Mitigation measures to reduce effects on fish and fish habitat are largely related to those reducing effects on surface water (above) in addition to those described in Chapter 10, Section 10.4.1.3 and 10.4.2.3 of the EIS: • Designing open pit outlets so they are impassable to fish, to discourage fish from colonizing open pits in post-closure. • Continuing to operate the groundwater interceptor wells during closure while the open pit fills with water and progressively reducing their pumping rates	"control" sites in unaffected waterbodies to allow for statistical assessment of various groundwater, stream flow, water quality, and fish population metrics in a 'before-after control-impact' type study design. The AEMP will also include the location, timing, frequency, and duration of sampling, the sampling methods to be used, the fish tissue parameters to be monitored, and the quantitative thresholds that will trigger adaptive management actions. Adaptive management triggers will be developed to provide an early indication of any unanticipated increases in fish tissue metal concentrations that may pose lethal or sublethal effects to fish so that mitigation measures can be altered or added, if necessary, before any fish tissue threshold is exceeded. These adaptive management actions may include, but not necessarily limited to: • A hierarchical plan to investigate the potential causes of trigger level exceedances to determine if the exceedance is due to measurement error, equipment malfunction, a single anomalous event, a regional phenomenon, or a Project-related effect. • A hierarchical plan to implement remedial actions to supplement existing mitigation measures or to implement new mitigation measures to reduce or eliminate the trigger exceedance. • A plan to report Project-related trigger or threshold exceedances to the appropriate federal and provincial agencies, and to local Indigenous groups. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				until the water level in the open pit reaches the elevation of the surrounding groundwater table. • Implementing progressive rehabilitation (placement of a vegetated soil cover) of the overburden and MRSAs to reduce infiltration rates. • Using a heat exchanger, when required, to heat or cool water from Wendy and East pits prior to discharge to Farley Lake during construction and water from the groundwater interceptor wells prior to discharge to Gordon and Farley lakes to maintain important behavioral cues for fish (i.e., spawning and overwintering cues). The application of relevant actions in the Fish Habitat Offsetting Plan (Chapter 23, Section 23.5.15 of the EIS) to offset lost habitat area where harmful alteration, disruption, or destruction of fish habitat will occur. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Vegetation and Wetlands					
Existing Conditions MCCN identified the following plant species in the vicinity of the Project: • blueberry • chokecherry • cranberry • raspberry • medicinal plants **Potential Project Effects** MCCN expressed concern that important plant resources will be lost during vegetation clearing and would also take time to regenerate post-closure, especially if reclamation is partially completed. MCCN reported the potential for negative effects on plants, including medicines and other important resources, as a result of the potential introduction and spreading of contaminants including air pollution and airborne dust.	Lynn Lake is within the RAA outlined in the EIS. The 1 km buffer of approximately 1 location that may be related to vegetation and wetlands (cultural continuity) was identified in the MCCN TLRU Report that overlap the PDA outlined in the EIS. The 1 km buffer of approximately 8 locations related to vegetation and wetlands (cultural continuity) were identified in the MCCN TLRU Report that overlap the LAA outlined in the EIS. The 1 km buffer of approximately >50 locations related to vegetation and wetlands (cultural continuity) were identified in the MCCN TLRU Report that overlap the RAA outlined in the EIS.	n/a	Chapter 11: Table 11-4 identifies plants of Indigenous interest learned through engagement and project-specific TLRU studies that were considered in the assessment. Table 11-4 includes the species subsequently identified in the MCCN TLRU Report. Section 11.4.3.1 (page 11.31) Changes in plant community diversity from dust from road use Section 11.7.1. (page 11.53) Significance of the effects on vegetation and wetlands Chapter 6: Section 6.4.1.3 (page 6.51) Mitigations for effects of dust and emissions	Mitigation measures for plants during clearing include those described in the EIS (Chapter 11, Section 11.4.2.2, 11.4.3.2, 11.4.5.2): • Wetland buffering, silt fencing, and timing of vegetation clearing (e.g., during dry/frozen conditions) as described in the vegetation and wetlands assessment will reduce habitat loss or loss of traditionally important species. • A protective layer such as matting or biodegradable geotextile and clay ramps or other approved materials will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential for rutting, admixing or compaction. • Limit construction footprint (i.e., PDA) to the extent possible to reduce the area of vegetation clearing. • A native seed mix will be used to assist in reducing invasive plant species spread and establishment as well as for erosion control on exposed soils. • Topsoil and subsoil piles will be monitored for invasive plant species growth during construction and corrective measures (e.g., spraying, mowing, hand-pulling) will be implemented to avoid growth and establishment. • Certified No.1 seed will be used to reseed areas, unless Certified No. 1 seed is not available for selected reclamation species (i.e., native species). • Unless a certificate of weed analysis can be provided, construction material sources used for supplies of sand, gravel, rock, straw, and mulch will be visually inspected to determine whether they are free of invasive species propagules to the extent possible. If sources are suspected as having invasive species propagules, they should be sampled, and lab analyzed to determine whether they meet the requirements of the responsible regulatory agency prior to obtaining or transporting material to the Project site. If	As described in IAAC-149, measures to manage clearing activities on Project sites to reduce effects on plant resources/re-generation post-closure include: • Vegetation clearing will be conducted using mechanical/manual practices. • Sensitive areas adjacent to the PDA, such as wetlands, will be buffered by 30 m and clearly marked prior to clearing. • Limits of vegetation clearing will be clearly marked and marking maintained for the duration of construction. • The limits of vegetation clearing will be visually examined to confirm limits are clearly marked and that clearing works stay within approved work areas. • Grading will be directed away from wetlands, where practicable. • Cross drainage will be maintained to allow water to move freely from one side of the road to the other in

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN expressed doubt about Project-specific reclamation planning and whether the land would return to its natural condition following mining operations, stating that previous reclamation activities on other projects have not been sufficient. Study participants reported dead vegetation in the Lynn Lake area as a result of pollution in Lynn Lake and the surrounding rivers and streams due to past mining activities and a landfill.				sampling cannot be completed, post construction monitoring for invasive species will be completed. • If pesticide is required, a pesticide use permit will be obtained under The Environment Act (Manitoba). • Reducing the removal of vegetation in wetlands to the extent practicable. • Conducting ground level cutting/mowing/mulching of wetland vegetation instead of grubbing, where practicable. • Reducing grading within wetland boundaries unless required for site specific purposes. • Using frost packing, snow, ice, geotextile swamp mats or access mats for access through wet areas. • Native areas disturbed by the Project will be reseeded using a native upland seed mix; however, the tailings management facility will be partially capped and seeded with a reclamation seed mix. The application of relevant actions in the Conceptual Closure Plan (Chapter 23, Section 23.5.18) of the EIS. Dust mitigation measures, as described in the air quality assessment (Chapter 6) to reduce dust emissions and deposition including: • Enclosure of the mill feed storage area, crushing plant conveyor, and the fine ore stockpile to reduce fugitive dust emissions • Use of dust collection/control systems at the primary crusher and the processing plant • Optimization of haul roads, infrastructure to reduce transport distances and areas of exposed dry surfaces • Regular maintenance/inspections of haul roads to monitor loose dust and track-out • Dust suppression (application of water or, if required, chemical dust suppressants) during dry periods • Speed limits on the on-site haul roads (35-40 km/h) • Dust sweeping and truck wheel washing stations prior to entering onto PR 391 to reduce track-out • Stabilization (vegetation or covering) of topsoil and overburden stockpiles The application of relevant actions in the Air Quality Management Plan (Chapter 23, Section 23.5.7) to reduce effects on the environment from dust and air emissions. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	areas of permanent or temporary access roads. As described in IAAC-46, The Air Quality Monitoring plan will have adaptive management based on defined particulate matter concentrations at prescribed distances from dust sources. As described in IAAC 123, a dust control efficiency of 75% on the haul roads and access roads will be achieved throughout the life of the Project by application of water at a minimum frequency of every 8 hours during summer and increasing the watering frequency in dry summer days and high wind conditions and if measured ambient PM concentrations are in exceedance of the Manitoba AAQC. Chemical dust suppressants will be applied as an alternative option to watering during high wind conditions or if measured ambient PM concentrations are in exceedance of the Manitoba AAQC and if an increase of watering is determined ineffective or unfeasible. As described in IAAC-125, if the ambient air quality monitoring program indicates that the ambient TSP, PM_{10} or $PM_{2.5}$ concentrations are greater than Manitoba AAQC, additional mitigations to reduce dust emissions will be implemented. The additional dust mitigation measures could include: • Increased watering frequency on haul roads and access roads. • Application of chemical dust suppressants on haul roads and access roads. • Temporary suspension of construction and mining activities during high wind conditions. As described in detail in IAAC-125 and IAAC-127, continuous meteorological monitoring and continuous ambient air

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					monitoring of ambient TSP, PM_{10} and $PM_{2.5}$ concentrations will be implemented during Project construction and operation in conjunction with emissions mitigation to assess the effectiveness of the dust mitigation and to evaluate the need for more rigorous dust mitigation. Monitoring stations will be installed to measure both, background ambient particulate matter (PM) concentrations (in an upwind location from the Project sites) and ambient particulate matter concentrations influenced by the Project (in downwind locations). Continuous meteorological monitoring stations (each with a 10 m tower) will be installed at Gordon and MacLellan sites and will provide real time meteorological data to assist in the implementation of adaptive management for dust Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Wildlife and Biodiversity					
Existing Conditions MCCN identified the following species in the vicinity of the Project: • badger • beaver • black bear • caribou • duck • fisher • fox • goose • lynx • marten • mink • moose • muskrat • otter • porcupine • rabbit • racoon • squirrel • wolf • wolverine MCCN reported that caribou used to be present in the Lynn Lake area near McVeigh area, but noted that recently (since approximately 2018) caribou began migrating elsewhere as a result of mine operations and a decline in caribou food sources resulting from forest fires.	Black Sturgeon Reserve, Chepil Lake, Elizabeth Lake, Hughes Lake, Lynn Lake, and a portion of the travel route from Pukatawagan to Lynn Lake are within the RAA outlined in the EIS. The following locations are outside the RAA outlined in the EIS (distance from PDA): • Frances Lake (6.5 km) • McVeigh Lake (10 km) The 1 km buffer of 4 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the LAA outlined in the EIS. The 1 km buffer of approximately >35 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the RAA outlined in the EIS.	MCCN members recommend a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	The EIS considers wildlife of Indigenous interest as learned through engagement and project-specific TLRU studies. The influence of engagement on the assessment of wildlife and wildlife habitat is described in the EIS in Chapter 10, Section 12.1.2. Focal species included in the assessment include moose, black bear, marten, woodland caribou and wolverine, among others (Chapter 12, Table 12-1). The selection of focal species enables identification of avoidance and mitigation measures that would reduce potential effects to most, if not all, wildlife and their habitats. Other relevant sections include Chapter 12: Section 12.1.2 (page 12.4) Influence of engagement on the assessment Section 12.3 (page 12.30) Project interactions with wildlife and wildlife habitat Section 12.4.3 (page 12.53) Assessment of changes in wildlife mortality risk Section 12.4.3.2 (page 12.54) Project pathways for effects on wildlife mortality Section 12.4.3.3 (page 12.55) Mitigation measures for wildlife mortality risk Section 12.4.3.4 (page 12.58) Residual effects on wildlife mortality risk	The application of relevant actions in the Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.14) to reduce unanticipated effects on wildlife and wildlife habitat using an adaptive management strategy. Mitigation measures for wildlife and wildlife habitat include those described in the EIS (Chapter 12, Section 12.4.2.3, 12.4.3.3, and 12.4.4.3): • Design for limitation of construction footprint (i.e., PDA) to the extent possible. • Design for use of down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA. • Design for maintenance of a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Design for restriction of unauthorized access to habitat adjacent to the PDA. • Design for provision of low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Design for scheduling vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2019). If activities that could result in risk of harm cannot be avoided, Alamos will develop and implement a Project-specific Wildlife Monitoring and Management Plan that outlines how risk of harm will be managed in accordance with ECCC guidance. This plan will be developed in liaison with ECCC and federal agencies. • Flag environmentally sensitive areas (e.g., seeps and springs, mineral licks, dens, roosts, stick nests, hibernacula) prior to clearing and construction, and evaluation of the features for additional mitigation measures (e.g., setbacks). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31) and breeding season for birds (Zone C7; May 7 to August 7). If habitat tree removal or general tree clearing is required during the maternity roosting period, a qualified biologist will review the trees to make a determination on occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the Wildlife Monitoring and Management Plan. Report to the Wildlife and Fisheries Branch of DARD for direction on follow-up actions in necessary. • Demolish existing buildings and infrastructure outside of the nesting window for birds (Zone C7; May 7 to August 7) and the maternity roosting period for	As described in IAAC-11 and IAAC-164, a wildlife monitoring and management plan (WMMP) will be developed for the Project. Describing the location of interventions, planned protocols, lists of measured parameters, analytical methods employed, schedule, and resources required as well as parameters to be monitored, methodology and equipment to be used, frequency, duration of monitoring, adaptive management triggers, and reporting. The WMMP includes the commitment to continue the remote camera survey (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and sharing the results with provincial wildlife authorities and interested Indigenous Nations. The objective of the remote camera study is to assess the presence/absence of woodland caribou in the LAA and RAA and the measurable parameter for the remote camera study is the presence/ absence of woodland caribou in the LAA and RAA. Decision triggers and thresholds for action will be incorporated into the WMMP to outline planned actions if woodland caribou are detected within the LAA or RAA, depending on the Project phase. As described in Table IAAC-163-2, Project-specific activity restrictions for sensitive wildlife areas or features have been developed and will be adhered to in the absence of provincial guidelines. As described in Table IAAC-163-3, additional mitigation measures for wildlife include: • Adhere to the provincial recommended development setback and timing restriction guidelines for birds and the
Potential Project Effects MCCN expressed concern that the Project would result in a loss of wildlife and wildlife habitat and would change wildlife movement in the vicinity of the Project due to vegetation clearing, and					

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
noise and vibrations during construction and operations; the Project would also result in potential wildlife mortality due to contamination.			Section 12.7 (page 12.76) Determination of significance	bats (May 1 to August 31) as per the Wildlife Monitoring and Management Plan. • Design for enclosure of mill feed storage area and use of wet scrubbers (or equivalent). • Design of water management facilities to collect and treat (as required) surplus contact water and design for cyanide detoxification. • Manage vegetation around collection ponds and the TMF and consider additional mitigation measures (e.g., fencing, netting, bird/bat deterrents) if monitoring identifies concerns regarding wildlife use of these areas. • Bird deterrents, if required, to keep migratory birds from using the TMF and contact ponds during construction and operation and/or the open pit during closure. • Project infrastructure and facilities designed to avoid sensitive areas (e.g., watercourses, important habitat types) to the extent possible, within watershed boundaries, and PDA reduced to the extent practical. • Design and maintenance for control of fugitive dust emissions from roads, material handling, and storage areas/stockpiles and from equipment emissions. • Design for administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment. • Design for adherence to applicable Transport Canada emission requirements for new mobile equipment on site. • Design for use of perimeter berms and runoff and contact-water collection ditches. • Design for fuel storage in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Design of sewage treatment plant and water management facilities to treat effluent to levels that will meet applicable federal and provincial guidelines of toxicity. • Dispose and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Maintain cyanide concentrations below guidelines. Project activities will be aligned with the standards of practice set out in the International Cyanide Management Code. • Manage vegetation around collection ponds and the TMF to deter wildlife and consider additional mitigation measures (e.g., fencing, netting, bird/bat deterrents) if monitoring identifies concerns regarding wildlife use of these areas. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the	Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering, install amphibian exclusion screens on intake pumps. • Alamos will continue the remote camera survey to share the results with provincial wildlife authorities and interested Indigenous Nations (e.g., for woodland caribou and wolverine). • Alamos will undertake pre-constructions surveys for bat hibernacula and raptor nests. • Alamos will monitor beaver activity to help manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk. • Noise and light abatement measures for machinery and buildings will be used where

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	practicable to reduce sensory disturbance to wildlife. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Socioeconomic (Community Wellbeing)					
Existing Conditions MCCN reported that harvesting contributes to socioeconomic wellbeing. **Potential Project Effects** MCCN expressed concerns about the potential for impacts due to increased worker population and human activity in the Project area. MCCN reported that loss of medicine and other harvested resources could have corresponding impacts on knowledge transmission in the vicinity of the Project because of the experiential nature of learning.	No socio-economic locations were specifically identified in the mapping within the TLRU Report.	n/a	Chapter 14: Community Services, Infrastructure, and Wellbeing Section 14.1.2 (page 14.2) Influence of engagement on this assessment. Section 14.3 (page 14.27) Project interactions with community services, infrastructure, and wellbeing Section 14.4 (page 14.31). Assessment of potential effects and mitigation measures of the project on community services, infrastructure, and wellbeing Section 14.7 (page 14.57) Determination of significance Chapter 19 Assessment of Potential Effects to Indigenous Peoples Section 19.9.3.1. (page 19.87) Assessment of	Mitigation measures for the potential increase in human activities affecting harvesting and land-based learning which may have socio-economic effects are described in Chapter 15, Section 15.4.4.2 of the EIS and include: • Workers will be prohibited from bringing firearms and fishing gear to the sites while working to limit competition for wildlife and fish species of value to resource users. • Work schedules will be implemented for Project construction workers (subject to FIFO employment) to deter workers from hunting locally outside of working hours during a shift. • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources. • Project lighting will be limited to that which is necessary for safe and efficient Project activities. Directional lighting will be used to limit the transmission of light outside of the PDA. Portable lighting equipment will be positioned to limit visibility at nearby receptors, to the extent feasible. Mitigation measures to enhance beneficial effects of the Project and mitigate effects to socio-economic wellbeing, include: • Inform residents and Indigenous Nations of job and procurement opportunities during all Project phases and implement a policy of local hire	As described in IAAC-11, IAAC-164, A wildlife monitoring and management plan will be developed for the Project Describing the location of interventions, planned protocols, lists of measured parameters, analytical methods employed, schedule, and resources required as well as parameters to be monitored, methodology and equipment to be used, frequency, duration of monitoring, adaptive management triggers, and reporting. The WMMP includes the commitment to continue the remote camera survey and sharing the results with provincial wildlife authorities and interested Indigenous Nations (for woodland caribou, moose, wolves, and other wildlife species in the RAA) and sharing the results with provincial wildlife authorities. The objective of the remote camera study is to assess the presence/absence of woodland caribou in the LAA and RAA and the measurable parameter for the remote camera study is the presence/absence

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
			impacts on Indigenous or treaty rights.	where priority is given to the workers from the LAA, followed by other parts of the RAA, other parts of Manitoba, and other parts of Canada • Post job qualifications in advance and identify available training programs and providers so that local and Indigenous residents can acquire the necessary skills and qualify for potential Project-related employment. • Identify potential shortages of workers with specific skill requirements, and work with training and education facilities, Indigenous Nations, and local communities to increase opportunities for local community members to obtain training required for Project participation. Design and practice to reduce noise and vibration which could affect harvested (wildlife)resources as described in Chapter 7, Sections 7.4.1.3 and 7.4.2.3 of the EIS including: • Locating large stationary machinery inside buildings where possible. • Enclosing the conveyor between buildings in the processing plant. • Use of exhaust mufflers on mobile equipment. • Noise insulating panels in work camp building walls and roof. • Air conditioning system to allow for doors/windows of the work camp to be closed to reduce outdoor noise indoors • Reducing idling of heavy fleet when not in operation, where practical. • Blasting using a blast design with a maximum of 207.9 kg explosive per time, only one hold/delay in the blast, and a minimum time delay between holes of 8 milliseconds. • Using a reduced blast charge of 43 kg for receptor 76 and 73 (Indigenous receptors) near the Gordon site and monitoring/engagement to confirm if blast can be increased for those areas. The application of relevant actions in the Noise Monitoring Plan (Chapter 23, Section 23.5.8) to reduce effects on the environment from noise disturbances. Mitigation measures for the loss of traditionally harvested resources such as fish, plants, and wildlife are described in rows above referencing Chapter 10 (Section 10.4.1.3 and 10.4.2.3) Chapter 11 (Sections 11.4.2.2, 11.4.3.2, 11.4.4.2), and Chapter 12 (, Sections 12.4.2.3, 12.4.3.4, and 12.4.4.3). The application of relevant actions in the Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.14) to reduce unanticipated effects on wildlife and wildlife habitat using an adaptive management strategy. Mitigation measures for plants (including traditionally harvested plants) are described in the EIS (Chapter 11, Section 11.4.2.2, 11.4.3.2, 11.4.5.2): • Wetland buffering, silt fencing, and timing of vegetation clearing (e.g., during dry/frozen conditions) as described in the vegetation and wetlands assessment will reduce habitat loss or loss of traditionally important species. • A protective layer such as matting or biodegradable geotextile and clay ramps or other approved materials will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential for rutting, admixing or compaction.	of woodland caribou in the LAA and RAA. Decision triggers and thresholds for action will be incorporated into the WMMP to outline planned actions if woodland caribou are detected within the LAA or RAA, depending on the Project phase. As described in Table IAAC-163-2, Project-specific activity restrictions for sensitive wildlife areas or features have been developed and will be adhered to in the absence of provincial guidelines. As described in Table IAAC-163-3, additional mitigation measures for wildlife include: • Adhere to the provincial recommended development setback and timing restriction guidelines for birds and the Project-specific activity restriction guidelines, including for bird species (e.g., raptors) that breed outside of the breeding period for migratory birds. • The Contractor and relevant Project staff shall be provided with relevant results of pre-construction surveys to identify known locations of environmentally sensitive features (e.g., migratory bird nests, burrows). • Schedule vegetation clearing activities to occur outside the woodland caribou calving and calf-rearing period from May 1 to June 30. In the unlikely event that woodland caribou are detected within the LAA, site preparation activities will also be postponed until after June 30. • Follow best management practices for open pit dewatering; rescue and relocate amphibians prior to dewatering, install amphibian exclusion screens on intake pumps. • Alamos will continue the remote camera survey to share the results

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				• Limit construction footprint (i.e., PDA) to the extent possible to reduce the area of vegetation clearing. • A native seed mix will be used to assist in reducing invasive plant species spread and establishment as well as for erosion control on exposed soils. • Topsoil and subsoil piles will be monitored for invasive plant species growth during construction and corrective measures (e.g., spraying, mowing, hand-pulling) will be implemented to avoid growth and establishment. • Certified No.1 seed will be used to reseed areas, unless Certified No. 1 seed is not available for selected reclamation species (i.e., native species). • Unless a certificate of weed analysis can be provided, construction material sources used for supplies of sand, gravel, rock, straw, and mulch will be visually inspected to determine whether they are free of invasive species propagules to the extent possible. If sources are suspected as having invasive species propagules, they should be sampled, and lab analyzed to determine whether they meet the requirements of the responsible regulatory agency prior to obtaining or transporting material to the Project site. If sampling cannot be completed, post construction monitoring for invasive species will be completed. • If pesticide is required, a pesticide use permit will be obtained under The Environment Act (Manitoba). • Reducing the removal of vegetation in wetlands to the extent practicable. • Conducting ground level cutting/mowing/mulching of wetland vegetation instead of grubbing, where practicable. • Reducing grading within wetland boundaries unless required for site specific purposes. • Using frost packing, snow, ice, geotextile swamp mats or access mats for access through wet areas. • Native areas disturbed by the Project will be reseeded using a native upland seed mix; however, the tailings management facility will be partially capped and seeded with a reclamation seed mix. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	with provincial wildlife authorities and Interested Indigenous Nations (e.g., for woodland caribou and wolverine). • Alamos will undertake pre-constructions surveys for bat hibernacula and raptor nests. • Alamos will monitor beaver activity to help manage and regulate the effects of beaver activity on the surface hydrology of Gordon Lake and Farley Lake, retain important fish habitat, and reduce Project-related beaver mortality risk. • Noise and light abatement measures for machinery and buildings will be used where practicable to reduce sensory disturbance to wildlife. As described in IAAC-134, the Noise and Vibration Management Plan will include protocols that would serve to inform communities and land users of blasting or an anticipated blasting schedule ahead of time such that local receptors can prepare, and the resulting nuisance and startle responses are reduced. IAAC-135 provides a high-level summary of the Noise and Vibration Management Plan including details on the measurement parameters; schedule; methods and characteristics of monitoring activities; reporting mechanisms; regulatory instruments; reporting; and information sharing. As described in IAAC-149, measures to manage clearing activities on Project sites to reduce effects on plant resources/re-generation post-closure include: • Vegetation clearing will be conducted using mechanical/manual practices. • Sensitive areas adjacent to the PDA, such as wetlands, will be

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					buffered by 30 m and clearly marked prior to clearing. • Limits of vegetation clearing will be clearly marked and marking maintained for the duration of construction. • The limits of vegetation clearing will be visually examined to confirm limits are clearly marked and that clearing works stay within approved work areas. • Grading will be directed away from wetlands, where practicable. Cross drainage will be maintained to allow water to move freely from one side of the road to the other in areas of permanent or temporary access roads Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Human Health					
Existing Conditions MCCN explained that spring water is important for individuals' health. MCCN relied and continue to rely on the Project area, including waterbodies in the RAA, for practices related to water, including collecting drinking water. MCCN prefer to collect drinking water from clear sources, stating that fresh water from clear and unpolluted	Chepil Lake and Granville Lake watershed are within the RAA outlined in the EIS. The following locations are outside the RAA outlined in the EIS (distance from PDA): • Churchill River (32 km) • Granville Lake (33 km) • Russell Lake (58 km)	n/a	Chapter 9: Section 9.1.2 (page 9.8) The influence of engagement on the assessment Section 9.4.1.2 (page 9.34) Project Pathways of effects on surface water quantity Section 9.3 (page 9.30) Project interactions with surface water	Mitigation measures described in Chapter 18, Section 18.4.2.2 of the EIS including: • The use of dust suppressants (e.g., water and chemical), dust collectors (e.g., baghouse and wet scrubbers at crushers) and dust enclosures at mill feed conveyors and storage areas as described in Chapter 6, Section 6.4.1.3. Mitigation measures for effects of reduced water quality on harvested resources include water management as described in Chapter 8, Section 8.4.2.2, and Chapter 9, Section 9.4.1.3,including: • surface water runoff control practices, diversion of freshwater away from the Project by designing culverts and ditches, management of contact water (by	As described in IAAC-48 and IAAC-55, details of Aquatic Effects Monitoring Plan (AEMP) will be developed during the permitting phase of the Project. However, it is expected that this AEMP will include monitoring and adaptive management of groundwater, surface water quantity surface water quality, and fish and fish habitat at the Gordon site. Monitoring is expected to include data collection "before" and "after" mine construction at "impact" sites

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
sources is beneficial to individuals' health. MCCN reported harvesting drinking water from Chepil and Russell lakes **Potential Project Effects** Study participants stated that they no longer consume water from Frances Lake or Dunphy Lakes as a result of change in water levels and decreased water quality. MCCN expressed concern about members' ability to maintain a traditional diet as a result of decreasing populations and health of harvested resources. MCCN expressed concern that the Project would result in reduced confidence in water quality, which would in turn affect water harvesting. MCCN expressed concern about the contents of collection ponds leaching into the ground and reaching watercourses, including the Granville Lake watershed and Churchill River, which is used by MCCN.	No human health locations were specifically identified in the mapping within the TLRU Report.		Section 9.4.1.3 (page 9.40) Mitigation measures for surface water quantity Section 9.4.2.2 (page 9.66) Project pathways of effects on surface water quality, Section 9.4.2.3 (page 9.68) Mitigation measures for surface water quality Sections 9.7.1 (page 9.110) Significance of Project residual effects on surface water quality and quantity Chapter 18 Section 18.1.2 (page 18.2) Influence of engagement on the assessment Section 18.4.2.1 (page 18.27) Project pathways of effects on human health Section 18.4.2.2 (page 18.28) Mitigation measures for human health Section 18.7.1 (page 18.44) Significance of project residual effects on human health	construction of collection pits, ponds, ditches, and culverts), installation of groundwater interceptor wells and dewatering ditches, and closure rehabilitation (e.g., placement of a vegetated soil cover) to reduce infiltration into overburden and stockpiles The application of relevant actions in the Surface water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to reduce effects on water quality/quantity from the use and management of water for the Project. The application of relevant actions in the Groundwater Monitoring and Management Plan (Chapter 23, Section 23.5.4), including a detailed groundwater monitoring program at each site, with monitoring wells at select locations to reduce effects on groundwater using an adaptive management approach. The application of relevant actions in the Environmental Effects Monitoring Plan (Chapter 23, Section 23.5.17) to monitor discharge water in compliance with federal and provincial regulatory requirements, in the event discharge is required.	downstream of the Project and at "control" sites in unaffected waterbodies to allow for statistical assessment of various groundwater, stream flow, water quality, and fish population metrics in a 'before-after control-impact' type study design. The AEMP will also include the location, timing, frequency, and duration of sampling, the sampling methods to be used, the fish tissue parameters to be monitored, and the quantitative thresholds that will trigger adaptive management actions. Adaptive management triggers will be developed to provide an early indication of any unanticipated increases in fish tissue metal concentrations that may pose lethal or sublethal effects to fish so that mitigation measures can be altered or added, if necessary, before any fish tissue threshold is exceeded. These adaptive management actions may include, but not necessarily limited to: • A hierarchical plan to investigate the potential causes of trigger level exceedances to determine if the exceedance is due to measurement error, equipment malfunction, a single anomalous event, a regional phenomenon, or a Project-related effect. • A hierarchical plan to implement remedial actions to supplement existing mitigation measures or to implement new mitigation measures to reduce or eliminate the trigger exceedance. • A plan to report Project-related trigger or threshold exceedances to the appropriate federal and provincial agencies, and to local Indigenous groups. As described in IAAC-108, the Surface Water Monitoring and Management Plan will include monitoring of water quantity (stream flows, lake levels) and water quality downstream of the TMF at the MacLellan site and the MRSAs

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					at the MacLellan and Gordon sites. The objectives of the plan will be to: • Establish and/or maintain reference monitoring sites to differentiate between natural seasonal or climatic variability in surface water quantity and quality and potential Project effects as the Project progresses. • Monitor potential changes in lake level and stream flows downstream of the TMF and MRSAs, to validate water balance model predictions and assess the effectiveness of mitigation measures, in response to construction, operation, and closure of the Gordon and MacLellan sites. • Monitor potential change in water quality in lakes and stream downstream of the TMF and MRSAs, to validate water quality model predictions and assess the effectiveness of mitigation measures, in response to construction, operation, and closure of the Gordon and MacLellan sites. • Maintain a surface water quantity and surface water quality monitoring network sufficient to evaluate if quantitative thresholds are exceeded and to assess effectiveness of subsequent adaptive management measures. As described in IAAC-110, Mitigation measures that could be implemented in the unlikely event that water quality in the collection ponds is found to exceed the limits are: • Treatment of contact water with treatment technologies selected based on the concentration of the parameters of concern (e.g., coagulation/flocculation and sedimentation or filtration, ion

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					exchange, chemical precipitation and/or biological treatment). • Piping of contact water from the Gordon site further downstream to waterbodies (e.g., Ellystan Lake) or watercourses (i.e., Hughes River) with greater assimilative capacity. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Traditional Land and Resource Use					
Hunting					
Existing Conditions MCCN identified hunting as an important part of MCCN's culture and way of life and stated that healthy, functioning habitats and ecosystems are necessary to support populations of harvested species. MCCN explained that hunting occurs in the PDA, LAA, and RAA, and reported 170 hunting and trapping values, including 12 in the TLRU Report Project Footprint, 43 in the TLRU Report LSA, and 115 in the TLRU Report RSA. The MCCN TLRU Report spatial boundaries do not align with the Project spatial boundaries; therefore, some of the sites identified by MCCN may fall outside the Project spatial boundaries.	Black Sturgeon Reserve, Chepil Lake, Elizabeth Lake, Hughes Lake, Lynn Lake, and a portion of the travel route between Pukatawagan and Lynn Lake are within the RAA outlined in the EIS. The following hunting locations are outside the RAA outlined in the EIS (distance from PDA): • Britton Lake (115 km) • Brochet (120 km) • Eager Lake (49.5 km) • Frances Lake (6.5 km) • Jones Lake (23 km)	MCCN members recommend a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 17: Section 17.1.3 (page 17.5) The influence of engagement on the assessment Section 17.3 (page 17.55) Project interactions with availability of resources used for traditional purposes Section 17.4.2.1 (page 17.60) Project pathways of effects on availability of resources used for traditional purposes during construction and operation	Mitigation measures for effects on access to lands for hunting as described in Chapter 15, Section 15.4.2.2, Section 15.4.3.2. and Section 15.4.4.2: • Mine access roads are currently gated so the Project does not change access by these roads, beyond the gates • Signage will be installed around the perimeter of the PDA to alert local land and resource users of the presence of the Project and its facilities • Workers will be prohibited from bringing firearms and fishing gear to the sites while working to limit competition for wildlife and fish species of value to resource users. • Alamos will post warning signs on the access roads and distribution line ROW to discourage unauthorized access and snowmobiling due to safety concerns. • Alamos will implement traffic control measures which may include gating approaches to Project access roads, placing large boulders and/or gated fencing to restrict public access to the PDA.	As described in IAAC-07, safety concerns post closure include a boulder fence around the open pit crests which will remain indefinitely for safety reasons. Alamos will post informational signs on the access roads and around the mine sites regarding access and safety. Alamos will continue to engage with Indigenous communities throughout the life of the Project, and concerns with respect to access to the sites will be addressed to the extent possible. Alamos will use ongoing engagement to notify of any restriction or access modifications.

Appendix A Table 1: Mathias Colomb Cree Nation Traditional Land and Resource Use Information and Mitigation Table

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN reported harvesting the following resources[3]: Hunted species • moose • black bear • caribou • duck • goose Trapped species • badger • beaver • fisher • fox • lynx • marten • mink • muskrat • otter • porcupine • rabbit • racoon • squirrel • wolf • wolverine MCCN identified kill sites for duck, moose, and goose within the PDA and stated that there is important game habitat and processing sites within the RAA. MCCN explained that hunting and hunted resources contribute to subsistence as well as to cultural activities and socio-economic wellbeing.	• Laurie Lake (54 km) • Loon River (83 km) • McGavock Lake (41 km) • McVeigh Lake (10 km) • Mile 149 • Monique Lake (21 km) • Russell Lake (58 km) • Tod Lake (53.5 km) • Trophy Lake (65 km) The 1 km buffer of 4 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the LAA outlined in the EIS. The 1 km buffer of approximately >35 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the RAA outlined in the EIS.		Section 17.4.2.2 (page 17.62) Mitigation measures for changes in availability of lands and resources for traditional purposes Section 17.7.1 (page 17.84) Significance of Project residual effects on lands and resources used for traditional purposes	• Alamos will engage local land and resource users (e.g., recreational harvesters) and the Town of Lynn Lake to address, to the extent possible, issues related to the removal and inaccessibility of lands and resources within the PDA at Project sites, including the restriction in use of the Gordon site access road, and with local boaters to address navigation issues as well as access and safety issues related to navigation along watercourses affected by the Project, including engagement regarding the need to provide marked portages to circumvent obstructions. • The Project footprint will be limited to the extent possible (i.e., PDA) including site clearing and disturbance associated access routes and distribution line ROW. • Existing access roads and trails will be used to the extent possible; renewed access routes will be developed in compliance with provisions of *The Mines and Minerals Act* (in the case of the Gordon site). • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	As described in IAAC-202, mitigation to changes in access to lands and resources currently used for traditional purposes will be done through: • Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring, as well as consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations involved on the Project, including discussion of development and implementation of Project-specific environmental management and monitoring plans.

[3] MCCN did not distinguish between hunted and trapped species in the TLRU Report.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Potential Project Effects MCCN expressed concern that the Project will affect MCCN members' access to preferred traditional hunting areas and will cause avoidance of the PDA due to safety concerns as well as to an increase in barriers (e.g., gates, fences, and other restrictions). Degraded experience and feeling comfortable in an area may also lead members to avoid use of the area. MCCN expressed concern about members' ability to hunt as a result of decreasing populations and health of harvested resources. MCCN stated that the Project could result in harvesters needing to travel greater distances with increased effort to access lands and resources suitable for hunting. MCCN hunters from Pukatawagan need to travel north of Lynn Lake, adding more than 200 km to caribou hunts.					
Fishing					
Existing Conditions MCCN relied and continues to rely on the PDA, LAA, and RAA for fishing. MCCN reported 163 fishing and water values, including 4 in the TLRU Report Project Footprint, 47 in the TLRU Report LSA, and 112 in the TLRU Report RSA. The MCCN TLRU Report spatial boundaries do not align with the Project spatial boundaries; therefore, some of the sites identified by MCCN may fall outside the Project spatial boundaries. MCCN Fish species harvested by MCCN include: • lake trout • jackfish (northern pike) • pickerel (walleye) • suckers • sturgeon • whitefish	Keewatin River intersects the PDA. Chepil Lake, Churchill River system, and Granville Lake Watershed are within the RAA. The following fishing locations are outside the RAA (distance from PDA): • Churchill River (32 km) • Drybrough on Laurie River (40 km) • Dunphy Lakes (34.5 km) • Eager Lake (49.5 km) • Eaton Lake (29 km) • Frances Lake (6.5 km) • Lake Wetikoeekan (7 km) • Laurie Lake (54 km)	MCCN recommends a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 10: Section 10.1.2 (page 10.6) Influence of engagement on the assessment Section 10.3 (page 10.54) Project interactions with fish and fish habitat Section 10.4.2.4 (page 10.98) Residual project effects from angling Section 10.4.2.3 (page 10.92) Mitigation measures for changes to fish health, growth, and survival Section 10.7 (page 10.119) Determination of significance	• Mitigation as described in the surface water quality assessment (Chapter 9, Section 9.4.3.2 of the EIS: – Constructing water management structures and grading access roads/perimeter of open pits to collect, divert, and release non-contact water to the environment and to collect, store, and re-use contact water (stored at the TMF) to meet demand in the processing plant. Excess water will only be discharged after reuse and treatment, as necessary. This reduces the water demand and reduces/eliminates discharge of water from the TMF to the environment and associated water quality effects. The treatment of contact water will meet applicable federal and provincial regulatory requirements, prior to discharge to the environment, if required. – Maintaining existing drainage patterns with the use of culverts. Inspection of culverts periodically to remove accumulated material and debris to avoid erosion, flooding, habitat damage, property damage, and mobilization of sediment to downstream waterways. – Designing contact water collection ditches to reduce standing water and to withstand a 1 in 25-year flood and designing collection ponds with active water storage and for a 1 in 100-year storm. These features reduce the chance of overflowing and downstream contamination, should heavy precipitation occur.	n/a

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
• tullibee • perch MCCN identified fishing and fish processing sites and areas in the RAA and stated that selection of fishing sites is dependent on it having clear and flowing water. MCCN noted that commercial and subsistence fishing are linked and often occur simultaneously. MCCN identified fishing sites for lake trout, pickerel, suckers, and whitefish within the PDA. MCCN reported that fishing activities and sites occur in the RAA and interact in the PDA along Keewatin River near the MacLellan mine. Fish harvested by MCCN in Keewatin River include: • pickerel (walleye) • suckers • trout • whitefish MCCN also identified Churchill River and the waterways flowing into the Churchill River system as fishing areas. **Potential Project Effects** Study participants stated that they no longer fish in Frances Lake or Dunphy Lakes as a result of change in water levels, decreased water quality, and decline in fish population. MCCN reported having to travel further to fish. MCCN expressed concern that changes in surface water quality as a result of the Project and lack of confidence in resources would have an effect on fishing areas. MCCN reported having to travel farther to catch fish they feel are safe and are less willing to fish near mining activities due to concerns over water quality. MCCN expressed concern that the Project would cumulatively affect fishing and use of fresh water by mine	• Laurie River on the north end of Glasspole Lake (39.5 km) Eve Lake could not be located. Additional information is required to confirm its location. The 1 km buffer of 1 location related to surface water and fishing (Keewatin River) was identified in the MCCN TLRU Report that overlap the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to surface water and fishing were identified in the MCCN TLRU Report that overlap the LAA outlined in the EIS. The 1 km buffer of approximately 38 locations related to surface water and fishing were identified in the MCCN TLRU Report that overlap the RAA outlined in the EIS.			– Designing collection pond inlets and outlets to reduce water scour and meet sedimentation requirements. Sediment and erosion control measures will also be used during construction to reduce water quality effects, including effects to traditionally harvested species such as fish. – The application of relevant actions in the Erosion and Sediment Control Plan (Chapter 23, Section 23.5.13). – Treating domestic waste (approximately 60,000 L/day) at the sewage treatment plant at the MacLellan site, to meet applicable regulatory requirements before discharging to the environment, reducing effects on water quality downstream. – Aerating Wendy and East pits and groundwater from the interceptor wells to improve water quality prior to dewatering. – Treating and handling of building material that is used in water to avoid the release or leaching of substances that would affect water quality downstream. – The application of relevant actions in the Surface water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to address unanticipated effects to surface water through adaptive management. – The application of relevant actions in the Environmental Effects Monitoring Plan (Chapter 23, Section 23.5.17) to monitor discharge water in compliance with federal and provincial regulatory requirements, in the event discharge is required. • Mitigation as described in the fish and fish habitat assessment (Chapter 10, Section 10.4.1.3) will reduce effects on traditionally important fish species and habitat including the mitigation measures described for surface water quality (above), along with: – Restricting water withdrawal from the Keewatin River to <10% of instantaneous discharge. – Requiring heavy machinery working near water to be kept in good working condition, to be re-fueled no closure than 50 m from any waterbody or watercourse, and to be filled with biodegradable hydraulic fluids. – Using a heat exchanger, when required, to heat or cool water from Wendy and East pits prior to discharge to Farley Lake during construction and water from the groundwater interceptor wells prior to discharge to Gordon and Farley lakes to maintain important behavioral cues for fish (i.e., spawning and overwintering cues). The application of relevant actions in the Fish Habitat Offsetting Plan (Chapter 23, Section 23.5.15 of the EIS) to offset lost habitat area where harmful alteration, disruption, or destruction of fish habitat will occur. To reduce the effects of contaminants from tailings management facilities on nearby waterbodies, mitigation measures include those described in Chapter 9, Sections 9.4.2.2 and 9.4.3.2 of the EIS described above for surface water quality (e.g., recycling/treating contact water) along with:	

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
waste released into the environment in areas downriver of the MacLellan and Gordon sites, resulting in contamination of downstream water-dependent habitats, MCCN expressed concern that waterways that MCCN relies upon for fishing would be affected by potential leakage from tailings management facilities making its way downstream via a number of waterways into the Churchill River system.				• Designing the TMF with two cells to allow progressive development during operation to reduce freshwater requirements. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake.	
Trapping					
Existing Conditions MCCN identified trapping as an important part of MCCN's culture and way of life and stated that healthy, functioning habitats and ecosystems are necessary to support populations of harvested species. MCCN explained that trapping occurs in the PDA, LAA, and RAA, and reported 170 hunting and trapping values, including 12 in the TLRU Report Project Footprint, 43 in the TLRU Report LSA, and 115 in the TLRU Report RSA. The MCCN TLRU Report spatial boundaries do not align with the Project spatial boundaries; therefore, some of the sites identified by MCCN may fall outside the Project spatial boundaries. MCCN reported harvesting the following resources: Hunted species • moose • black bear • caribou • duck • goose Trapped species • badger • beaver	Black Sturgeon Reserve, Chepil Lake, Elizabeth Lake, Hughes Lake, Lynn Lake, and a portion of the travel route between Pukatawagan and Lynn Lake are within the RAA outlined in the EIS. The following trapping locations are outside the RAA outlined in the EIS (distance from PDA): • Britton Lake (115 km) • Eager Lake (49.5 km) • Fox Lake (47 km) • Frances Lake (6.5 km) • Jones Lake (23 km) • Laurie Lake (54 km) • Loon River (83 km) • McGavock Lake (41 km) • McVeigh Lake (10 km) • Mile 149 • Monique Lake (21 km) • Russell Lake (58 km) • Tod Lake (53.5 km) • Trophy Lake (65 km)	MCCN recommends a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 17: Section 17.1.3 (page 17.5) The influence of engagement on the assessment Section 17.3 (page 17.55) Project interactions with availability of resources used for traditional purposes Section 17.4.2.1 (page 17.60) Project pathways of effects on availability of resources used for traditional purposes during construction and operation Section 17.4.2.2 (page 17.62) Mitigation measures for changes in availability of lands and resources for traditional purposes Section 17.7 (page 17.84) Determination of significance	Mitigation measures to reduce the effects of noise and vibration on harvested animals are described in Chapter 7, Sections 7.4.1.3 and 7.4.2.3 of the EIS including: • Locating large stationary machinery inside buildings where possible. • Enclosing the conveyor between buildings in the processing plant. • Use of exhaust mufflers on mobile equipment. • Reducing idling of heavy fleet when not in operation, where practical. • Blasting using a blast design with a maximum of 207.9 kg explosive per time, only one hold/delay in the blast, and a minimum time delay between holes of 8 milliseconds. • Using a reduced blast charge of 43 kg for receptor 76 and 73 (Indigenous receptors) near the Gordon site and monitoring/engagement to confirm if blast can be increased for those areas. The application of relevant actions in the Noise Monitoring Plan (Chapter 23, Section 23.5.8) to reduce effects on the environment from noise disturbances Mitigation measures to reduce the effects of changing access to traditional use areas and safety concerns for resource users are described in Chapter 15, Section 15.4.2.2, Section 15.4.3.2. and Section 15.4.4.2 and include: • Signage will be installed around the perimeter of the PDA to alert local land and resource users of the presence of the Project and its facilities to reduce safety risks. • Workers will be prohibited from bringing firearms and fishing gear to the sites while working to limit competition for wildlife and fish species of value to resource users. • Alamos will post warning signs on the access roads and distribution line ROW to discourage unauthorized access and snowmobiling due to safety concerns.	As described in IAAC-202, mitigation to changes in access to lands and resources currently used for traditional purposes will be done through: • Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring, as well as consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations involved on the Project, including discussion of development and implementation of Project-specific environmental management and monitoring plans.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
• fisher • fox • lynx • marten • mink • muskrat • otter • porcupine • rabbit • racoon • squirrel • wolf • wolverine MCCN identified trapping areas for marten, otter, rabbit, and general trapping areas within the LAA. MCCN also identified trapping badger, beaver, fox, lynx, martin, mink, muskrat, otter, porcupine, rabbit, racoon, squirrel, wolf, wolverine, and reported that there are processing sites and general trapping areas within the RAA. MCCN trap for meat, fur, and hides. Study participants reported that whatever beaver meat is not eaten is fed to dog teams. MCCN stated that traplines are used year-round and it is common to trap along travel routes so that there is food on the return journey. MCCN explained that trapping and trapped resources contribute to subsistence as well as to cultural activities and socio-economic wellbeing.	The 1 km buffer of 4 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the PDA outlined in the EIS. The 1 km buffer of approximately 9 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the LAA outlined in the EIS. The 1 km buffer of approximately >35 locations related to wildlife (hunting and trapping) were identified in the MCCN TLRU Report that were also overlapping the RAA outlined in the EIS.			• Alamos will implement traffic control measures which may include gating approaches to Project access roads, placing large boulders and/or gated fencing to restrict public access to the PDA. • Alamos will engage local land and resource users (e.g., recreational harvesters) and the Town of Lynn Lake to address, to the extent possible, issues related to the removal and inaccessibility of lands and resources within the PDA at Project sites, including the restriction in use of the Gordon site access road, and with local boaters to address navigation issues as well as access and safety issues related to navigation along watercourses affected by the Project, including engagement regarding the need to provide marked portages to circumvent obstructions. • The Project footprint will be limited to the extent possible (i.e., PDA) including site clearing and disturbance associated access routes and distribution line ROW. • Existing access roads and trails will be used to the extent possible; renewed access routes will be developed in compliance with provisions of *The Mines and Minerals Act* (in the case of the Gordon site) • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources. Effects on wildlife will also be reduced through the application of relevant actions in the Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.15) to reduce effects on traditionally important species, resources, and trapping success, using an adaptive management approach. As stated in the EIS is Chapter 17, 17.7.1, with mitigation, the residual environmental effects from the Project on the Current Use of Land and Resources are not anticipated to result in the long-term loss of availability of traditional use resources or access to lands relied on for traditional use practices or the permanent loss of traditional use sites and areas in the LAA and RAA. The ability of Indigenous communities to continue traditional practices outside of the PDA will be maintained.	
Potential Project Effects MCCN expressed concern that the Project will affect MCCN members' access to traditional trapping areas and will cause avoidance of the PDA due to safety concerns. Degraded experience and feeling comfortable in an area may also lead members to avoid use of the area.					

Appendix A Table 1: Mathias Colomb Cree Nation Traditional Land and Resource Use Information and Mitigation Table

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN expressed concern about noise generated by mining operations affecting trapping success. MCCN expressed concern about members' ability to trap as a result of decreasing populations and health of harvested resources. MCCN stated that the Project could result in harvesters needing to travel greater distances with increased effort to access lands and resources suitable for trapping.					
Plant Harvesting					
Existing Conditions MCCN identified harvesting areas for blueberries and cranberries within the PDA. MCCN also identified harvesting areas for blueberries, saskatoons, raspberries, cranberries, and medicines within the LAA and RAA. Participants described collecting a number of different medicines within the TLRU LSA. Each different type of medicine is harvested for a specific purpose and is harvested at a particular time of the year, MCCN explained that berries are often harvested together in large groups and serve as a communal activity to bring families and community members together on the land, strengthening inter- and intra-familial bonds. **Potential Project Effects** MCCN expressed concern about the potential loss of plants including medicines due to vegetation clearing, and contamination from waste and chemicals from mining activities	Northeastern shore of Cockeram Lake, along Highway 391 from Lynn Lake, and where rivers and lakes intersect Highway 391 between Lynn Lake and Gordon mine are within the LAA. Black Sturgeon Reserve is within the RAA. The following plant harvesting location is outside the RAA (distance from PDA): • Frances Lake (north shore; 6.5 km) No plant harvesting locations were specifically identified in the mapping within the TLRU Report.	MCCN recommends a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 17: Section 17.1.3 (page 17.5) Influence of engagement of the assessment Section 17.3 (page 17.53) Section 17.4 (page 17.57) Assessment of the residual environmental effects of lands and resources for traditional purposes. 17.7.4.1 (page 17.85) disturbances to current use Section 17.7 (page 17.84) Determination of significance	Mitigation measures for plants, including those harvested for traditional purposes are described in Chapter 11, Section 11.4.2.2, 11.4.3.2. and 11.4.5.2 of the EIS and include: • Wetland buffering, silt fencing, and timing of vegetation clearing (e.g., during dry/frozen conditions) as described in the vegetation and wetlands assessment will reduce habitat loss or loss of traditionally important species. • A protective layer such as matting or biodegradable geotextile and clay ramps or other approved materials will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential for rutting, admixing or compaction. • Limit construction footprint (i.e., PDA) to the extent possible to reduce the area of vegetation clearing. • If pesticide is required, a pesticide use permit will be obtained under The Environment Act (Manitoba). • Reducing the removal of vegetation in wetlands to the extent practicable. • Conducting ground level cutting/mowing/mulching of wetland vegetation instead of grubbing, where practicable. • Reducing grading within wetland boundaries unless required for site specific purposes. • Using frost packing, snow, ice, geotextile swamp mats or access mats for access through wet areas. • Native areas disturbed by the Project will be reseeded using a native upland seed mix; however, the tailings management facility will be partially capped and seeded with a reclamation seed mix. • Maintaining cross drainage across roadways to maintain the water flow to adjacent plant communities Mitigation measures for surface water quality are also in place to reduce effects on plants from contaminated water runoff and include: • Constructing water management structures and grading access roads/perimeter of open pits to collect, divert, and release non-contact water	n/a

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				to the environment and to collect, store, and re-use contact water (stored at the TMF) to meet demand in the processing plant. Excess water will only be discharged after reuse and treatment, as necessary. This reduces the water demand and reduces/eliminates discharge of water from the TMF to the environment and associated water quality effects. The treatment of contact water will meet applicable federal and provincial regulatory requirements, prior to discharge to the environment, if required. • Designing contact water collection ditches to reduce standing water and to withstand a 1 in 25-year flood and designing collection ponds with active water storage and for a 1 in 100-year storm. These features reduce the chance of overflowing and downstream contamination, should heavy precipitation occur. • Designing collection pond inlets and outlets to reduce water scour and meet sedimentation requirements. Sediment and erosion control measures will also be used during construction to reduce water quality effects, including effects to traditionally harvested species. • The application of relevant actions in the Erosion and Sediment Control Plan (Chapter 23, Section 23.5.13). • Treating domestic waste (approximately 60,000 L/day) at the sewage treatment plant at the MacLellan site, to meet applicable regulatory requirements before discharging to the environment, reducing effects on water quality downstream. • Aerating Wendy and East pits and groundwater from the interceptor wells to improve water quality prior to dewatering. • Treating and handling of building material that is used in water to avoid the release or leaching of substances that would affect water quality downstream. Surface water quality will also be mitigated through the application of relevant actions in the Surface water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to address unanticipated effects to surface water through an adaptive management approach. Surface water quality will also be mitigated through the application of relevant actions in the Environmental Effects Monitoring Plan (Chapter 23, Section 23.5.17) to monitor discharge water in compliance with federal and provincial regulatory requirements, in the event discharge is required. Vegetation will also be mitigated through the application of relevant actions in the Vegetation and Weed Management Plan (Chapter 23, Section 23.5.12 of the EIS) to address unanticipated effects to vegetation through an adaptive management approach.	
Travel					
Existing Conditions MCCN identified important terrestrial and water travel routes for accessing hunting, trapping, fishing, and harvesting areas for cultural continuity.	Keewatin River intersects the PDA. Lynn Lake to Black Sturgeon Reserve, river systems between Hughes and Elizabeth lakes	MCCN recommends a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 17: Section 17.1.3 (page 17.5) Influence of engagement of the assessment	Mitigation measures to address effects on access to traditional lands and resources are described in Chapter 15, Section 15.4.2.2, Section 15.4.3.2. and Section 15.4.4.2 of the EIS and include:	As described in IAAC-202, mitigation to changes in access to lands and resources currently used for traditional purposes will be done through:

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
Keewatin River was identified as a water route to access fishing areas and reported travelling on river systems including Hughes River between Hughes and Elizabeth lakes to hunt. MCCN reported travelling from Pukatawagan to Black Sturgeon Reserve to hunt and identified Pukatawagan to Lynn Lake as a travel route accessed by rail or on foot. Study participants explained that some members travel by dog team, including when trapping. **Potential Project Effects** MCCN reported that the Project could limit access to travel routes used by MCCN. In addition, the Project would affect the ability of MCCN to travel freely through the PDA and increase travel time and effort to the surrounding area.	(including Hughes River), are within the RAA. The following locations are outside the RAA (distance from PDA): • Kamuchawie Lake (73 km) to Churchill River (32 km) • Loon River (83 km) The 1 km buffer of approximately 4 locations related to transportation were identified in the MCCN TLRU Report that were also overlapping the PDA outlined in the EIS. The 1 km buffer of approximately 4 locations related to transportation were identified in the MCCN TLRU Report that were also overlapping the LAA outlined in the EIS. The 1 km buffer of approximately 16 locations related to transportation were identified in the MCCN TLRU Report that were also overlapping the RAA outlined in the EIS.		Section 17.3 (page 17.53) Section 17.4 (page 17.57) Assessment of the residual environmental effects of lands and resources for traditional purposes. Section 17.7.4.1 (page 17.85) disturbances to current use Section 17.7 (page 17.84) Determination of significance	• Alamos will engage local land and resource users (e.g., recreational harvesters) and the Town of Lynn Lake to address, to the extent possible, issues related to the removal and inaccessibility of lands and resources within the PDA at Project sites, including the restriction in use of the Gordon site access road, and with local boaters to address navigation issues as well as access and safety issues related to navigation along watercourses affected by the Project, including engagement regarding the need to provide marked portages to circumvent obstructions. • The Project footprint will be limited to the extent possible (i.e., PDA) including site clearing and disturbance associated access routes and distribution line ROW. • Existing access roads and trails will be used to the extent possible; renewed access routes will be developed in compliance with provisions of *The Mines and Minerals Act* (in the case of the Gordon site). • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources.	• Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring, as well as consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations involved on the Project, including discussion of development and implementation of Project-specific environmental management and monitoring plans.
Cultural, Spiritual and Ceremonial Practices or Areas					
Existing Conditions MCCN reported 140 cultural continuity values, including two in the TLRU Report Project Footprint, 49 in the TLRU Report LSA, and 89 in the TLRU Report RSA; of these 89 sites, 26 were identified as habitation values. The MCCN TLRU Report spatial boundaries do not align with the Project spatial boundaries; therefore, some of the sites identified by MCCN may fall outside the Project spatial boundaries. Study participants explained experiencing a feeling of “renewal” and happiness when spending time on the land and in the bush away from pollution, crowds, and noise.	A portion of the area between Lynn Lake and Kamuchawie Lake (camps), along with Chepil Lake (teaching), Hughes Lake (burial site), and where Keewatin River enters Goldsand Lake (trading site) are within the RAA outlined in the EIS. The following locations are outside the RAA outlined in the EIS(distance from PDA): • Frances Lake (camping, fish smoking, and berry gathering; 6.5 km) • Jones Lake (camping/cabins; 23 km)	MCCN members recommend a process for collaboration between MCCN and Alamos regarding monitoring, accommodation, and compensation measures.	Chapter 17: Section 17.1.3 (page 17.5) Influence of engagement of the assessment Section 17.3 (page 17.53) Section 17.4 (page 17.57) Assessment of the residual environmental effects of lands and resources for traditional purposes. Section 17.7.4.1 (page 17.85) disturbances to current use	Mitigation measures to address effects on access to traditional lands and resources are described in Chapter 15, Section 15.4.2.2, Section 15.4.3.2. and Section 15.4.4.2 of the EIS and include: • Alamos will engage local land and resource users (e.g., recreational harvesters) and the Town of Lynn Lake to address, to the extent possible, issues related to the removal and inaccessibility of lands and resources within the PDA at Project sites, including the restriction in use of the Gordon site access road, and with local boaters to address navigation issues as well as access and safety issues related to navigation along watercourses affected by the Project, including engagement regarding the need to provide marked portages to circumvent obstructions. • The Project footprint will be limited to the extent possible (i.e., PDA) including site clearing and disturbance associated access routes and distribution line ROW.	As described in IAAC-202, mitigation to changes in access to lands and resources currently used for traditional purposes will be done through: • Ongoing engagement with Indigenous Nations regarding their concerns, mitigation of potential Project effects on traditional land and resource use, and potential monitoring, as well as consideration of mitigation measures proposed by Indigenous Nations. • Ongoing engagement with Indigenous Nations involved on the Project, including discussion of development and implementation

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN reported burial sites, camping and cabin sites, gathering places, traditional placenames, and teaching areas within the LAA and RAA. MCCN reported that there are camping sites associated with fishing and hunting located in the LAA and RAA. MCCN reported using blueberries to colour porcupine quills use for beading and stated that hunting and trapping activities are taught to younger generations, including at Chepil Lake. MCCN explained that eating wild meat and having a traditional diet is an important part of MCCN culture and stated that sharing harvesting goods is an important traditional protocol. MCCN identified a camping, fish smoking, and berry gathering site at the north shore of Frances Lake. MCCN described the importance of responsible harvesting, noting that resources should not be overharvested and should only harvest specific types of animals, such as middle-aged beaver, to preserve and support species. **Potential Project Effects** MCCN reported that the Project could limit access to cabins and campsites used by MCCN. MCCN expressed concern about members' ability to transmit knowledge as a result of decreasing populations and health of harvested resources. MCCN also expressed concern about the potential loss of medicines due to vegetation clearing or ecological integrity, as well as loss of access to hunting and trapping areas, habitat degradation, species loss, contamination, which could negatively impact MCCN experience or perception of the Project Area, their ability to practice land-based learning, and the ability to transfer knowledge from generation to generation; MCCN stated	• Monique Lake (camping; 21 km) • Pukatawagan (teaching; 122 km) No locations related to cultural use were identified in the MCCN TLRU Report that were also overlapping the PDA or LAA outlined in the EIS. The 1 km buffer of 5 locations related to cultural use were identified in the MCCN TLRU Report that were also overlapping the RAA outlined in the EIS.		Section 17.7 (page 17.84) Determination of significance	• Existing access roads and trails will be used to the extent possible; renewed access routes will be developed in compliance with provisions of *The Mines and Minerals Act* (in the case of the Gordon site) • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources Mitigation measures for effects on vegetation from clearing or loss of ecological integrity are described in Chapter 11, Section 11.4.2.2, 11.4.3.2. and 11.4.5.2 of the EIS and include: • Wetland buffering, silt fencing, and timing of vegetation clearing (e.g., during dry/frozen conditions) as described in the vegetation and wetlands assessment will reduce habitat loss or loss of traditionally important species. • A protective layer such as matting or biodegradable geotextile and clay ramps or other approved materials will be used between wetland root/seed bed and construction equipment if ground conditions are encountered that create potential for rutting, admixing or compaction. • Limit construction footprint (i.e., PDA) to the extent possible to reduce the area of vegetation clearing. • If pesticide is required, a pesticide use permit will be obtained under The Environment Act (Manitoba). • Reducing the removal of vegetation in wetlands to the extent practicable. • Conducting ground level cutting/mowing/mulching of wetland vegetation instead of grubbing, where practicable. • Reducing grading within wetland boundaries unless required for site specific purposes. • Using frost packing, snow, ice, geotextile swamp mats or access mats for access through wet areas. The experience of Indigenous peoples on the land, cultural identity, opportunities for intergenerational knowledge transmission, and spiritual connections represent intangible values, which are largely subjective and conditional, reflecting beliefs, perceptions, values, and qualitative experience. As such, for changes to the environment that affect cultural values or importance associated with traditional land and resource use, it is not possible to establish meaningful and applicable measurable parameters or assess these values to current assessment conventions. Ongoing engagement with Indigenous groups is expected to address concerns to intangible values through an adaptive management approach.	of Project-specific environmental management and monitoring plans. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
that this would have an affect on members' practice of culture, treaty rights, and way of life.					
Accidents and Malfunctions					
Potential Project Effects MCCN expressed concern that contents stored in collection ponds would leak into the ground affecting water quality.	No locations related to accidents and malfunctions were specifically identified in the mapping within the TLRU Report.	n/a	Chapter 22: Section 22.4.10 (page 22.12) Description of vehicles accidents Section 22.5.5.3 (page 22.32) Environmental effects assessment for vehicle accidents 22.5.5.1 (page 22.31) Design and safety measures to reduce effects of vehicle accidents Section 22.6 (page 22.33) residual effects summary for vehicle accidents	Mitigation measures to reduce effects on groundwater quality and the potential leaching of contaminants from collection and tailings ponds are described in Chapter 8, Section 8.4.3.2 of the EIS. These measures include: • Limit construction footprint (i.e., PDA) to the extent possible to reduce the potential for reductions in groundwater recharge and limit the number of watersheds overprinted by the PDA. • Intercept groundwater flowing into the open pit prior to discharge at the pit wall and return the water generated from pumping groundwater interceptor wells to Gordon and Farley lakes to offset a reduction in groundwater discharge. • Design of the MRSA to increase the amount of runoff and reduce the amount of infiltration through the MRSA, thereby reducing the recharge and loading to groundwater. • Installation of contact water collection ditches around the overburden storage area, ore stockpile, and MRSA to collect toe seepage and groundwater recharge from these Project components. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF (Chapter 9, Section 9.4.3.2). • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake. The Project will also follow the Canadian Dam Association Dam Safety Guidelines (CDA 2013, 2014) for design of containment structures for the TMF. Groundwater quality will also be mitigated through the application of relevant actions in the Groundwater Monitoring Plan (Chapter 23, Section 23.5.4 of the EIS) to address unanticipated effects to groundwater through an adaptive management approach.	Alamos will provide emergency response services sufficient in capacity and capability to respond to emergency situations at the Project sites. The Emergency Response and Spill Prevention Plan (ERSPCP) will facilitate response to emergency situations that could occur at the Project sites. The objective of the ERSPCP is to provide for emergency preparation and response as well as spill prevention and contingency planning in accordance with federal and provincial legislation and guidelines, and corporate policies and procedures, and best practices for the protection of human health and the environment. The scope of the plan will include, but is not limited to, response measures and contingency plans for spills and the releases of hazardous substances, accidents involving hazardous substances, medical emergencies, explosions, and fire. Measures will be prescribed for emergency response planning, training requirements, roles and responsibilities, step by step response protocols, requirements for clean-up equipment and materials, and contact and reporting procedures. The Project follow-up and environmental monitoring and management plans will include a process of sharing of information related to accidents and malfunctions, including the provision of reports of monitoring and follow-up programs. The environmental monitoring plans are described in Chapter 23, Section 23.5 of the EIS and include plans such as an emergency response and spill prevention and contingency plan, explosives management plan, and a

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
					heritage and cultural resources protection plan which will include procedures for chance heritage findings. Alamos provided conceptual Enviornmental Management and Monitoring Plans to MCCN on May 28, 2021 for review and feedback. Alamos has committed to working with Indigenous Nations in the design and implementation of Project follow-up and monitoring programs, including evaluation of program results, and subsequent updates to the program. Opportunities will be provided for members of directly affected Indigenous Nations to participate in these follow-up and monitoring programs through potential future agreements that Alamos makes with Indigenous Nations.
Cumulative Effects					
Existing Conditions MCCN stated that historical mining in the Lynn Lake area has limited ability to practice their culture and describe the area as being in a degraded state due to the impacts from the various mines. Impacts from hydroelectric projects have caused flooding and changes in water regimes that have had impacts on traditional knowledge and values as well as on travel routes. MCCN reported that waste materials left behind from previous mining activity in Lynn Lake have led to the contamination of nearby waterbodies and surrounding habitats, beginning in the 1960s resulting in effects on water quality and fishing. They explained that the impacts continue to persist, reporting dead fish and vegetation in the Lynn Lake area due to the pollution of Lynn Lake and the surrounding rivers and streams from past mining activities, as well as a landfill.	Lynn Lake area, including a portion of the railway from Pukatawagan to Lynn Lake is within the RAA outlined in the EIS. The following locations are outside the RAA (distance from PDA): • Eager Lake (49.5 km) • Laurie Lake (54 km) • Laurie River (39 km) • Laurie River Lodge (45 km) • Sherridon Mine (186 km) Beaver Lake could not be located. Additional information is required to confirm its location. No locations related to cumulative effects were specifically identified in the mapping within the TLRU Report.	MCCN recommends that further research be conducted to identify the full range of impacts to MCCN knowledge, use, and practice of culture resulting from cumulative effects within the Project area.	Chapter 17: Section 17.5 (page 17.78) Assessment of the cumulative environmental effects current use of lands and resources for traditional purposes.	Mitigation measures to reduce effects on surface water (quantity and quality) are described in Chapter 9, Sections 9.4.2.2 and 9.4.3.2 of the EIS. By reducing effects on surface water, it is anticipated that effects on fish/fish harvesting will also be reduced. These measures include: • Constructing water management structures and grading access roads/perimeter of open pits to collect, divert, and release non-contact water to the environment and to collect, store, and re-use contact water (stored at the TMF) to meet demand in the processing plant. Excess water will only be discharged after reuse and treatment, as necessary. This reduces the water demand and reduces/eliminates discharge of water from the TMF to the environment and associated water quality effects. The treatment of contact water will meet applicable federal and provincial regulatory requirements, prior to discharge to the environment, if required. • Intercepting groundwater flowing into the open pit (Chapter 8, Section 8.4.2.2) thereby reducing the volume of contact water and reducing the potential dewatering of Gordon and Farley lakes. • Maintaining existing drainage patterns with the use of culverts. Inspection of culverts periodically to remove accumulated material and debris to avoid erosion, flooding, habitat damage, property damage, and mobilization of sediment to downstream waterways. • Designing contact water collection ditches to reduce standing water and to withstand a 1 in 25-year flood and designing collection ponds with active water storage and for a 1 in 100-year storm. These features reduce the	n/a

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
MCCN stated that prior to the opening of mines in Lynn Lake, the water in the area was trusted, and members would use water from the area for consumption. Declines in drinking water quality and vegetation in the Lynn Lake area have been attributed to chemical contamination from mining and water level fluctuations resulting from Manitoba Hydro dams nearby. MCCN described impacts from mining activity that have resulted in loss of clean drinking water for MCCN members in the area and resulted in the need to buy bottled water. MCCN reported that decline in water quality and the subsequent effects on vegetation and wildlife is being experienced as a result of the Sherridon Mine and other mines in MCCN territory and stated that these effects will persist indefinitely in the vicinity of the Sherridon and Lynn Lake mines. MCCN stated that traplines, cabins, and homesteads were burned in the Lynn Lake area when settlers arrived. MCCN explained that the closure of the railway from Pukatawagan to Lynn Lake has reduced access to Lynn Lake. MCCN have observed impacts to wildlife as a result of forest fires and forestry (e.g., logging practices).				chance of overflowing and downstream contamination, should heavy precipitation occur. • Designing collection pond inlets and outlets to reduce water scour and meet sedimentation requirements. Sediment and erosion control measures will also be used during construction to reduce water quality effects, including effects to traditionally harvested species such as fish. • The application of relevant actions in the Erosion and Sediment Control Plan (Chapter 23, Section 23.5.13). • Treating domestic waste (approximately 60,000 L/day) at the sewage treatment plant at the MacLellan site, to meet applicable regulatory requirements before discharging to the environment, reducing effects on water quality downstream. • Aerating Wendy and East pits and groundwater from the interceptor wells to improve water quality prior to dewatering. • Treating and handling of building material that is used in water to avoid the release or leaching of substances that would affect water quality downstream. • Designing the TMF with two cells to allow progressive development during operation to reduce freshwater requirements. • Using a closed circuit for cyanide use and cyanide destruction in the processing plant to reduce cyanide concentrations in tailings slurry prior to release of the slurry for storage in the TMF. • Constructing groundwater cut-off ditches to reduce groundwater seepage from the TMF reaching Minton Lake. The application of relevant actions in the Emergency Response and Spill Prevention and Contingency Plan (Chapter 23, Section 23.5.1 of the EIS) to reduce effects on water quality should an accidental spill occur The application of relevant actions in the Surface water Monitoring and Management Plan (Chapter 23, Section 23.5.5 of the EIS) to reduce effects on water quality/quantity from the use and management of water for the Project. The application of relevant actions in the Environmental Effects Monitoring Plan (Chapter 23, Section 23.5.17) to monitor discharge water in compliance with federal and provincial regulatory requirements, in the event discharge is required. Mitigation measures to reduce effects on water and fish post-closure include: • Implementing passive treatment options (e.g., controlled pit stratification, fertilizer amendment, flow segregation) in the open pit should monitoring show that pit water quality is not suitable for release to the environment during the anticipated 21 years to fill the open pit with contact water at the conclusion of mine operation. • Operating the TMF as a non-discharging facility during operation through decommissioning/closure. • Expediting re-filling of open pits during decommissioning/closure to reduce exposure of pit walls.	

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				• The application of relevant actions in the Closure Plan as described in Chapter 23, Section 23.5.18 of the EIS. • Designing open pit outlets so they are impassable to fish, to discourage fish from colonizing open pits in post-closure (Chapter 10, Section 10.4.1.3) • Refilling open pits with contact water at closure to return groundwater levels to near baseline conditions. • Directing contact water from the collection ditches around the MRSA, overburden stockpile, and mine infrastructure to the open pit during decommissioning/closure to reduce the filling period. • Continuing to operate the groundwater interceptor wells during closure while the open pit fills with water and progressively reducing their pumping rates until the water level in the open pit reaches the elevation of the surrounding groundwater table. • Implementing progressive rehabilitation (placement of a vegetated soil cover) of the overburden and MRSAs to reduce infiltration rates. Mitigation measures to reduce effects on fish and fish habitat are largely related to those reducing effects on surface water (above) in addition to those described in Chapter 10, Section 10.4.1.3 and 10.4.2.3 of the EIS: • Restricting water withdrawal from the Keewatin River to <10% of instantaneous discharge. • Requiring heavy machinery working near water to be kept in good working condition, to be re-fueled no closure than 50 m from any waterbody or watercourse, and to be filled with biodegradable hydraulic fluids. • Using a heat exchanger, when required, to heat or cool water from Wendy and East pits prior to discharge to Farley Lake during construction and water from the groundwater interceptor wells prior to discharge to Gordon and Farley lakes to maintain important behavioral cues for fish (i.e., spawning and overwintering cues). • The application of relevant actions in the Fish Habitat Offsetting Plan (Chapter 23, Section 23.5.15 of the EIS) to offset lost habitat area where harmful alteration, disruption, or destruction of fish habitat will occur Mitigation measures to cultural/heritage resources (e.g., cabins) as described in Chapter 16 Section 15.4.2.2: • Implementation of the HCRPP when heritage or cultural resources, or objects thought to be heritage or cultural objects, are exposed. • Protective barriers placed around heritage resource sites that are inadvertently found during construction so that the area can be protected while work proceeds. • Controlled surface collection or salvage excavation of discovered heritage resource sites, or a portion thereof, that cannot be avoided. • Construction monitoring by a professional archaeologist in areas that are heritage sensitive such as sites identified as being culturally sensitive by Indigenous engagement.	

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				• Evaluation by a professional archaeologist of PDA/LAA changes or added development components. • Education of construction contractors for the appropriate protocol if heritage or cultural resources, or objects thought to be heritage or cultural resources, are discovered. Mitigation measures to address effects on access are described in Chapter 15, Section 15.4.2.2, Section 15.4.3.2. and Section 15.4.4.2 of the EIS and include: • Alamos will engage local land and resource users (e.g., recreational harvesters) and the Town of Lynn Lake to address, to the extent possible, issues related to the removal and inaccessibility of lands and resources within the PDA at Project sites, including the restriction in use of the Gordon site access road, and with local boaters to address navigation issues as well as access and safety issues related to navigation along watercourses affected by the Project, including engagement regarding the need to provide marked portages to circumvent obstructions. • The Project footprint will be limited to the extent possible (i.e., PDA) including site clearing and disturbance associated access routes and distribution line ROW. • Existing access roads and trails will be used to the extent possible; renewed access routes will be developed in compliance with provisions of *The Mines and Minerals Act* (in the case of the Gordon site) • Alamos will communicate the schedule of Project activities throughout the construction, operation, and decommissioning/closure phases to potentially affected local resource users and MCC Regional Officials. • Alamos will engage with local resource users (hunters, outfitters, trappers, anglers) and MCC Regional Officials to address to the extent possible the potential conflict, disturbance, or access restrictions to hunting, trapping, and fishing areas in the PDA, and availability of wildlife and fish resources Mitigation measures for wildlife and wildlife habitat include those described in the EIS (Chapter 12, Section 12.4.2.3, 12.4.3.3, and 12.4.4.3): • Design for limitation of construction footprint (i.e., PDA) to the extent possible. • Design for use of down-lighting, a technique of directing night lighting downward, to reduce light effects on wildlife adjacent to the PDA • Design for maintenance of a 30 m naturally vegetated buffer around wetlands, waterbodies, and watercourses. • Design for restriction of unauthorized access to habitat adjacent to the PDA. • Design for provision of low areas in the ploughed snowbanks of access and on-site roads, where practical, to facilitate wildlife movements across and out of road corridors. • Design for scheduling vegetation clearing and site preparation activities outside the breeding period for migratory birds (Zone C7; May 7 to August 7; ECCC 2019). If activities that could result in risk of harm cannot be avoided,	

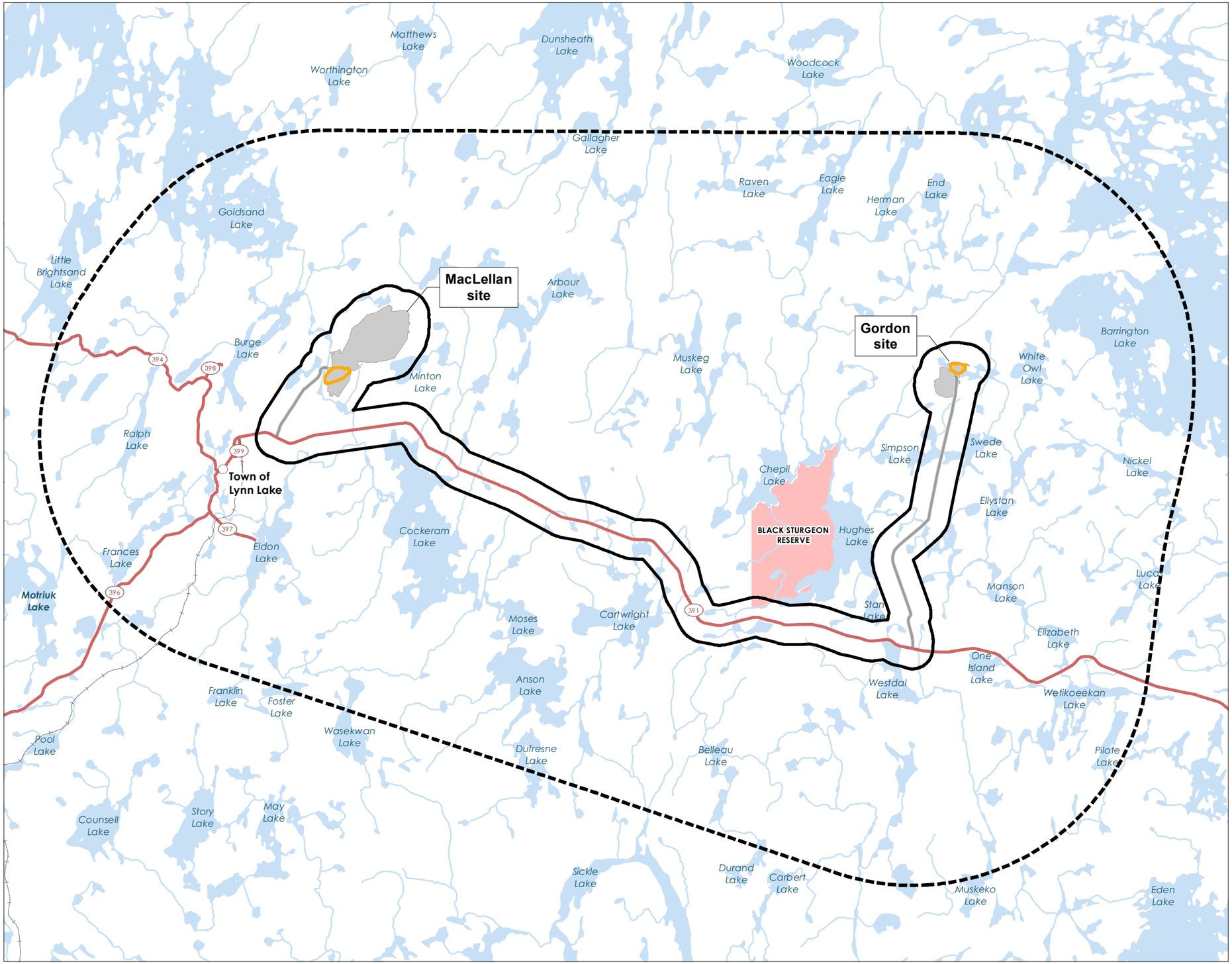
Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				Alamos will develop and implement a Project-specific Wildlife Monitoring and Management Plan that outlines how risk of harm will be managed in accordance with ECCC guidance. This plan will be developed in liaison with ECCC and federal agencies. • Flag environmentally sensitive areas (e.g., seeps and springs, mineral licks, dens, roosts, stick nests, hibernacula) prior to clearing and construction, and evaluation of the features for additional mitigation measures (e.g., setbacks). • Retain actual or potential habitat trees where safe and technically feasible to do so. If removal is required, removal activities will be scheduled, to the extent practical, outside the core maternity roosting season for bats (May 1 to August 31) and breeding season for birds (Zone C7; May 7 to August 7). If habitat tree removal or general tree clearing is required during the maternity roosting period, a qualified biologist will review the trees to make a determination on occupancy before removal. This measure will also reduce the risk to other species that use trees for denning or shelter (e.g., American marten). • Maintain vegetation cover along the boundaries of high activity areas (e.g., access roads) to reduce sensory (noise and visual) disturbance. • Report the discovery of nests or other animal dwellings (e.g., lodges, dens) to Alamos, and appropriate action or follow-up will be guided by the Wildlife Monitoring and Management Plan. Report to the Wildlife and Fisheries Branch of DARD for direction on follow-up actions in necessary. • Demolish existing buildings and infrastructure outside of the nesting window for birds (Zone C7; May 7 to August 7) and the maternity roosting period for bats (May 1 to August 31) as per the Wildlife Monitoring and Management Plan. • Design for enclosure of mill feed storage area and use of wet scrubbers (or equivalent). • Design of water management facilities to collect and treat (as required) surplus contact water and design for cyanide detoxification. • Manage vegetation around collection ponds and the TMF and consider additional mitigation measures (e.g., fencing, netting, bird/bat deterrents) if monitoring identifies concerns regarding wildlife use of these areas. • Bird deterrents, if required, to keep migratory birds from using the TMF and contact ponds during construction and operation and/or the open pit during closure. • Project infrastructure and facilities designed to avoid sensitive areas (e.g., watercourses, important habitat types) to the extent possible, within watershed boundaries, and PDA reduced to the extent practical. • Design and maintenance for control of fugitive dust emissions from roads, material handling, and storage areas/stockpiles and from equipment emissions. • Design for administrative controls, including a no idling policy to reduce emissions from vehicles and mobile equipment.	

Table 1 Mathias Colomb Cree Nation[1] Traditional Land and Resource Use Information and Mitigation Table

1	2	3	4	5	6
Traditional Land and Resource Use Information	**Location of Sites or Areas Relative to the Project[2]**	**Mathias Colomb Cree Nation Recommendations and Requests**	**Relevant May 2020 Environmental Impact Assessment Section(s)**	**Mitigation Measures Proposed in the May 2020 Environmental Impact Assessment**	**Additional Alamos Response**
				• Design for adherence to applicable Transport Canada emission requirements for new mobile equipment on site. • Design for use of perimeter berms and runoff and contact-water collection ditches. • Design for fuel storage in approved above ground storage tanks equipped with secondary containment systems in accordance with federal and provincial regulation and standards. • Design of sewage treatment plant and water management facilities to treat effluent to levels that will meet applicable federal and provincial guidelines of toxicity. • Dispose and handle waste oils, fuels, and hazardous waste as recommended by the suppliers and/or manufacturers in compliance with federal, provincial, and municipal regulations. • Maintain cyanide concentrations below guidelines. Project activities will be aligned with the standards of practice set out in the International Cyanide Management Code. • Manage vegetation around collection ponds and the TMF to deter wildlife and consider additional mitigation measures (e.g., fencing, netting, bird/bat deterrents) if monitoring identifies concerns regarding wildlife use of these areas. The application of relevant actions in the Wildlife Monitoring and Management Plan (Chapter 23, Section 23.5.14 of the EIS) to reduce unanticipated effects on wildlife using an adaptive management approach.	

Appendix B MAP 17-1 FROM THE MAY 2021 EIS



Stantec

Alamos Gold Inc.

Project Infrastructure

- Proposed Open Pit
- Project Development Area

Study Area

- Current Use of Lands and Resources for Traditional Purposes Local Assessment Area (LAA)
- Current Use of Lands and Resources for Traditional Purposes Regional Assessment Area (RAA)

Landbase

- Highway
- Access Road
- Rail
- Watercourse
- Waterbody
- First Nation Reserve

N

0 2 4 Kilometres

(At original document size of 11x17)
1:200,000

Notes

1. Coordinate System: NAD 1983 UTM Zone 14N

2. Base Data Sources: Government of Manitoba and Government of Canada

Project Location
Lynn Lake, Manitoba

Prepared by ACampigotto on 2020-01-20
Technical Review by BAmundson on 2020-01-20
Senior GIS Review by GKroupa on 2020-01-20

Client/Project
ALAMOS GOLD INC.
Lynn Lake Gold Project

111473008

Map No.
17-1

Title
Current Use of Lands and Resources for Traditional Purposes - Spatial Boundaries

G:\...GIS Project Folder\111473008_LGP_EA\Figures\Ch17_TraditionalLandandResources\For Review\Map17-1_1_RILSocialBoundaries_20200120.mxd Revised: 2020-01-31 By: ACampigotto