POTENTIAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT AND PROPOSED MITIGATION MEASURES
IMPACT-MITIGATION TABLE

General Comments

The Prairie Creek Mine is located in a remote area, on territorial land within the Nahanni National Park Reserve. The nearest settlement is Nahanni Butte, approximately 90 km to the south-east. There is no other commercial development proximal to the Mine. Prairie Creek, a tributary of the South Nahanni River, is essentially pristine, with some natural water mineralization. As such, the expansion of the proposed Mine, like the previously proposed development, will not have any cumulative effects.

Climate change has been considered where necessary in project design. The revised project includes natural gas as opposed to diesel as the main power generation source, leading to an overall reduction in green-house gas (GHG) emissions. Climate change effects on peak runoff and requirements for conveyance will be addressed in final design of project elements. Climate change effects on receiving water flow volumes are accounted for in analyses of predicted water quality assuming suitable low flow scenarios. In any event, more recent data from flow stations in the area suggest an increase in winter base flows, which is the important season for low creek flow prediction scenarios.

Regarding input from affected parties, the main elements of the proposed project were extensively assessed in EA0809-002 with review by Indigenous groups. Changes related to project expansion were described and discussed with Indigenous groups prior to this application. See our engagement description and log for details.

ABIOTIC COMPONENTS			
Land			
Extent of land area to be disturbed (m^2 or ha)	Additional 42 ha for larger waste rock pile (WRP), but more saved by eliminating 2nd water storage pond (WSP).		
Are sensitive land features present? If so, indicate the type(s): karsts, eskers, ice patches, mineral licks, hot and warm springs, glacial refugia, other	The additional WRP area is steep and sparsely vegetated. No sensitive features. Poor wildlife habitat. No overburden stripping is needed in the expansion area. The south aspect and thin to no soils gives high confidence of permafrost absence. Transfer of filtered tailings between Primary and Secondary stockpiles by dump truck. Movement of additional mineral concentrates.		
Extent of sensitive land areas to be disturbed (m^2 or ha)	0		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Soil contamination • Soil compaction	Clearing of timber, brush, or vegetation mat	X	Impact – vegetation loss from WRP. Inconsequential in terms of area, and low value. No clearing required. Vegetation cover after WRP reclamation will be better than it is presently due to thin or absent soil cover
	Stripping of overburden		

• Destabilization/erosion • Change in soil structure • Inability to support vegetation • Other	Bulk soil sampling		
	Trenching, diamond drilling, geotechnical borehole drilling		
	Cut and fill	X	Impact – erosion. Extensions to WRP runoff diversions will include cut and fill construction. Sediment management during construction per the DCP. Diversions will be lined and will have energy dissipation, sized for flow peaks and considering climate change. The SECP will be followed. There will be SNP monitoring.
	Oil and gas exploration well drilling		
	Directional drilling (underground)		
	On-site storage or disposal of wastes (domestic garbage, sewage, waste petroleum products, drilling waste and hydraulic flowback fluids, hazardous wastes, etc.)		
	Transfer, storage, and use of petroleum products and/or chemicals	X	Impact – soil contamination. A bioremediation cell may be operated temporarily in an already disturbed area (Bone Yard). Cell will be lined and covered, subject to Biocell guidelines[1], and monitoring of soil quality.
	Transfer, storage, and use of explosives		
	Use of fertilizers, pesticides, herbicides		
	Use of motorized and heavy equipment	X	Impact – destabilization/erosion. Trucks required for waste rock disposal and cover placement. However, activity would be mostly internal to the WRP disturbed area, mostly on waste rock with no additional impact. Access roads to location will include runoff control. On closure, cover would be graded, runoff management (considering climate change) until vegetation has established, as defined in CRP.
	Other		Impact – soil contamination. Transfer of filtered tailings between Active and Secondary stockpiles will be by dump truck with tarp cover to/from covered areas. Use of best practices to avoid over-filling and loss of tails in transit. Impact – soil contamination. Movement of greater mineral concentrate volume. All concentrates will be containerized. Containers enter and leave loading building on rollers. Trucks do not enter building. Best practices for loading. Contaminant Loading Management Plan will be followed.

[1] Guideline for the Design, Operation, Monitoring, Maintenance and Closure of petroleum hydrocarbon contaminated soil treatment facilities in the Northwest Territories, Jan. 2020

POTENTIAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT AND PROPOSED MITIGATION MEASURES
IMPACT-MITIGATION TABLE

Water			
Groundwater			
Is groundwater present? If so, indicate the type(s): shallow, deep, fresh, saline	There is very limited, shallow, fresh groundwater present below the WRP expansion area due to rock exposures and steep slope. Deeper, fresh groundwater is present in Harrison and Prairie Creek valley alluvial areas.		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Water table alteration • Infiltration changes • Changes in water quality • Temperature changes • Other	Withdrawal of groundwater	X	Impact – water table. Additional well water will be drawn for camp supply, but is an order of magnitude less than supply potential. Withdrawals are metered and monitored.
	Trenching, diamond drilling, geotechnical borehole drilling		
	Installation of groundwater monitoring wells		
	Directional drilling (underground)		
	Oil and gas exploration well drilling		
	Clearing of timber, brush, or vegetation mat		
	Stripping of overburden		
	Transfer, storage, and use of petroleum products and/or chemicals		

	Other	X	Impact – water quality. During operations, WRP seepage will be collected to protect groundwater in the Harrison Creek Alluvial Aquifer (HCAA). Groundwater that would flow into the Mine will be intercepted, preventing contamination. Groundwater in the Prairie Creek Alluvial Aquifer (PCAA) will be protected from seepage from the Run of Mine (ROM) ore stockpile, Secondary Filtered Tailings Stockpile and temporary waste rock and DMS surge piles by lined pads with seepage collection. The Secondary Tailings Stockpile will have a tarpaulin cover for dust control, which will also limit leaching by precipitation. Camp Ditch flows, which will include interception of shallow groundwater down-gradient of the ROM Stockpile, will be collected in a sump and recycled. All of these activities will protect and mitigate groundwater quality. HCAA and PCAA water quality will be monitored. See Water Management Plan for details. After mine closure, groundwater is the potential pathway for metal loading from the WRP (via the HCAA and PCAA) and backfilled mine (via the PCAA) to Prairie Creek. Loading from the WRP will be mitigated by the placement of a soil cover to limit seepage. Loading from the Mine will be mitigated by measures to backfill and seal all stopes and connections to the Vein flow conduit, and backfilling and sealing all underground access. Revised predictions indicate that post-closure Prairie Creek water quality will be better than previously assessed and screened, and will meet water quality objectives (WQO). Post-closure water quality monitoring will verify this, and a contingency pump-and-treat groundwater scheme for the backfilled mine is provided for in the event that water from the initial flushing of the backfill during water-table rebound requires treatment in order that WQO can be met. These mitigations and other details are provided in the Closure and Reclamation Plan.
Permafrost			
Is permafrost present? If so, indicate the type(s): continuous or discontinuous	Discontinuous permafrost exists in the South Yard associated with muskeg and clay soils. Not present at WRP site due to south aspect, thin to no soils and rocky exposures		
Extent of permafrost area to be disturbed (m^2 or ha)	Less in South Yard than was proposed for the development of a 2nd WSP. Part of the area (~22 ha compared to 73 ha) will be used to store excess natural overburden.		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Loss or change in extent • Changes in seasonal fluctuations • Change in persistence	Clearing of timber, brush, or vegetation mat		
	Stripping of overburden	X	Impact – change in extent. There will be no stripping in the WRP expansion area. No stripping is needed in the Excess Material Pile area, excess material can be placed directly over the existing area. Alternatively, the soil can be stripped and stockpiled. Permafrost impacts in this area may occur but were screened for possible 2nd WSP development.
	Construction of structures (buildings, water or waste management facilities, etc.)	X	Impact – change in extent. Excess overburden from the WSP and WRP will be placed in the Excess Material Pile. Vegetation and overburden will not need to be removed prior to placement, but can be. Permafrost impacts may occur but were screened for possible 2nd WSP development. These impacts will not be negatively affect the pile significantly.

	Construction (development or alteration: widening, straightening, detours), maintenance, and operation of lines, trails, or rights-of-way		
	Trenching, diamond drilling, geotechnical borehole drilling		
	Other		
Surface Water			
Is surface water present? If so, indicate the type(s): lake, river, stream, wetland (bog, marsh, swamp, fen), seasonal, year-round	Prairie Creek is the main receiving water of other surface water and groundwater. Harrison Creek is a receptor of runoff diverted around the WRP. Note, any seepage from the WRP not intercepted would discharge to the Harrison Creek Alluvial Aquifer (HCAA) and flow within it, with likely limited discharge to the creek itself. Similarly, any discharges to groundwater in the main site area would flow in the Prairie Creek Alluvial Aquifer (PCAA) ultimately discharging to Prairie Creek. The HCAA also discharges to the PCAA.		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Water flow or level changes (permanent, temporary, seasonal) • Drainage pattern changes • Temperature changes • Changes in water quality • Wetland impairment • Changes to aquatic habitat (see Biotic section below)	Withdrawal of water from a watercourse		
	Retaining, storing, or diverting water	X	Impact – water quality. The upslope WRP expansion area will also require runoff diversions similar to the original area. Sediment management will be needed during construction (see facility DCP). Sedimentation will also be controlled down-gradient (energy dissipation basins). See Water Management Plan. Runoff will be monitored (SNP).
	Construction and use of a watercourse crossing (bridge, ford)		
	Watercourse alteration (ditch construction, channelling, training, installation of culvert)		
	Construction of dams and impoundments		

• Other	Direct or indirect disposal of waste into water	X	Impact – water quality. During operations, changes in water management plans will see much less metal load discharged due to recycling of mill process water, reduced mine water flows, and interception of groundwater underground preventing contamination. WRP seepage will be collected and recycled. Groundwater intercepted in the mine extension area will be temporarily stored in the WSP followed by controlled release with treatment as necessary. Sewage treatment effluent will be recycled to the WSP then the Mill. Same applies to ROM stockpile and Secondary Tailings stockpile seepage. Surface water impacts from the paste plant (spills), biocell (if built, will be lined and covered) are not expected and will be mitigated by best practices for operations. Operation of the most significant sources is subject to plans including the Tailings and Backfill Management Plan, Waste Rock and Ore Storage Management Plan and the Water Management Plan. Those sources are also subject to SNP monitoring. After mine closure, revised predictions for the larger WRP and backfilled mine indicate Prairie Creek water quality will be the same or better than predicted during EA, and will meet expected WL SSWQO. Reclamation details are provided in the Closure and Reclamation Plan.
	Clearing of timber, brush, or vegetation mat near a watercourse		
	Stripping of overburden adjacent to a watercourse	X	Impact – water quality. The Excess Material Pile will be ~100 m away from Prairie Creek, with muskeg between the pile and creek. Sediment controls will be used as needed. Note, the WRP extension area is upslope and does not require stripping.
	Excavation or stockpiling of earth or gravel adjacent to a watercourse	X	Impact – water quality. The Excess Material Pile will be located where the possible 2nd WSP was to be located. Site clearing may still be required, followed by material placement. The facility is ~100 m from Prairie Creek. There is muskeg vegetation between the site and Prairie Creek. As such, the risk of sediment release is low, however runoff controls would be implemented as necessary. See facility DCP. Similarly, the area adjacent to the airstrip will require some grading for laydown for in-bound and out-bound concentrate containers. There is a swale between this area and the airstrip which ultimately discharges to Prairie Creek. Runoff controls will be needed after grading, and potentially for runoff events.
	Use of motorized or heavy equipment adjacent to, within, or through a watercourse		
	Transfer, storage, and use of petroleum products and/or chemicals near a watercourse	X	Impact – water quality. LNG/CNG are not considered to be a surface water risk because any release/spill would volatilize.
	Use of fertilizers, pesticides, or herbicides		
	Other		

POTENTIAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT AND PROPOSED MITIGATION MEASURES
IMPACT-MITIGATION TABLE

Air			
If applicable, indicate the type(s) of air pollutants: aerosols, particulate matter, noxious gases, volatile organic carbons, hazardous air pollutants, dust, other	Increased camp personnel (180 from 120) will mean a nominal increase in incinerator emissions. However, conversion from diesel to primarily natural gas for power generation, use of propane for heating, will mean lower emissions overall. There is potential of dust from stockpiles, mainly filtered tailings stockpile (secondary), and from movement of filtered tailings between the active and secondary stockpiles. There will be additional mineral concentrates to load, store and transport.		
Indicate the estimated maximum dispersal distance	300 m		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Changes in air quality • Harm to living things • Increased greenhouse gases • Other	Burning of fossil fuels	X	Impact – GHG. Net reduction due to use of primarily natural gas (NG) for power generation, propane for heat, instead of diesel powergen, which will outweigh increases from incinerator operation. Also less risk from spills as NG will volatilize, no liquid. The Air Quality and Emissions Monitoring and Management Plan (AQEMMP) will be followed.
	Mobilization and operation of equipment for construction and operational activities		
	Release of underground gases		
	Increased road traffic		
	Other	X	Impact – GHG. Dual chamber incinerator use for increased garbage. GHG increase but much less than decrease due to NG use for powergen. The Incinerator Management Plan will be followed with emissions monitoring. Emissions from a sewage sludge cell, if built, would be very limited. The cell is unlikely to be built as we are proposing to either incinerate the dewatered sludge or include it in the paste backfill. Impact – air quality. Dust from ore/waste stockpiles will be mitigated by moisture content and large particle size. Secondary filtered tailings stockpile will have a tarpaulin cover. Transfer of tailings from covered Active stockpile will use dump truck with roll-back cover, over-fill controls, with delivery to covered structure next to Secondary stockpile. Tailings moved on the stockpile by loader. Monitoring as part of AQEMMP. Impact – air quality. Movement of additional mineral concentrates. All concentrates will be containerized. Containers will be clean entering and leaving loading building, no trucks in the building. Best practices for loading, use of Contaminant Loading Management Plan.

POTENTIAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT AND PROPOSED MITIGATION MEASURES
IMPACT-MITIGATION TABLE

BIOTIC COMPONENTS			
Vegetation			
If vegetation will be removed or compacted, indicate type(s): trees, shrubs, thickets, muskeg, Species at Risk plants, may-be-at-risk plant species, other	Sparse trees, thickets in steep, rocky WRP expansion area. Muskeg in Excess Material Stockpile area.		
Extent of vegetation to be removed or compacted (m^3 or ha)	42 ha for WRP expansion. Excess Material Stockpile area overburden removal was screened previously for possible 2nd WSP development.		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Direct loss of vegetation • Loss of Species at Risk or may-be-at-risk plants • Change in species composition • Introduction of non-native (invasive) species • Effects on plant health (dust, metals, toxins) • Increased risk of fire • Compaction of vegetation • Other	Clearing of timber, brush, or vegetation mat	X	Impact – loss of vegetation. Limited brush removal on steep rocky slopes of WRP expansion area. WRP soil cover after reclamation will support revegetation re the CRP. Vegetation loss will occur with the Excess Material Pile but will be temporary.
	Stripping of overburden		
	Construction (development or alteration: widening, straightening, detours), maintenance, and operation of lines, trail, or rights-of-way		
	Construction of structures (buildings, water or waste management facilities, etc.)		
	Reclamation activities (levelling, contouring, placement of fines or woody debris, re- vegetation, fertilization)		
	Use of motorized and heavy equipment		
	Burning of fossil fuels		
	Increased road traffic		
	Transfer, storage, and use of petroleum products and/or chemicals		
	Excavation or stockpiling of earth and/or gravel		
	Other		

POTENTIAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT AND PROPOSED MITIGATION MEASURES
IMPACT-MITIGATION TABLE

Terrestrial Wildlife Habitat			
If sensitive wildlife habitat is present, indicate type(s): Species at Risk (SAR), Canadian Important Bird Areas, migratory birds, keystone species, wildlife corridor	The area is peripheral to range for Mountain Woodland Caribou, and is in grizzly bear range, although neither species have been observed on the steep slopes of the WRP expansion area or the adjacent Bone Yard. Dall sheep are also in the area, but typically inhabit the slopes on the east side of the main site area.		
Extent of sensitive wildlife habitat to be removed or disturbed (m^3 or ha)	42 ha of habitat removal in WRP expansion area, but habitat does not currently appear to be in use. Area of slopes on east site of main site was previously screened for Dall sheep disturbance, but possible increase in air traffic may add to disturbance.		
If wildlife habitat will be removed or disturbed, indicate type(s): ungulates, furbearers, carnivores, small mammals, birds, insects, sensitive wildlife habitat (as noted above)	Caribou, grizzly bear, Dall sheep.		
Extent of wildlife habitat to be removed or disturbed (m^3 or ha)	42 ha.		
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Direct loss or removal of habitat, dens, or nests • Loss or removal of keystone species and/or SAR habitat • Fragmentation of wildlife corridor • Direct injury or mortality • Disturbances to key lifecycle stages: breeding, feeding, nesting, staging • Effects on population abundance • Change in species diversity • Effects on wildlife health (toxins, metals, etc.) • Changes to migratory movement patterns	Clearing of timber, brush, or vegetation mat	X	Impact – loss of habitat in WRP extension area. Minimal impact because habitat does not appear to be in use. Habitat is poor. Loss would be temporary until after reclamation. Refer to the WMMP
	Stripping of overburden		
	Construction of structures (buildings, water or waste management facilities, etc.)		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way		
	Increased traffic risk to wildlife	X	Impact – disturbance. Dall sheep inhabit slopes on east site of main site. Possible increase in air traffic may add to disturbance. However, air traffic unlikely to increase due to use of larger planes. Also, Dall sheep do not appear to be sensitive to site activity, numbers are increasing. Mitigation and monitoring already provided in the WMMP.
	Increased human presence		
	Noise (use of heavy equipment, blasting, crushing, drilling)		

• Changes to predator-prey relationships • Human-wildlife conflicts • Other	Transfer, storage, and use of petroleum products and/or chemicals		
	On-site storage or disposal of wastes (domestic garbage, sewage, waste petroleum products, drilling waste and hydraulic flowback fluids, hazardous wastes, etc.)	X	Impact – injury or mortality. A sewage sludge storage cell may be located in the current Bone Yard near the WRP, and could be a wildlife attractant. The cell would be covered to limit odour. Our preference is to dewater and incinerate the sludge. Animal-human interactions will be managed according to the WMMP, specifically bear encounters.
	On-site disposal of domestic wastes (burning, burying)		
	Other		
Aquatic Habitat			
Indicate types of aquatic species: Species at Risk, fish, mammals (furbearers), amphibians, aquatic macroinvertebrates, insects, aquatic macrophytes	Bull trout, mountain whitefish are known to occur in Prairie Creek. Harrison Creek is not considered to be fish habitat due to the channelized section through the mine site which ends with two large partially perched culverts, and upstream of the Mill there is a series of steps and pools which are considered to be migration barriers.		
Extent of aquatic habitat removed or disturbed for breeding, feeding, nesting, staging (m^3 or ha)			
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Breeding disturbances • Change in species diversity • Effects on health (toxins, metals, sediment, etc.) • Changes to migratory movement patterns • Changes to predator-prey relationships • Effects on population abundance • Change in species diversity • Other	Clearing of timber, brush, or vegetation mat near a watercourse		
	Stripping of overburden adjacent to a watercourse		
	Blasting near a watercourse		
	Construction and use of a watercourse crossing (bridge, ford)		
	Watercourse alteration (ditch construction, channelling, training, installation of culvert)		
	Use of motorized or heavy equipment adjacent to, within, or through a watercourse		
	Withdrawal of water from a watercourse		

	Retaining, storing, or diverting water	X	Impact – effects on health. Runoff diverted around the expanded WRP area during operations will be carried in lined ditches with energy dissipation basins, and will be subject to monitoring (SNP). This runoff would discharge to Harrison Creek which is not considered to be fish habitat. The SECP would be followed.
	Construction of dams and impoundments		
	Direct or indirect disposal of waste into water	X	Impact – effects on health. As for surface water, the potential for effects during operations will be less related to a reduction of metal load discharged. Mill effluent, contact mine water and sewage treatment effluent will be recycled to the WSP then the Mill. See the Water Management Plan for details. Discharges will need to meet EQC and WQO, will be limited to fewer analytes (zinc, arsenic) and will be monitored (SNP). After mine closure, Prairie creek water quality is predicted to be better than previously estimated, and will meet SSWQO protective of aquatic life.
	Other		

CULTURAL COMPONENTS

Wildlife Harvesting

Are harvesting areas present? If so, indicate type(s): Community Harvesting Areas, Special Harvesting Areas, Group Trapping Areas, etc.	No. No harvesting occurs proximal to the Mine at present.
Extent of overlap of Project area with harvesting areas identified above (fish lakes, trapping or hunting areas) (m^3 or ha)	

Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Loss or reduction in game species populations • Effects on traditional land use, subsistence, and harvesting rights • Other	Clearing of timber, brush, or vegetation mat		
	Stripping of overburden		
	Noise (use of heavy equipment, blasting, crushing, drilling)		
	Oil and gas exploration well drilling		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way		
	Increased traffic risk to wildlife		

	Withdrawal of water from a watercourse		
	Direct or indirect disposal of waste into water		
	Other		

Cultural Integrity and Heritage Resources

If present, indicate types: places of significant cultural or spiritual value, heritage sites, important subsistence and harvesting areas (group trapping areas, camps and, log and timber harvesting areas, berry picking and medicine plant gathering areas) , traditional trails, burial sites, sacred sites, archaeological or historic sites, artifacts and other objects of historical, cultural, or religious significance, historical or cultural records	No cultural or heritage sites are known to be present proximal to the Mine site. Nearly all of the proposed areas for disturbance associated with the expansion are already disturbed and were previously screened. The exception is the WRP expansion area. This area is steep and unlikely to be of cultural significance. The Excess Material Stockpile area was previously screened for the possible development of a 2nd WSP. In addition, permit conditions provide protection for the potential discovery of artifacts.

Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Change to or loss of cultural integrity • Change to or loss of traditional lifestyle • Change to or loss of heritage resources • Other	Clearing of timber, brush, or vegetation mat		
	Noise (use of heavy equipment, blasting, crushing, drilling)		
	Construction of structures (buildings, water or waste management facilities, etc.)	X	Impact – heritage resources. Steep WRP extension area to be disturbed is considered to have very low heritage resource potential. The Excess Material Pile area was previously screened and is already developed with excavations, access roads, trailers, and the Reagent Pad. Muskeg terrain represents low potential for traditional use (camp) and heritage resources. Permit conditions provide protection for the potential discovery of artifacts.
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way		
	Increased human presence		
	Withdrawal of water from a watercourse		

	Retaining, storing, or diverting water		
	Construction of dams and impoundments		
	Direct or indirect deposit of waste into water		
	Other		
Social and Economic Well-being			
Potential Impacts	**Activity** *Use an "x" to indicate which apply*	X	**Potential Project Impacts and Proposed Mitigations** *Using the list at left, describe the potential impact(s) of each identified Project activity and the proposed measure(s) to reduce each of these impacts.*
• Increased human health hazard and risk • Economic opportunities or losses (employment, training) • Change in ecological, cultural, social, or economic values identified for protection in approved Land Use Plans • Impairment of the recreational or traditional uses of the land or water • Impairment of the aesthetic quality of the land or water • Changes to the use of the area by other non-Indigenous people (e.g. trappers, outfitters, residents, hunters, forest harvesters, other authorized projects) • Other	Noise (use of heavy equipment, blasting, crushing, drilling)		
	Transfer, storage, and use of petroleum products and/or chemicals	X	Impact – human health risk. LNG or CNG bullets pose a risk of explosion. However, the gas will be stored in approved vessels, double-wall, and personnel will be trained in the use of those vessels. The vessels would be stored on the east side of the Tank Farm, distant from personnel concentrations. The vessels would be used one at a time, moved to the west side of the Mill where the gensets will be located. This is a traffic area but not proximal to the Admin Building, Shops or accommodations. Risk of release low due to use of approved vessels, double-walled tanks, low consequence as liquid would vaporize. The bullets will be on dedicated trailers for ease of movement on site. Access road transport relates to different authorizations.
	On-site storage or disposal of wastes (domestic garbage, sewage, waste petroleum products, drilling waste and hydraulic flowback fluids, hazardous wastes, etc.)		
	Construction (development or alteration: widening, straightening, detours), maintenance and operation of lines, trails, or rights-of-way		
	Construction of structures (buildings, water or waste management facilities, etc.)		
	Increased human access and presence		
	Operating in a remote location inaccessible or not easily accessible by emergency aid		

	Withdrawal of water from a watercourse		
	Retaining, storing, or diverting water		
	Construction of dams and impoundments		
	Direct or indirect deposit of waste into water		
	Other	X	Impact – economic opportunities. Increased opportunities for jobs and larger business contracts during construction and operations.