APPENDIX IV

Updated Effects Assessment Tables

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
Climate Effects Assessment	Direct GHG emissions from fossil fuel burning in internal combustion engines; indirect GHG emissions from electrical use (short term)	Mine site and tailings impoundment; utilities, new and existing haul roads, access road, waste rock pile	Construction	Adverse	Negligible	Hydro-electrical use and fuel and energy conservation	Yes	GHG will be released	Negligible	Trans- boundary	Short-term	Continuous	Reversible Short-term	High resilience	Negligible Adverse	Not Significant	High	Intermediate
	Total (direct and indirect) GHG emissions of 30 kt C02e per year, 3.06 kt C02e per Mt ore produced, and 0.026 kt C02e per consumed terajoule energy	Mine site and tailings impoundment; utilities, new and existing haul roads, access road, waste rock pile	Operations and Maintenance	Adverse	Medium	Electrical use and fuel and energy conservation	Yes	GHG will be released	Medium	Trans- boundary	Medium-term	Continuous	Reversible Short-term	High resilience	Minor Adverse	Not Significant	High	Intermediate
	Direct GHG emissions from fossil fuel burning in internal combustion engines; indirect GHG emissions from electrical use	Mine site and tailings impoundment; utilities, new and existing haul roads, access road~~, waste rock pile~~	Closure	Adverse	Negligible	Fuel and energy conservation	Yes	GHG will be released	Negligible	Trans- boundary	Medium-term	Sporadic	Reversible Short-term	High resilience	Negligible Adverse	Not Significant	High	Intermediate
Surface Water Quality Effects Assessment	Surface runoff and siltation contaminant loading.	Mine Site	Construction and Operations	Adverse	Moderate	Silt fences, best management practices; environmental monitoring; erosion management plan	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality, more prominent during freshet and rain events.	Medium	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
		Access Road/Transmission Line	Construction and Operations	Adverse	Moderate	Silt fences, best management practices, environmental monitoring; erosion management plan	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality, more prominent during freshet and rain events.	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Mine Site/AccessRoad/Transmission Line	Closure and Post-closure	Adverse	Negligible	Silt fences, best management practices; environmental monitoring; erosion management plan	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality, more prominent during freshet and rain events.	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Airborne contaminant loading from blasting, rock crushing, etc.	Mine Site	Construction and Operations	Adverse	Minor	Best management practices, dust suppression, environmental monitoring	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Mine Site	Closure and Post-closure	Adverse	Negligible	Best management practices, dust suppression, environmental monitoring	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road/Transmission Line	Construction and Operations, Closure and Post-closure	Adverse	Negligible	Best management practices, dust suppression, environmental monitoring	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Leaching of nitrogen residues from blasting	Mine Site	Construction and Operations, Closure and Post-closure	Adverse	Minor	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) resulting in degraded water quality	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Loom	High
		Access Road/Transmission Line	Construction and Operations, Closure and Post-closure	Adverse	Negligible	Proper storage and handling of blasting materials away from waterways, regular mainteniance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) resulting in degraded water quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Metal leaching and Acid Rock Drainage (ML/ARD) contamination	Mine Site	Construction and Operations, Closure and Post-closure	Adverse	Major	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.	Yes	ML/ARD resulting in degraded water quality	Medium	Local	Long-term	Sporadic	Reversible Long-term	Neutral	Minor	Not Significant	Medium	Low
		Access Road/Transmission Line	Construction and Operations, Closure and Post-closure	Adverse	Negligible	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.	Yes	ML/ARD resulting in degraded water quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Discharges and spills and associated water chemistry effects	Mine Site	Construction and Operations	Adverse	Moderate	Best management practices, environmental monitoring, spill contingency plan, water treatment	Yes	Release of potential contaminants resulting in degraded water quality	Medium	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	High	Low
		Mine Site	Closure and Post-Closure	Adverse	Major	Best management practices, environmental monitoring, spill contingency plan, water treatment if needed	Yes	Release of potential contaminants resulting in degraded water quality	Medium	Local	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Low
		Access Road/Transmission Line	Construction and Operations, Closure and Post-closure	Adverse	Negligible	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential contaminants resulting in degraded water quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
Surface Water Quantity Effects Assessment	MCS-4a	Clean water diversion~~, waste rock dump~~	Construction, Operations, Closure/Decommissioning, Post-Closure	Adverse	Major	N/A	Yes	36% reduction in watershed area and pit dewatering will result in decreased flow rates	High	Local	Far Future	Continuous	Irreversible	High	Major	Not Significant	High	Intermediate
	MCS-6	Clean water diversion~~, waste rock dump~~	Construction, Operations, Closure/Decommissioning, Post-Closure	Adverse	Moderate	N/A	Yes	2% reduction in watershed area and pit dewatering will result in decreased flow rates	Medium	Local	Far Future	Continuous	Irreversible	High	Moderate	Not Significant	High	Intermediate
	MCS-7	Clean water diversion; TSF	Construction, Operations, Closure/Decommissioning, Post-Closure	Adverse	~~Major~~ Moderate	~~N/A~~ 50% riparian baseflow maintained. Fish habitat compensation	Yes	~~78% reduction in watershed area will result in decreased flow rates. Increased groundwater recharge will augment flow during low flow periods.~~ Decrease flows by 50% loss of aquatic habitat (HADD)	~~High~~ Low	Local	~~Far Future.~~ Medium-term	Continuous	Reversible ~~Long-term.~~ Short-term	High	~~Major~~ Minor	Not Significant	High	~~Intermediate.~~ High
	MCS-8	Clean water diversion; TSF	Operations	Beneficial	Minor	N/A	No	Increased watershed area caused by clean water diversions										
	MCS-10a	Clean water diversion; TSF	Construction, Operations	Adverse	~~Moderate~~ Minor	~~N/A.~~ Fish habitat compensation	Yes	~~22% reduction in watershed through production as size of TSF increases.~~ Decrease flows by 17%. Loss of aquatic habitat (HADD)	Low	Local	~~Far Future.~~ Medium-term	Continuous	Reversible Long-term Short-term	High	~~Minor~~ Negligible	Not Significant	High	~~Intermediate.~~ High
	Morrison Lake	All Project components	Construction	Beneficial	Negligible	N/A	No	Increased flow caused by dewatering of Booker Lake and Ore Pond										
	Morrison Lake	All Project components	Operations	Adverse	Negligible	N/A	No	Up to 10% decrease in flow caused by loss of watershed area and pit dewatering.										
	Morrison Lake	All Project components	Post-Closure	Neutral	Negligible	N/A	No	Slight decrease in flow during fallwinter, slight increase in flow during spring/summer										
Groundwater Quality Effects Assessment	Seepage to groundwater from the TSF	TSF	Operation	Adverse	Moderate	Monitoring of groundwater around TSF area. Seepage mitigation in TSF. Seepage collection. Site Specific Water Quality Objectives	Yes	Increased ~~levels of chloride, ammonia, nitrate, nitrite, molybdenum, and potassium to groundwater.~~ concentrations of metals and sulphate	Medium	Local	Long-term	Continuous	~~Irreversible~~ Reversible (long-term)	Neutral	Moderate	Not Significant	~~High.~~ Medium	Intermediate
			Closure	Adverse	Moderate	Monitoring of groundwater around TSF area. Seepage mitigation in TSF. Seepage collection. Site Specific Water Quality Objectives	Yes	Increased ~~levels of chloride, ammonia, nitrate, nitrite, molybdenum, and potassium to groundwater.~~ concentrations of metals and sulphate	Medium	Local	~~Short term.~~ Long-term	Continuous	~~Irreversible~~ Reversible (long-term)	Neutral	Moderate	Not Significant	~~High.~~ Medium	Intermediate
			Post-Closure	Adverse	Moderate	Monitoring of groundwater around TSF area	Yes	Increased ~~levels of chloride, ammonia, nitrate, nitrite, molybdenum, and potassium to groundwater.~~ concentrations of metals and sulphate	Medium	Local	Far Future	Continuous	Irreversible	Neutral	Moderate	Not Significant	High	Intermediate
	Seepage to groundwater from Waste Rock Dump and Low Grade Ore Stock Pile	Waste Rock Dump, Open Pit, Low Grade Ore, Stockpile	Operation	Adverse	Moderate	Most seepage drains to the open pit. This water is pumped to the TSF during operation. Methods will be investigated for preventing seepage from the low grade are stockpile from entering the groundwater system, as this seepage could bypass the pit and move toward Morrison Lake.	Yes	Residual seepage from low grade ore stockpile enters groundwater during operation (source is removed at closure).	Low	Local	Long-term	Continuous	Reversible Long-term	Neutral	Minor	Not Significant	Medium	Intermediate
			~~Post-Closure~~	~~Neutral~~	~~Minor~~	~~All seepage from the waste rock dump will drain to the open pit. Excess water will be treated, then released to Morrison Lake.~~	~~No~~											

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	Spills of solvents, oils and fuels	All	Construction	Adverse Short-term	Minor	Management plans for materials handling and spill response, standard operating procedures; staff training	Yes	Introduction of contaminants to groundwater	Low	Local	Short-term	Sporadic	Reversible	Neutral	Negligible	Not Significant	High	Intermediate
			Operation	Adverse	Minor	Management plans for materials handling and spill response, standard operating procedures; staff training	Yes	Introduction of contaminants to groundwater	Low	Local	Short-term	Sporadic	Reversible Short-term	Neutral	Negligible	Not Significant	High	Intermediate
			Closure	Adverse	Minor	Management plans for materials handling and spill response, standard operating procedures; staff training	Yes	Introduction of contaminants to groundwater	Low	Local	Short-term	Sporadic	Reversible Short-term	Neutral	Negligible	Not Significant	High	Intermediate
Groundwater Quantity Effects Assessment	Decrease in groundwater table adjacent to the open pit.	Open Pit dewatering	Operation	Adverse	Major	Optimize pit dewatering rates via pre-operation hydrogeological field studies and operations monitoring and adaptive management.	Yes	At year 19, the groundwater table drawdown extends a maximum of 2 km from the pit and at the pit to maximum depth of 372 mbgs	Medium	Local	Medium-term	Continuous	Reversible	High	Major	Not Significant	High	Intermediate
	Increase in groundwater table in and adjacent to the open pit to near pre-mining baseline.	Open Pit refilling	Closure Decommissioning	Beneficial	Major	Groundwater table returns back to near baseline after pumping stops. None required.	No	Groundwater table returns to elevation slightly lower than baseline groundwater table.	Medium	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Beneficial	Major	Groundwater table returns back to near baseline after pit dewatering pumping stops. Maintain pit lake level once pit refills.	Yes	Groundwater table returns to elevation slightly lower than baseline groundwater table.	Medium	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
	Increase in groundwater table and flows beneath and surrounding the TSF.	TSF seepage into groundwater	Operation	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Medium-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Closure Decommissioning	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Far Future	Continuous	Irreversible	High	Moderate	Not Significant	High	Intermediate
	Minor local changes in groundwater table caused by surface water management (collection & diversion)	Diversion/collection ditches	Construction	Neutral	Minor	None required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Short-term	Continuous	Reversible	High	Negligible	Not Significant	Medium	Intermediate
			Operation	Neutral	Minor	None required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Medium-term	Continuous	Reversible	High	Negligible	Not Significant	Medium	Intermediate
			Closure Decommissioning	Neutral	Minor	Decommission collection/diversion ditches if no longer required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Post-Closure	Neutral	Minor	Decommission collection/diversion ditches if no longer required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Far Future	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
Effects on Groundwater Flow Patterns	Increase and change of direction of groundwater flows towards the open pit.	Open Pit dewatering	Operation	Adverse	Moderate	Optimize pit dewatering rates via pre-operation hydrogeological field studies and operations monitoring and adaptive management.	Yes	At year 19, the pit dewatering cone of depression extents to a maximum distance of 2 km from the ultimate pit rim.	Medium	Local	Medium-term	Continuous	Reversible	High	Major	Not Significant	High	Intermediate
	Increase and change of direction of groundwater flows towards the open pit.	Open Pit refilling	Closure Decommissioning	Beneficial	Moderate	Groundwater table returns back to near baseline after pit dewatering pumping stops. None required.	No	Groundwater table returns to elevation slightly lower than baseline groundwater table.	Medium	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Beneficial	Minor	Groundwater table returns back to near baseline after pit dewatering pumping stops. Maintain pit lake level once pit refills.	Yes	Groundwater table returns to elevation slightly lower than baseline groundwater table.	Medium	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
	Change in groundwater flow patterns beneath and surrounding the TSF.	TSF seepage to groundwater	Operation	Neutral	Minor	None required.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Medium-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
Groundwater Quantity Effects Assessment			Closure Decommissioning	Neutral	Minor	None required.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Neutral	Minor	None required.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
	Minor local changes in groundwater table caused by surface water management (collection and diversion).	Diversion/collection ditches	Construction	Adverse	Minor	None required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Operation	Adverse	Minor	None required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Closure Decommissioning	Adverse	Minor	Decommission collection / diversion ditches if no longer required	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Post-Closure	Neutral	Minor	Decommission collection / diversion ditches if no longer required	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Far Future	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
Effects on Groundwater Aquifer Storage	Net decrease in aquifer storage surrounding the open pit.	Open Pit dewatering	Operation	Adverse	Major	Optimize pit dewatering rates via pre-operation hydrogeological field studies and operations monitoring and adaptive management	Yes	At year 19, the maximum pit dewatering rate is 291 m3/hr. The groundwater contribution is 91% or 264 m3/hr.	Medium	Local	Medium-term	Continuous	Reversible Short-term	High	Major	Not Significant	High	Intermediate
Groundwater Quantity Effects Assessment	Net decrease in aquifer storage surrounding the open pit.	Open Pit refilling	Closure Decommissioning	Beneficial	Major	Groundwater table returns back to near baseline after pumping stops. None required.	No		Medium	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Beneficial	Major	Groundwater table returns back to near baseline after pit dewatering pumping stops. Maintain pit lake level once pit refills.	Yes		Medium	Local	Medium-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
	Net increase in groundwater aquifer storage beneath and surrounding the TSF.	TSF seepage to groundwater	Operation	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Medium-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Closure Decommissioning	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Short-term	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
			Post-Closure	Neutral	Minor	Maintain water cover in TSF.	Yes	Groundwater table rises above baseline permanently.	Low	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	Intermediate
	Minor local changes in groundwater aquifer storage caused by surface water management (collection and diversion).	Diversion/collection ditches	Construction	Adverse	Minor	None required.	Yes		Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Operation	Adverse	Minor	None required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Closure Decommissioning	Adverse	Minor	Decommission collection / diversion ditches if no longer required	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Post-Closure	Neutral	Minor	Decommission collection/ diversion ditches if no longer required.	Yes	Localized minor groundwater table changes near surface water collection / diversion ditches.	Low	Local	Far Future	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
Quality Effects Assessment	Surface runoff and siltation contaminant loading.	Mine site	Construction and Operations	Adverse	Minor	Silt fences, best management practices; environmental monitoring; erosion management plan	Yes	Introduced materials/chemicals changing the substrate and resulting in degraded sediment quality	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Mine site	Closure and Post-Closure	Adverse	Negligible	Silt fences, best management practices; environmental monitoring; erosion management plan	Yes	~~Introduced materials/chemicals changing the substrate and resulting in degraded sediment quality.~~ Submersion of waste rock in the open pit.	~~Negligible~~ Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Silt fences, best management practices; environmental monitoring; erosion management plan	Yes	Introduced materials/chemicals changing the substrate and resulting in degraded sediment quality	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Metal leaching and Acid Rock Drainage (ML/ARD) contamination	Mine site	Construction, Operations, Closure and Post-Closure	Adverse	Low	~~ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.~~ Excavated materials to be placed back into open pit	Yes	~~ML/ARD resulting in degraded sediment quality.~~ Waste rock dump eliminated, placed back into open pit	~~Low~~ Negligible	Local	~~Medium-term~~ Short-term	Sporadic	Reversible Long-term	Neutral	~~Minor~~ Negligible	Not Significant	Low	~~Intermediate.~~ High
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.	Yes	ML/ARD resulting in degraded sediment quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Discharges and spills and associated water chemistry effects	Mine site	Construction, Operations, Closure and Post-Closure	Adverse	Moderate	Best management practices, environmental monitoring, spill contingency plan	Yes	Increase in nutrients and potential toxins resulting in degraded sediment quality	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Best management practices, environmental monitoring, spill contingency plan	Yes	Increase in nutrients and potential toxins resulting in degraded sediment quality	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
Aquatic Resources Effects Assessment	Surface runoff and siltation and contaminant loading.	Mine Site	Construction and Operations	Adverse	Moderate	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Low	High
		Mine Site	Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival. Waste rock dump eliminated, placed back into open pit.	~~Negligible~~ Low	Local	Short-term	Sporadic	Reversible Short-term	High	~~Minor~~ Negligible	Not Significant	Low	High
		Access Road	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Airborne contaminant loading from blasting rock crushing, incinerating garbage	Mine Site/Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Best management practices, dust suppression, environmental monitoring	Yes	Increase in suspended particles causing some mortality, sublethal effects through repiratory inhibition, reduced photosynthesis caused by shading/increased turbidity	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Leaching of nitrogen residues from blasting	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Minor	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) increasing algal production, community shift altering ecosystem structure and function	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) increasing algal production, community shift altering ecosystem structure and function	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Metal leaching and Acid Rock Drainage (ML/ARD) contamination	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Major	~~ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.~~ Excavated materials to be placed back into open pit	Yes	ML/ARD resulting in mortality and sublethal toxic effects to biota. Waste rock dump eliminated, placed back into open pit	Low	Local	Long-term	Sporadic	Reversible Long-term	Neutral	~~Minor~~ Negligible	Not Significant	~~Medium~~ Low	Low
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.	Yes	ML/ARD resulting in mortality and sublethal toxic effects to biota	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Discharges and spills and associated water chemistry effects	Mine Site	Construction, Operations	Adverse	Moderate	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential toxins resulting in mortality and sublethal toxic effects to biota	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	High	Low
	Discharges and spills and associated water chemistry effects	Mine Site	Closure and Post-closure	Adverse	Major	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential toxins resulting in mortality and sublethal toxic effects to biota	Medium	Local	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	High	Low
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential toxins resulting in mortality and sublethal toxic effects to biota	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Habitat loss as a result of draining or burial with tailings	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Major	None	Yes	Lake/pond in pit area will be drained and ponds/wetlands in the tailings facility footprint will be covered by tailings	High	Local	~~Far Future~~ Long-term	One Time	~~Irreversible~~ Reversible Long-term	Low	~~Major~~ Moderate	Not Significant	High	High
	Surface runoff and siltation and contaminant loading.	Mine Site	Construction and Operations	Adverse	Moderate	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Low	High
		Mine Site	Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival. Submersion of waste rock in the open pit	~~Negligible~~ Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Surface runoff and siltation and contaminant loading.	Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Silfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Airborne contaminant loading from blasting, rock crushing, incinerating garbage	Mine Site/Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Best management practices, environmental monitoring, spill contingency plan	Yes	Increase in suspended particles causing some mortality, sublethal effects through repiratory inhibition, reduced photosynthesis caused by shading/increased turbidity	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Leaching of nitrogen residues from blasting	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Minor	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) increasing algal production, community shift altering ecosystem structure and function	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen loadings (blasting residues) increasing algal production, community shift altering ecosystem structure and function	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Metal leaching and Acid Rock Drainage (ML/ARD) contamination	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Major	~~ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring~~. Excavated materials to be placed back into open pit	Yes	ML/ARD resulting in mortality and sublethal toxic effects to biota. Waste rock dump eliminated, placed back into open pit	Low	Local	Long-term	Sporadic	Reversible Long-term	Neutral	~~Minor~~ Negligible	Not Significant	~~Medium~~ Low	Low
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Negligible	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, avoiding acid-generating sources, environmental monitoring.	Yes	ML/ARD resulting in mortality and sublethal toxic effects to biota	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Discharges and spills and associated water chemistry effects	Mine Site	Construction, Operations	Adverse	Moderate	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential toxins resulting in mortality and sublethal toxic effects to biota	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	High	Low
		Mine Site	Closure and Post-Closure	Adverse	Major	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential toxins resulting in mortality and sublethal toxic effects to biota	Medium	Local	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	High	Low
		Access Road/Transmission Line	Construction, Operations, Closure and Post-Closure	Adverse	Major	Best management practices, environmental monitoring, spill contingency plan	Yes	Release of potential	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Habitat loss as a result of draining or burial with tailings	Mine Site	Construction, Operations, Closure and Post-Closure	Adverse	Major	~~None.~~ Reclamation of TSF and areas of the open pit	Yes	~~Lake/pond in pit area will be drained and ponds/wetlands in the tailings facility footprint will be covering by tailings.~~ Reclamation of 305 ha of habitat in the TSF, including approximately 1.7 km2 of ponded area, with 67.5 ha of wetland; and, 68 ha of wetland in the open pit	~~High~~ Medium	Local	~~Far Future~~ Medium Term	One Time	~~Irreversible~~ Reversible Long-term	Low	~~Major~~ Moderate	Not Significant	~~High~~ Low	High
	Surface runoff and siltation and contaminant loading.	Mine Site	Construction and Operations	Adverse	Moderate	Siltfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Low	High
		Mine Site	Closure and Post-closure	Adverse	Negligible	Siltfences; best management practices; environmental monitoring; erosion management plan	Yes	Pulses of total suspended solids causing some mrotality reduced growth through respiratory inhibition, reduced photosynthesis caused by shading/increased turbidity, reduced egg survival	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
Lake Trout Effects Assessment	Sedimentation from construction activities, blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Turbid water may flow into Morrison Lake: Minor sedimentation of shoreline spawning areas possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from resurfacing and road upgrades including new stream crossings and ditches causing lethal smothering or sublethal effects	Access Road/Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water may flow into Babine Lake: Minor sedimentation of shoreline spawning areas possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Noise from Blasting and construction activities causing mortality or behavioural changes	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters; Sediment and Erosion Control Plan	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters; Sediment and Erosion Control Plan	Yes	Elevated dust generation because mine site area and access road not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	ML/ARD from exposed rock causing sublethal behavioural effects	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Impremention of ML/ARD Predicting and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and physiological stress	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	ML/ARD from exposed rock causing sublethal behavioural effects	Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Impremention of ML/ARD Predicting and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and physiological stress	Negligible	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment causing mortality or sublethal effects	Transmission Line	Constructon	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Rupture of tailings dam or pipeline containing tailings, filter plant effluent, and sewage effluent causing lethal and sublethal effects	Mine Site	Operations, Closure and Decommissioning, Post-Closure	Adverse	Moderate	Dam and pipeline engineering, pressure sensors, implementation of Environmental Effects Monitoring Program	Yes	Increase in sediments and potential toxins leading to mortality, or physiological stress and stress and behavioural changes	Medium	Landscape / Watershed	Short-term	One Time	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas causing winter mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Lower water levels in Morrison Lake, Morrison Creek, and Tahlo Creek reducing fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
Dolly Varden Effects Assessment	Sedimentation from erosion of road resurfacing and upgrades including new stream crossings and ditches causing lethal smothering or sublethal effects	Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water will flow into streams and lakes with minor sedimentation possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from construction activities and erosion causing lethal smothering or sublethal effects	Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water will flow into streams and lakes with minor sedimentation possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Noise from blasting, construction activities, and tuck hauling causing mortality or behavioural changes	Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Noise from Blasting and construction activities causing mortality or behavioural changes	Transmission Line	Construction	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Access Road	Construction	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because access road not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Access Road	Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because access road not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	ML/ARD from exposed rock causing sublethal behavioural effects	Access Road	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and physiological stress	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	ML/ARD from exposed rock causing sublethal behaviouiral effects	Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and physiological stress	Negligible	Landscape / Watershed	Far Future	Sporadic	Reversible	High	Negligible	Not Significant	Medium	Low
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Construction, Operations	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment causing mortality or sublethal effects	Transmission Line	Construction	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Sedimentation from construction activities, blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Construction	Adverse	Moderate	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Turbid water may flow into streams and lakes with minor sedimentation possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
Rainbow Trout Effects Assessment	Sedimentation from blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Operations, Closure and Decommissioning	Adverse	Moderate	Sediment and Erosion Control Plan and site isolation, settlilng pond and diversion	Yes	Turbid water may flow into streams and lakes; Minor sedimentation of shoreline spawning areas possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from construction, erosion of road resurfacing, and upgrades including new stream crossings and ditches causing lethal smothering or sublethal effects	Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water may flow into streams and lakes with minor sedimentation possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Noise from Blasting and construction activities causing mortality or behavioural changes	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Noise from blasting, construction activities, and truck hauling causing mortality or behavioural changes	Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Noise from Blasting and construction activities causing mortality or behavioural changes	Transmission Line	Construction	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
		Access Road	Construction	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	High
		Access Road	Operations, Closure and Decommissioning	Adverse	Minor	Avoid blasting during spring Spawning, thermal atmospheric inversions, low cloud cover, or fog conditions; Blasting mats; Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	ML/ARD from exposed rock causing sublethal behavioural effects	Mine Site, Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and phsyiological stress	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Construction, Operations	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment causing mortality or sublethal effects	Transmission Line	Constructon	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Rupture of tailings dam or pipeline containing tailings, filter plant effluent, and sewage effluent causing lethal and sublethal effects	Mine Site	Operations, Closure and Decommissioning, Post-Closure	Adverse	Moderate	Dam and pipeline engineering, pressure sensors, implementation of Environmental Effects Monitoring Program	Yes	Increase in sediments and potential toxins leading to mortality, or physiological stress and stress and behavioural changes	Medium	Landscape / Watershed	Short-term	One Time	Reversible Short-term	High	Moderate	Not Significant	Low	High
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas causing winter mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Lower water levels in Morrison Lake, Morrison Creek, and Tahlo Creek reducing fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
	Water loss in Morrison Lake tributaries from loss of upper watersheds in tailings, waste rock, and open pit areas causing winter mortality, sublethal effects, and lost habitat	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Diversion channels to maintain some upper watershed flow	Yes	Lower water levels in streams 25500 and 44300, and altered flow in stream 53400 reducing total fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Far Future	Continuous	Irreversible	High	Moderate	Not Significant	High	High
Pacific Salmon Effects Assessment	Sedimentation from construction activities, blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Construction	Adverse	Moderate	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Turbid water may flow into streams and lakes; Minor sedimentation of shoreline spawning areas possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Sedimentation from blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Operations, Closure and Decommissioning	Adverse	Moderate	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Turbid water may flow into streams and lakes; Minor sedimentation of shoreline spawning areas possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from erosion of road resurfacing and upgrades including new stream crossings and ditches causing lethal smothering or sublethal effects	Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water may flow into steams and lakes; Minor sedimentation of shoreline spawning areas possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Noise from Blasting and construction activities causing mortality or behavioural changes	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Noise from blasting, construction activities, and truck hauling causing mortality or behavioural changes	Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Noise from Blasting and construction activities causing mortality or behavioural changes	Transmission Line	Construction	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	Low
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Access Road	Construction	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Particulates from trucks and equipment activity increasing TSS and causing sublethal effects	Access Road	Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low High	

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	ML/ARD from exposed rock causing sublethal behavioural effects	Mine Site, Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and phsyiological stress	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium Low	
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium High	
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Construction, Operations	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium High	
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Access Road	Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium High	
	Spills from equipment causing mortality or sublethal effects	Transmission Line	Contruction	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality, or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low High	
	Rupture of tailings dam or pipeline containing tailings, filter plant effluent, and sewage effluent causing lethal and sublethal effects	Mine Site	Operations, Closure and Decommissioning	Adverse	Moderate	Dam and pipeline engineering, pressure sensors, implementation of Environmental Effects Monitoring Program	Yes	Increase in sediments and potential toxins leading to mortality, or physiological stress and behavioural changes	Medium	Landscape / Watershed	Short-term	One Time	Reversible Short-term	High	Moderate	Not Significant	Low High	
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas causing winter mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Lower water levels in Morrison Lake, Morrison Creek, and Tahlo Creek reducing fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
	Water loss in Morrison Lake tributaries from loss of upper watersheds in tailings, waste rock, and open pit areas causing winter mortality, sublethal effects, and lost habitat	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Diversion channels to maintain some upper watershed flow	Yes	Lower water levels in streams 25500 and 44300, and altered flow in stream 53400 reducing total fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Far Future	Continuous	Irreversible	High	Moderate	Not Significant	High	High
Other Fish Species Effects Assessment	Sedimentation from construction activities, blasting, drainage ditches, and stream redirection causing lethal smothering or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Turbid water may flow into Morrison Lake; Minor sedimentation of streams and shoreline areas possible	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from construction, resurfacing, and road upgrades including new stream crossings and ditches causing lethal smothering or sublethal effects	Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Turbid water may flow into Babine Lake; Minor sedimentation of streams and shoreline areas possible	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Noise from Blasting and construction activities causing mortality or behavioural changes	Mine Site	Construction,	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters	Yes	Blunt tissue trauma causing mortality to all life stages, sublethal behavioural changes and physiological stress	High	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS and causing sublethal effects	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Elevated dust generation because mine site area not wetted during summer, Nitrogen residues from blasting	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	ML/ARD from exposed rock causing sublethal behavioural effects	Mine Site, Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Moderate	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	ML/ARD resulting in behavioural changes and phsyiological stress	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products causing mortality or sublethal effects	Transmission Line	Construction	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Increase in potential contaminants leading to mortality or physiological stress and behavioural changes	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Rupture of tailings dam or pipeline containing tailings, filter plant effluent, and sewage effluent causing lethal and sublethal effects	Mine Site	Operations, Closure and Decommissioning	Adverse	Moderate	Dam and pipeline engineering, pressure sensors, implementation of Environmental Effects Monitoring Program	Yes	Increase in sediments and potential toxins leading to mortality, or physiological stress and stress and behavioural changes	Medium	Landscape / Watershed	Short-term	One Time	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas causing winter mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Lower water levels in Morrison Lake, Morrison Creek, and Tahlo Creek reducing fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas causing winter mortality or sublethal effects	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Lower water levels in Morrison Lake, Morrison Creek, and Tahlo Creek reducing fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
Fish Habitat Effects Assessment	Direct habitat loss (water) of stream 53400 upper reach due to tailings storage facility and stream 29000 lower reach due to open pit, and partial water loss in streams 25500 and 44000.	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Fish Salvage prior to dewatering in streams 29000 and 53400. Potential rerouting of aversion channels to maintain some upper watershed flow (see Fish and Fish Habitat Compensation Plan for details).	Yes	Direct loss of fish-bearing habitat in stream 29000 and stream 53400	High	Landscape / Watershed	Far Future	One Time	Irreversible	Low	Moderate	Not Significant	High	High
	Direct habitat loss (food production) from loss of upper stream reaches due to tailings storage facility and waste rock dump	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Diversion channel will maintain nutrient and organic matter transport	Yes	Decreased primary and secondary production	Low	Landscape / Watershed	Far Future	One Time	Reversible Long-term	Low	Minor	Not Significant	High	High
	Sedimentation from construction activities, blasting, drainage ditches, and stream redirection causing increases in TSS reducing sunlight and affecting food resources or covering substrate and reducing habitat	Mine Site	Construction	Adverse	Moderate	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Habitat loss, increased TSS above background, and decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Sedimentation from construction activities, snow removal, blasting, drainage ditches, and stream redirection causing increases in TSS reducing sunlight and affecting food resources or covering substrate and reducing habitat	Mine Site	Operations, Closure and Decommissioning	Adverse	Moderate	Sediment and Erosion Control Plan, site isolation, settling pond and diversion	Yes	Habitat loss,increased TSS above background, and decreased primary and secondary production	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from truck hauling, construction activities, and blasting causing increases in TSS reducing sunlight and affecting food resources or covering substrate and reducing habitat	Access Road	Construction	Adverse	Minor	Sediment and Erosion Control Plan, site isolation	Yes	Habitat loss, increased TSS above background, and decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Sedimentation from truck hauling, snow removal, construction activities, and blasting causing increases in TSS reducing sunlight and affecting food resources or covering substrate and reducing habitat	Access Road	Operations, Closure, and Decommissioning	Adverse	Minor	Sediment and Erosion	Yes	Habitat loss, increased TSS above background, and decreased primary and secondary production	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Sedimentation from construction activities, blasting, snow removal, culvert removal and contouring causing increases in TSS reducing sunlight and affecting food resources or covering substrate and reducing habitat	Transmission Line	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Control Plan and site isolation	Yes	Habitat loss, increased TSS above background, and decreased primary and secondary production	Negligible	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High
	Particulates and residue from trucks, construction, equipment activity, and blasting increasing TSS reducing sunlight and affecting food resources	Mine Site, Access Road	Construction, Operations, Closure and Decommissioning	Adverse	Minor	Sediment and Erosion Control Plan and site isolation	Yes	Increased TSS above background and decreased primary and secondary production	Low	Local	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	High
	ML/ARD from exposed rock affecting fish food sources	Mine Site, Access Road, Transmission Line	Construction, Operations, Closure and Decommissioning, Post-Closure	Adverse	Minor	Follow DFO Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, Sediment and Erosion Control Plan	Yes	Decreased primary and secondary production	Low	Landscape / Watershed	Far Future	Sporadic	Reversible Long-term	High	Negligible	Not Significant	Medium	Low
	Spills from equipment, hauled fuels and cargos, and waste products and waste products affecting fish food resources	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Implementation of ML/ARD Prediction and Prevention Management Plan, and Environmental Effects Monitoring Program	Yes	Decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products affecting fish food resources	Access Road	Construction, Operations	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Minor	Not Significant	Medium	High
	Spills from equipment, hauled fuels and cargos, and waste products affecting fish food resources	Access Road	Closure and Decommissioning	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Medium	High
	Spills from equipment affecting fish food resources	Transmission Line	Construction	Adverse	Moderate	Spill kits, equipment maintenance, implementation of Spill contingency and Emergency Response Plan	Yes	Decreased primary and secondary production	Low	Local	Short-term	Sporadic	Reversible Short-term	High	Negligible	Not Significant	Low	High

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Rupture of tailings dam or pipeline containing tailings, filter plant effluent, and sewage effluent affecting fish habitat and food resources	Mine Site	Operations, Closure and Decommissioning, Post-Closure	Adverse	Moderate	Dam and pipeline engineering, pressure sensors, implementation of Environmental Effects Monitoring Program	Yes	Potential downstream habitat loss, increased TSS above background, and decreased primary and secondary production	Medium	Landscape / Watershed	Short-term	One Time	Reversible Short-term	High	Moderate	Not Significant	Low	High
	Water loss in Morrison Lake from seepage into open pit, water intake, and loss of upper watersheds in tailings and waste rock areas reducing fish habitat	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Sealing pitwall according to best management practices and not exceeding water withdrawal specifications	Yes	Habitat loss	Medium	Landscape / Watershed	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Low	Intermediate
	Water loss in Morrison Lake tributaries from loss of upper watersheds in tailings, waste rock, and open pit areas causing winter mortality, sublethal effects, and lost habitat	Mine Site	Construction, Operations, Closure and Decommissioning	Adverse	Moderate	Diversion channels to maintain some upper watershed flow	Yes	Lower water levels in streams 25500 and 44300, and altered flow in stream 53400 reducing total fish habitat and potentiating winter freezing	Medium	Landscape / Watershed	Far Future	Continuous	Irreversible	High	Moderate	Not Significant	High	High
Wetlands Effects Assessment	Loss of Wetland Extent and Function	Roads	Construction and Operation	Adverse	Negligible		No											
	Loss of Wetland Extent and Function	Roads	Closure, Decommissioning, and Post-Closure	Beneficial	Negligible	Monitor to identify if areas may be suitable for wetland development	Yes	Possibility for depressions created during operation to become wetland communities	Low	Local	Medium-term	One Time		Neutral	Minor	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Transmission Line	Construction and Operation	Adverse	Negligible	Avoid driving through or physically altering wetlands and monitor degraded areas to ensure no negative effect from Project on wetlands	Yes	Possible change of community structure to wetlands in degraded area.	Low	Local	Medium-term	One Time	Reversible Short-term	Neutral	Minor	Not Significant	Low	Intermediate
	Loss of Wetland Extent and Function	Transmission Line	Closure, Decommissioning, and Post-Closure	Neutral	Negligible	Monitor degraded areas to ensure no negative effect from Project on wetlands	No											
	Loss of Wetland Extent and Function	Tailings Storage Facility	Construction and Operation	Adverse	Major	Blue-listed Wb01 bog ecosystem will be lost but a larger area of Wm01 marshes and shallow open water wetlands can be created in the TSF post-closure	Yes	Loss of 26 .65 ha of blue-listed Wb01.	High	Landscape / Watershed	Far Future	One Time	Reversible Long-term	Low	Major	Not Significant	High	High
	Loss of Wetland Extent and Function	Tailings Storage Facility	Closure, Decommissioning, and Post-Closure	Adverse	Major	Construct littoral marsh wetland communities around perimeter of TSF ~~along the beaches of the TSF and shallow open water wetlands in the TSF where water is <2 m deep.~~	Yes	Loss of 26 .65 ha of blue-listed Wb01. ~~However, could be C~~ompensated with the creation of ~~39~~ 50 ha submergent ~~sedge~~-wetland and ~~100~~ 17.5 ha of ~~shallow-open water emergent~~-wetland in TSF	High	Landscape / Watershed	Far Future	One Time	Reversible Long-term	Low	~~Major~~-Moderate	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Waste Dumps	Construction and Operation	Adverse	Negligible		No											
	~~Loss of Wetland Extent and Function~~	~~Waste Dumps~~	~~Closure, Decommissioning, and Post-Closure~~	~~Adverse~~	~~Negligible~~		~~No~~											
	Loss of Wetland Extent and Function	Water Management	Construction and Operation	Adverse	Negligible		No											
	Loss of Wetland Extent and Function	Water Management	Closure, Decommissioning, and Post-Closure	Beneficial	Negligible	Monitor to identify if areas may be suitable for wetland development	Yes	Possibility for depressions created during operation to become wetland communities	Low	Local	Medium-term	One Time	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Materials Storage and Borrow Areas	Construction and Operation	Adverse	Negligible		No											
	Loss of Wetland Extent and Function	Materials Storage and Borrow Areas	Closure, Decommissioning, and Post-Closure	Adverse	Negligible		No											
	Loss of Wetland Extent and Function	Plant Site Area	Construction and Operation	Adverse	Negligible		No											
	Loss of Wetland Extent and Function	Plant Site Area	Closure, Decommissioning, and Post-Closure	Beneficial	Negligible	Monitor to identify if areas may be suitable for wetland development	Yes	Possibility for depressions created during operation to become wetland communities	Low	Local	Medium-term	One Time	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Pit Area	Construction and Operation	Adverse	Major	Include areas lost into compensation plan for TSF	Yes	Loss of 0.4 ha Ws01 swamp in pit	High	Local	Long-term	One Time	Irreversible	Neutral	Moderate	Not Significant	High	High
	Loss of Wetland Extent and Function	Pit Area	Closure, Decommissioning, and Post-Closure	Adverse	Major	~~Include areas lost into~~ Areas lost included in non fish-bearing loss in Fish Habitat Compensation Plan ~~for TSF~~	Yes	~~Upland beach areas in TSF could be planted with willow-swamp species to compensate for lost willow swamps in Pit Extent and TSF.~~ Loss of 0.4 ha Ws01 swamp in pit. Compensated with the creation of 68 ha of wetland habitat in open pit	Medium	Local	Long-term	One Time	~~Irreversible~~ Reversible Short Term	Neutral	~~Moderate~~ Minor	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Dams	Construction and Operation	Adverse	Negligible	Monitor degraded areas to ensure no negative effect from Project on wetlands	Yes	Degraded areas could become affected areas and should be monitored during construction and operations	Low	Local	Medium-term	Sporadic	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Dams	Closure, Decommissioning, and Post-Closure	Adverse	Negligible	Monitor to identify if areas may be suitable for wetland development	Yes	Degraded areas could become affected areas and should be monitored during construction and operations	Low	Local	Medium-term	Sporadic	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
Soils Effects Assessment	Pit	Alteration of landscape and loss of soils due to excavation	Construction; Operations	Adverse	Major	Salvage/stockpile soil and suitable overburden from footprint prior to are extraction	No											
	TSF	Burial, flooding, and partial excavation of soils	Construction; Operations	Adverse	Major	Salvage/stockpile soil from dam and infrastructure footprint (ditches, roads, collection ponds, pipelines), salvage as needed from remainder of TSF pond area, dust control program required;	No											
	Waste Rock Dump	Burial and partial excavation of soils	Construction; Operations	Adverse	Major	Salvage/stockpile soil from footprint prior to placement of rock waste (with 'progressive' reclamation during operations)	No											
	Low Grade Stockpile	Excavation, temporary burial, degradation (potential metal contamination) of soils	Operations	Adverse	Major	Salvage/stockpile soil in footprint prior to placement of low grade ore stockpile	No											
	Organic Bearing Material (Soil) & Overburden Stockpiles	Excavation under overburden pile, degradation (compaction) of soils	Construction; Operations	Adverse	Major	Salvage/stockpile soil from footprint (except soil pile), implement erosion control and weed control programs	No											
	Plant Site	Excavation (cuts/fills) of soils	Construction	Adverse	Major	Salvage/stockpile soil in footprint prior to disturbance	No											
	Borrow Areas Aggregate	Excavation and loss of surficial material (aggregate)	Construction; Operations	Adverse	Major	Salvage/stockpile soil in footprint prior to disturbance	No											
	Borrow Areas Till	Excavation and loss of surficial material (till) and soils	Construction; Operations	Adverse	Major	Salvage/stockpile soil in footprint prior to disturbance	No											
	TLROW - Access Roads: construction/maintenance	Site clearing: degradation (compaction, erosion, dust), access trail - degradation (soil scalping - minor cuts/fills, compaction) of soils	Construction; Operations	Adverse	Minor	Alternative selection of preferred mute alignment salvage/stockpile soil from footprint of new or widened access roads/ditches and borrow areas, implement erosion and weed control programs	No											
	Linear Facilities (diversion ditches, roads, pipelines, on-site TL)	Excavation (trenching; cuts/fills); degradation from clearing (compaction and soil scalping)	Construction; Operations: Closure/Decommissioning	Adverse	Major	Salvage/stockpile soil from footprint of new or widened access roads; implement erosion control and weed control programs	No											
	Mine Site, Access Road	Excavation (trenching, cuts/fills) degradation from clearing (compaction and soil scalping)	Construction; Operations	Adverse	Moderate	Salvage/stockpile soil from footprint of new or widened access roads; implement erosion control and weed control programs	Yes	~~Pit area will remain an open water/steep, unstable rock-land complex; 108 ha~~ Pit backfilled with waste rock and reclaimed with vegetation around perimter, and wetlands established within berm	High	Landscape	Far Future	Continuous	Irreversible	Low	Major	Not Significant	High	Intermediate
	Pit	Partial flooding	Closure/Decommissioning, Post-Closure	Adverse	~~Major~~ Minor	~~Revegetation of exposed overburden along pit edge~~ Backfilling pit with waste rock	Yes	Pit backfilled with waste rock and reclaimed with vegetation around perimter, and wetlands established within berm	Medium	Local	Medium Term	Continuous	Reversible Short-term	Low	~~Major~~ Minor	Not Significant	High	High

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	TSF	Flooding	Closure/Decommissioning, Post-Closure	Adverse	Major	Flooding TSF	Yes	~~Open water (~ 470 ha) on TSF surface; rock lined spillways and channels, loss of soil function including organic soil, until far future~~ Smaller ponded area, reclaimed areas along exposed beaches and on dams	~~High~~ Medium	~~Regional~~ Local	~~Far Future, Medium Term~~	Continuous	~~Irreversible~~ Reversible Short-term	Low	Minor	Not Significant	High	High
	TSF	Soil absent on dam slopes &crests	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Upland reclamation of the dam faces and crest	Yes	Higher% of drier, steeply sloping (33% gradient) land	Low	Landscape	Far Future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
	TSF	Soil absent on tailings beach	Closure/Decommissioning, Post-Closure	Neutral	Major	Assuming good water and sediment quality*, terrestrial reclamation of the lowland/wetland beaches; beach reclamation to include replacement of soil material over a variety of potential materials (coarse or coarse non-pyritic tailings, NAG rock and or glacial till)	Yes	Non-forested	Low	Landscape	Far Future	Continuous	Irreversible	Low	Minor	Not Significant	High	High
	Waste Rock Dump	Soils absent	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Reclaim; ~~reslope and apply capping material~~ and replace soil as surfaces become available	Yes	Higher% of drier, steeply sloping (40% gradient) land	Low	Regional	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	High
	Low Grade Ore Stockpile	Degradation (potential metal contamination) of soils	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Remove all potentially contaminated material, regrade, rip, replace soil capping and revegetate	No	No Residual Effect										
	Organic Bearing Material (Soil) & Overburden Stockpiles	Exposed soils	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Reslope (replace soil on remnant overburden or bare base area), rip where compacted, revegetate	No	No Residual Effect										
	Plant site (water management/ overburden, and exposed power facilities) bedrock	Soil absent, compact	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Remove any potentially contaminated material, regrade, rip, and replace soil capping and revegetate, except in 5 ha area of long-term use for water management and site power	Yes	Partial area to remain for long-term water management to far future	Low	Local	Far Future	Continuous	Reversible Long-term	High	Negligible	Not Significant	High	High
	Borrow Areas Aggregate	Exposed erodable surface	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Reclaim(recontoure and add soil material for revegetation)	Yes	Material consumed by project; landscape will remain a steep sided depression	Negligible	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	High	High
	Borrow Areas Till	Exposed erodable surface	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Reclaim(recontour and cover with soil material for revegetation)	Yes	Material consumed by project; portion of reclaimed landscape will remain steep sided (18 ha buried by TSF tailings)	Negligible	Local	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	Medium	High
	Linear Facilities (diversion ditches, roads, pipelines, on-site TL)	Potential disturbance associated with maintenance activities (compaction, vegetation loss)	Closure/Decommissioning, Post-Closure	Neutral	Moderate	Recontour, rip, replace soil material and revegetate, re-establish vegetation on areas disturbed for maintenance	Yes	Some to remain for long-term; maintenance through Post-Closure (long-term water manage ent potential for water management pipeline leaks)	Low	Local	Far Future	Continuous	Reversible Long-term	High				
	TLROW - Access Roads: construction/maintenance	Potential disturbance associated with maintenance activities (compaction, vegetation loss)	Closure/Decommissioning, Post-Closure	Neutral	Minor	Recontour, rip, replace soil material and revegetate, re-establish vegetation on areas disturbed for maintenance	Yes	Required for continued use at site (to support water management), may possibly be used by others, if not, areas are to be reclaimed, with stockpiled soil at closure	Low	Local	Far Future	Continuous	Reversible Long-term	High	Negligible	Not Significant	Medium	High
	Mine Site, Access Road	Potential disturbance associated with maintenance activities (compaction, vegetation loss)	Closure/Decommissioning, Post-Closure			Recontour, rip, replace soil material and revegetate, re-establish vegetation on areas disturbed for maintenance	Yes	Required for long-term site access	Low	Local	Far Future	Continuous	Reversible Long-term	High	Negligible	Not Significant	Medium	High
Terrain Effects Assessment	Soil slope failure due to road construction on gentle to moderate slope	Mine haul roads and access road	Construction, operation, and decommissioning	Adverse	Very Low to Low	Minimize excavation, control surface water, maintain culverts and ditches, deactivate at mine closure	No											
	Soil slope failure due to road construction on gentle to moderate slope	Permanent access roads	Post-closure	Adverse	Low	Maintain culverts and ditches	Yes	Road washout, saturation of road base	Low	Local	Long-term	Sporadic	Reversible Short-term	Neutral	Minor	Not Significant	Low	High
	Soil slope failure due to road construction on moderately steep to steep slope	Mine haul roads and access road	Construction, operation, and decommissioning	Adverse	Moderate	Design cut and fill slopes to maximize stability, control surface water, maintain culverts and ditches, deactivate at mine closure	No											
	Soil slope failure due to road construction on moderately steep to steep slope	Permanent access roads	Post-closure	Adverse	Moderate	Maintain culverts and ditches	Yes	Saturation of fill slopes and/or soil erosion leading to local landslide	Medium	Local	Long-term	Sporadic	Reversible Short-term	Low	Moderate	Not Significant	Medium	Low
	Soil slope failure due to logging on moderately steep to steep slope	Mine site and transmission line corridor	Construction, operation, and post-closure	Adverse	Moderate	Assess stability prior to logging, reclaim disturbed areas, monitor	No											
	Soil slope failure due to mine development stockpiles, borrow pits and dams)	Mine site (including waste rock dump, stockpiles, borrow pits and dams)	Construction and operation	Adverse	Low	Design fill slopes, monitor stability of major structures, construct and maintain diversion ditches	No											
	Soil slope failure due to mine development stockpiles, borrow pits and dams)	Mine site (including waste rock dump, stockpiles, borrow pits and dams)	Post-closure	Adverse	Moderate	Design fill slopes, monitor stability of major structures, re-establish original surface drainages or maintain diversion ditches	Yes	Surface erosion, internal piping or saturation of fill slopes leading to slope failure	Medium	Local	Long-term	Sporadic	Reversible Short-term	Low	Moderate	Not Significant	Low	High
	Rock slope failure due to surface disturbance	Mine site, transmission corridor	Construction, operation, and post-closure	Adverse	Very Low	Design excavations to maximize stability, construct surface water diversions	No											
	Rock slope failure due to mining	Open pit	Operation	Adverse	Low	Design pit wall, control surface water and groundwater, monitor stability	No											
	Rock slope failure due to mining	Open pit	Post-closure	Neutral	Moderate	~~Design final pit walls for long-term stability~~ Pit backfilled with wasterock	Yes	~~Weathering, and rock ravelling~~ Pit backfilled, reduce height of exposed walls	Low	Local	Far Future	Sporadic	Irreversible	Low	Minor	Not Significant	High	Low
	Creek bank failure due to Project construction	Mine site, transmission line corridor, and roads	Construction and operation	Adverse	Low	Avoid unstable creek banks, design creek crossings based on debris flow potential	No											
	Creek bank failure due to Project construction	Mine site, transmission line corridor, and roads	Post-closure	Adverse	Low	Remove road bridges and culverts	No											
Ecosystems and Vegetation Effects Assessment	**LOST-PERMANENT**																	
	1) Vegetation replaced by permanent Infrastructure																	
	VEC-Terrestrial Ecosystems (all types)	Mine facilities area (MFA; pit and tailings storage facility (TSF)) and transmission line (tower footprint)	Construction	Adverse	Major	Salvage and stockpile soil and suitable overburden wherever possible	Yes	Vegetation permanently replace by infrastructure	High	Local	Far future (>100 years)	One time	Irreversible	Low	Major	Not Significant	High	High
	2) **Clearing forests and replacing with shrubs in right-of-way (ROW)**																	
	VEC - Forested Ecosystems	Transmission line	Construction	Adverse	Major	Progressive reclamation; suitable top soil will be used at an adequate rooting depth; invasive plant management, dust control	Yes	Forested ecosystems lost and replaced with early seral stages to remain indefinitely	Moderate	Local	Far future (>100 years)	One time	Irreversible	Neutral	Moderate	Not Significant	High	High
	VEC - Ecosystems of Interest															Not Significant		
	3) Clearing non-forested vegetation (shrubs, meadows, etc.) in the ROW																	
	VEC - Non-forested ecosystems	Transmission Line	Construction	Adverse	Moderate	Progressive reclamation; suitable top soil will be used at an adequate rooting depth; invasive plant management, dust control	Yes	Ecosystems lost	Low	Local	Medium term (20-25 years)	One time	Reversible Short-term	High	Negligible	Not Significant	High	High
	VEC - Country food plants (most country food plants are shrubs)	Transmission Line	Operation	Beneficial	Minor	n/a	No											
	LOST-TEMPORARY																	
	1) Vegetation replaced by infrastructure but will be reclaimed either progressively or at closure																	
	VEC -Terrestrial ecosystems (undesignated) and country food plants	MFA	Construction	Adverse	Major	Soil salvage, progressive reclamation; suitable top soil will be used at an adequate rooting depth	Yes	Vegetation replaced by infrastructure; reclaimed vegetation may not re-establish to the same level as pre-operation	High	Local	Far future (>50 years)	One time	Reversible Long-term	Neutral	Moderate	Not Significant	High	High
	VEC- Ecosystems of interest	MFA	Construction	Adverse	Major	Soil salvage, progressive reclamation; suitable top soil will be used at an adequate rooting depth	Yes	Vegetation replaced by infrastructure; reclaimed vegetation may not re-establish to the same level as pre-operation	High	Local	Far future (>50 years)	One time	Reversible Long-term	Neutral	Moderate	Not Significant	High	High
	DEGRADATION																	
	1) **Introduction of invasive plants, dust deposition on plants, alteration of microclim ate, fragmentation**																	
	VEC-Terrestrial ecosystems, ecosystems of interest, country foods	MFA, Transmission Line, Roads	Construction, Operation	Adverse	Moderate	Invasive plant management, dust control, progressive reclamation	Yes	Vegetation may be degraded by edge effects	High	Local	Far future (>50 years)	One time	Reversible Long-term	Low	Major	Not Significant	High	High
	1.The definition of nature and extent varies for different topic areas. This is simply a description of the predicted nature and extent of the effect, prior to mitigation (more information on factors to include in the descriptor are in the methodology text).																	
	2. Assumes mitigation measures are effective as planned and implemented.																	

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	3. Assumes reclamation measures are effective as planned and implemented.																	
	4. Ecosystem s of interest would have a lower resilience.																	
Grizzly Bear Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This may allow for easier grizzly bear movement between the west and east sides of the Project area. Grizzly bears can thereby travel to new habitat if required (e.g., if sufficient habitat required to sustain them is no longer present for a season for the density of bears using it), or if they are displaced from the LSA.	Yes	The functional percentage of suitable grizzly bear habitat lost or heavily degraded from the LSA and RSA in each season is: spring: 9.2% (LSA), 1.7% (RSA); summer: 9.0% (LSA), 1.9% (RSA), fall: 9.4% (LSA), 1.7% (RSA)	Medium	Local	Long-term	Continuous	Reversible Long-term	Neutral	Negligible	Not Significant	Medium	High
						Reclaim disturbed habitat to reflect pre-disturbance values after mine closure												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Moderate	Conduct employee education programs for working around wildlife.	Yes	Mortality from the possibility of grizzly bear collisions with Project vehicles and from interactions with humans.	Medium	Regional	Medium-term	Sporadic	Reversible Long-term	Low	Minor	Not Significant	Medium	High
						Avoid trapping wildlife on the access road by managing bank height.		Increased human presence and activity resulting in unregulated bear hunting.										
						Minimize potential vehicle-related wildlife mortalities (speed limits and signage in areas of grizzly bear crosssing)												
						Document cases and locations where collisions between wildlife and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where wildlife are attracted to the haul road for foraging, travel, or crossing)												
						Minimize potential wildlife attraction to the road, thereby reducing the risk of conflicts between vehicles and wildlife.												
						Prohibit hunting in the Project area.												
						Limit public access to the Project area.												
						Avoid human activity near identified key wildlife habitats during sensitive wildlife periods (e.g., denning).												
						Prohibit littering in the Project area.												
						Prohibit feeding wildlife.												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit human activity in identified key wildlife habitats and movement corridors (particularly between Morrison and Babine lakes).	Yes	Decreased movement across the mine site and access road	Low	Landscape / Watershed	Medium-term	Regular	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
						Manage road-side vegetation re-growth to minimize attractiveness to grizzly bears.												
						Minimize potential vehicle-related wildlife mortalities (e.g., speed limits and signage in areas of grizzly bear crossing).												
						Decrease speed limits along the access road where it bisects the potential land corridor between Morrison and Dabine lakes.												
						Document cases and locations where collisions between wildlife and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where wildlife are attracted to the haul road for foraging, travel, or crossing).												
						Minimize potential wildlife attraction to the road (removing road carrion), thereby reducing the risk vehicle strikes.												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, invertebrate tissue and wetlands will be monitored and compared to the monitoring criteria. In the event that metals concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No												
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Moderate	Conduct an employee education program for working around wildlife.	Yes	Disturbance to behaviour and distribution of grizzly bears in the RSA as a result of combined anthropogenic disturbances (i.e., noise, visual and odour).	Low	Local	Medium-term	Regular	Reversible Long-term	Neutral	Minor	Not Significant	Low	Intermediate
						Limit public access to the Project area.												
						Prohibit domestic animals In the Project area.												
						Prohibit human activity in identified key wildlife habitats, near den sites, and movement corridors												
						Minimize fugitive dust and noise associated with haul truck traffic.												
						Use a precautionary approach and scan for bear dens before blasting/avalanche control.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse											Minor	Not Significant		
Moose Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse	Moderate	Prohibit mine-related human activity within a potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This may allow for easier movement between the west and east sides of the Project area.	Yes	Loss or alteration of suitable winter habitat in the LSA (32%) and RSA (5.8%)	Medium	Local	Long-term	Continuous	Reversible Long-term	Neutral	Moderate	Not Significant	Medium	Intermediate
						Reclaim disturbed habitat to reflect pre-disturbance values after mine closure.												

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse	Moderate	Conduct employee education programs for working and living around wildlife.	Yes	Mortality from the possibility of moose collissions with Project vehicles	Medium	Local	Medium-term	Sporadic	Reversible Long-term	Neutral	Minor	Not Significant	High	Intermediate
						Avoid trapping wildlife on the haul road by managing bank height or creating gaps in the banks (i.e., escape pathways).		Increased human presence and activity resulting in increased moose hunting.										
						Minimize potential vehicle-related wildlife mortalities (e.g., wildlife right-of-way, speed limits, and signage in areas of moose crossing).		Attraction to roads because of easier movement (or road salts if used), resulting in increased vehicle-related mortality.										
						Minimize potential wildlife attraction to the road (e.g., avoid road salts and manage roadside vegetation), thereby reducing the risk of vehicle strikes.											
						Limit public access to the mine area.												
						Prohibit hunting within the mine area.												
						Prohibit domestic animals in the mine area												
						Avoid human activity near identified key wildlife habitats during sensitive wildlife periods (e.g., calving).												
						Prohibit feeding wildlife in the Project area.												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit human activity in identified key moose habitats and movement corridors.	Yes	Land between the south end of Morison Lake and the north end of Babine Lake may act as an east-west travel corridor for moose. The combination of increased traffic through the potential movement corridor, and plowing the road during winter (creating snow banks), may alter moose crossing behaviour from baseline conditions.	Low	Landscape / Watershed	Medium-term	Regular	Reversible Long-term	Neutral	Negligible	Not Significant	Low	Intermediate
						Avoid trapping moose on the haul road by managing bank height and creating escape pathways (i. e., gaps) in snowbanks.												
						Minimize potential vehicle-related moose mortalities (e.g., vildlife right-of-way, speed limits and signage in areas of moose crossing)												
						Apply tighter speed limit restrictions along part of the access road that bisects potential movement corridor.												
						Document cases and locations where collisions between moose and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where moose are attracted to the haul mad for foraging, travel, or crossing).												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, invertebrate tissue and wetlands will be monitored and compared to the monitoring criteria. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No												
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct an employee education program for working around wildlife.	Yes	Individual moose will likely avoid the immediate Project area because of noise and human presence but continue to occupy the regional study area.	Low	Local	Medium-term	Regular	Reversible Long-term	Neutral	Minor	Not Significant	Low	Intermediate
						Limit public access to the Project area												
						Prohibit domestic animals In the Project area.												
						Prohibit human activity in identified key wildlife habitats and movement corridors												
						Minimize sources of noise through noise control measures												
						Minimize fugitive dust and noise associated with haul truck traffic.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure												Moderate	Not Significant	Medium	Intermediate
Mule Deer Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Maintain and prohibit mine- related human activity within a potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This may allow for easier movement of mule deer between the west and east sides of the Project area and minimize habitat fragmentation.	Yes	Potential loss of mule deer habitat.	Low	Local	Long-term	Continuous	Reversible Long-term	Neutral	Negligible	Not Significant	Low	Low
						Identify pockets of occupied winter habitat for mule deer in conjunction with moose monitoring aerial surveys (Section 14.9).												
						Limit disturbance, including noise and sensory, vdthin and nearby occupied writer range (if identified) that may degrade habitat value.												
						Reclaim disturbed habitat to reflect pre-disturbance values after mine closure.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct employee education programs for working and living around wildlife.												
						Avoid trapping wildlife on the haul road by managing bank height or creating gaps in the banks (i.e., escape pathways).												
						Minimize potential vehicle-related wildlife mortalities (eg wildlife right-of-way, speed limits, and signage in areas of mule deer crossing).	Yes	Mortality from the possibility of mule deer collisions with Project vehicles.	Medium	Landscape	Medium-term	Sporadic	Reversible Long-term	Neutral	Minor	Not Significant	Low	Intermediate
						Minimize potential wildlife attraction to the mad (eh., avoid road salts and manage roadside vegetation), thereby reducing the risk of vehicle strikes.		Increased human presence and activity resulting in increased illegal mule deer hunting										

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
						Limit public access to the mine area;		Attraction to roads because of easier movement (or road salts if used), resulting in increased vehicle-related mortality.										
						Prohibit hunting within the mine area,												
						Prohibit domestic animals in the mine area,.												
						Avoid human activity near identified key wildlife habitats during sensitive wildlife periods (e.g., calving),												
						Prohibit feeding wildlife in the Project area;												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within a potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This may allow for easier mule deer movement between the west and east sides of the Project area and minimize habitat fragmentation.	Yes	The predicted increase in vehicle traffic along the Project roads may at times deter mule deer from crossing, particularly in the presence of oncoming traffic.	Low	Landscape / Watershed	Long-term	Regular	Reversible Long-term	High	Negligible	Not Significant	Low	Intermediate
						Aid mule deer crossing the haul mad by managing bank height and creating escape pathways (i.e., gaps) in snowbanks and restrict vehicle speed limits.												
						Apply tighter speed limit restrictions along part of the access road that bisects potential movement corridor.												
						Document cases and locations of mule deer observations, potential risks of collisions, or possible movement areas (i.e., locations where mule deer are attracted to the haul road for foraging, travel, or crossing) have a higher likelihood of occurring.												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, invertebrate tissue and wetlands will be monitored and compared to the monitoring criteria. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No											
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, Operations, Decommissioning	Adverse	Minor	Limit public access to the mine area	Yes	Human activity and noise from traffic, mine site, and blasting events resulting in avoidance or elevated stress	Low	Local	Medium-term	Regular	Reversible Long-term	High	Negligible	Not Significant	Low	Intermediate
						Prohibit domestic animals in the mine area.												
						Avoid human activity and noise in identified pockets of suitable winter habitat for mule deer(assessed in conjunction with moose monitoring aerial surveys, Section 14.9).												
						Prohibit human activity in identified habitat corridor.												
						Minimize sources of noise through noise control measures.												
						Minimize fugitive dust and noise associated with haul truck traffic.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse											Negligible	Not Significant	Medium	Low
American Marten Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This will minimize potential disturbance to this area, as well as reduce possible vehicle strikes.	Yes	Suitable winter habitat lost or heavily degraded because of the Project Includes 10.6% of the LSA and 1.8% of the RSA.	Low	Local	Long-term	Continuous	Reversible Long-term	Neutral	Minor	Not Significant	Medium	Intermediate
						Reclaim disturbed habitat to reflect pre-disturbance values after mine closure												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible													
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This will minimize potential disturbance to this area, as well as reduce possible vehicle strikes	Yes	Development of mine roads, infrastructure, and the transmission line, along with increased traffic and human activity, may create a barrier to local marten movement.	Medium	Landscape	Medium-term	Regular	Reversible	Neutral	Minor	Not Significant	Medium	Intermediate
						Maintain existing road culverts to facilitate habitat connectivity for martens.	Watershed	Long-term										
						Document cases and locations where collisions between wildlife and vehicles have occurred or have a higher likelihood of occurring (i.e., locations vhere vildlife are attracted to the access road for foraging, travel, or crossing) and allowing for adaptive management where possible (providing additional road culverts in high incident areas).												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, invertebrate tissue and wetlandswil be monitored and compared to the monitoring criteria. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No											
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Limit public a ccess to the Project area.	Yes	Areas with a high degree of Project-related noise will likely be avoided	Low	Local	Medium-term	Regular	Reversible Long-term	High	Negligible	Not Significant	Low	Intermediate

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						Prohibit human activity in identified key wildlife habitats, breeding sites, and movement corridors;												
						Minimize sources of noise through noise control measures;												
						Minimize noise associated with haul truck traffic.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse											Negligible	Not Significant	Low	Intermediate
Fisher Effects Assessmen	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within identified high quality areas outside of the Project footprint, particularly within riparian areas with old stands of cottonwoods.	Yes	The amount of suitable fisher habitat that will be temporarily or permanently lost or degraded as a result of Project development represents 1.8% (classified as lost or heavily degraded) of the total amount of suitable habitat available in the RSA.	Low	Local	Long-term	Continuous	Reversible Long-term	Low	Minor	Not Significant	High	Intermediate
						Reclaim disturbed habitat to reflect pre-disturbance values after mine closure.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct employee education programs for working and living around wildlife.	Yes	Clearing trees could cause some incidental mortality of females or offspring.	Low	Local	Long-term	Sporadic	Reversible Short-term	Low	Negligible	Not Significant	Low	Intermediate
						Minimize potential wildlife attraction to the road (e.g., remove road carrion and manage roadside vegetation), thereby reducing the risk of vehicle strikes.		Mortality from vehicle strikes										
						Limit public access to the mine area.												
						Prohibit hunting and trapping within the mine area.												
						Prohibit domestic animals in the mine area.												
						Avoid human activity near identfied key wildlife habitats outside of the Pmjectfootpnnt during sensitive wildlife periods (e.g., old cottonwood stands in riparian areas).												
						Prohibit feeding wildlife in the Project area.												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Prohibit mine-related human activity within potential habitat corridor between Morrison and Babine lakes and reduce the speed of vehicles travelling across this area. This will minimize potential disturbance to this area, as well as reduce possible vehicle strikes.	Yes	Fisher may be reluctant to cross gaps/fragments in forest cover (mine site, transmission line corridor, and/or roads), limiting east-west movement	Medium	Landscape / Watershed	Medium-term	Regular	Reversible Long-term	Low	Minor	Not Significant	Medium	Intermediate
						Document cases and locations where collisions between wildlife and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where wildlife are attracted to the access road for foraging, travel, or crossing) and allowing for adaptive management where possible (providing additional road culverts in high incident areas).												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife are found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, wetlands and invertebrate tissue will be monitored and compared to the monitoring criteria. In the event that metals concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife												
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Limit public access to the Project area.	Yes	Elevated stress levels and/or habitat avoidance in areas of high noise and human disturbance.	Low	Local	Medium-term	Regular	Reversible Long-term	Low	Negligible	Not Significant	Medium	Intermediate
						Prohibit human activity in identified key wildlife habitats, breeding sites, and movement corridors outside of the Project footprint.												
						Minimize sources of noise through noise control measures.												
						Minimize noise associated with haul truck traffic.												
	Combined Effects of the Project (Population Level Impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure															
Western Toad Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Moderate	Avoid human activity in identified key wildlife habitats during sensitive periods, such as toad breeding sites and migration areas, outside of the Project footprint. Buffer zones around wetlands and riparian areas recommended by the BC Ministry of Environment should also be designated and avoided.	Yes	Loss of identified breeding pond		Local	Long-term	Regular	Irreversible	Neutral	Minor	Not Significant	Medium	Low
						Roadside ditches in the mine site should be constructed and maintained to minimize standing water to prevent toad breeding.												
						Road dust production will be minimized through road watering (generally only in the summer months), regular road surface mainteriance, and speed limits.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Minimize potential vehicle-related wildlife mortalities (e.g. speed limits, adaptive management).	Yes	Potential toad mortality associated with incidental traffic interactions.	Low	Local	Medium-term	Regular	Reversible Long-term	Low	Negligible	Not Significant	Medium	Low
						Document cases and locations where collisions between western toad and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where western toad migrate across the road).												
						Avoid human activity near identified breeding and migration corridors outside of the Protect footprint, particularly during sensitive periods.												

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
						Prohibit littering in the Project area.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Minimize potential vehicle-related wildlife mortalities (e.g. speed limits, adaptive management).	Yes	Roads and infrastructure may limit toad movement between terrestrial and wetland habitats	Low	Local	Medium-	Regular	Reversible	Neutral	Negligible	Not Significant	Low	Low
						Document cases and locations where collisions between western toad and vehicles have occurred or have a higher likelihood of occurring (i.e., locations where western toad migrations cross the road).												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Minimize attractiveness of poor quality water sources by removing standing water or vegetation.	Yes	Potential breeding or use of low water quality habitats in the local area.	Negligible	Local	Medium-term	Regular	Reversible Long-term	Low	Negligible	Not Significant	Medium	Low
						Record incidental sightings of the presence of western toads and breeding activity in proximity to the TSF.												
						Monitor unanticipated attractants associated with the TSF and area to implement adaptive management (e.g. formation of small ponds near the TSF requiring diversion)												
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible		No											
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure												Minor	Not Significant	Medium	Low
Waterfowl Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Avoid open water areas and breeding sites during the waterfowl breeding season (April 1 to July 31).	Yes	Loss or alteration of waterfowl habitat within the local and regional study areas.	Low	Local	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	High
						Design reclamation during mine closure to restore affected waterbodies or riparian habitat lost during mine development and operation, where possible. Where water quality or chemical uptake by aquatic vegetation alongside polluted water is an issue, the attractiveness of poor water quality sites will be minimized.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible		No											
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible		No											
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation with the RSF during the closure or post-closure phses, invertebrate tissue and wetlands will be monitored and compared to the monitoring criteria. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife	No											
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Limit public access to the Project area.	Yes	Noise associated with the mine (machinery, infastructure, traffic, blasting) may disturb waterfowl, potentially causing habitat avoidance, increased stress during breeding periods possibly decreasing reproductive success. However, some acclimation to noise anticipated.	Low	Local	Short-term	Regular	Reversible Short-term	Neutral	Minor	Not Significant	High	Intermediate
						Prohibit human activity along lake and wetland shorelines outside of the Project footprint during the bird breeding season (April 1 to July 31).												
						Minimize sources of noise through noise control measures.												
						Minimize noise associated with haul truck traffic.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure	Adverse											Minor	Not Significant		
Forest Birds Effects Assessment	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Avoid construction during breeding season (April 1 to July 31). Otherwise pre-construction bird surveys will be conducted to identify and avoid nesting sites.	Yes	Some loss of the nesting territories and habitat of individual birds will occur, but the habitat loss is not expected to affect the population-level carrying capacity of the landscape.	Low	Local	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Intermediate
						Retain snags, downed logs, stumps and other forest features along the transmission line right-of-way to enhance wildlife habitat. Top hazardous trees within or along the transmission line right-of-way or other sites to provide"wildlife trees" for birds.												
						Where possible, design reclamation during mine closure to restore habitat of comparable value to that lost during mine development and operation.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Moderate	Avoid construction during breeding season (April 1 to July 31). Otherwise pre-construction bird surveys will be conducted to identify and avoid nesting sites.	Yes	Mitigation greatly reduces the risk of however, mortality still may occur from vehicle strikes and construction clearing.	Low	Local	Short-term	Sporadic	Reversible Long-term	Neutral	Negligible	Not Significant	Low	Intermediate
						Minimize potential vehicle-related wildlife mortalities (e.g., speed limits).												
						Limit public access to the mine area.												
						Prohibit grouse hunting within the mine area.												
						Prohibit domestic animals in the mine area.												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Limit human activity to Project footprint area.	Yes	Reluctance for understorey birds to cross paths in forest cover (transmission line corridor, mine roads).	Negligible	Local	Long-term	Sporadic	Reversible Long-term	Neutral	Negligible	Not Significant	Low	Intermediate

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
						Retain snags, downed logs, stumps, and other forest features along the transmission line right-of-way to enhance wildlife habitat. Top hazardous trees within or along the transmission line right-of-way or other sites to provide "wildlife trees" for birds.												
						Where possible, design reclamation during mine closure to restore habitat of comparable value to that lost dunng mine development and operation.												
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post closure phases, invertebrate tissue and wetlands will be monitored and compared to the monitoring cntena. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No											
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Avoid construction during breeding season (April 1 to July 31). Otherwise pre-construction bird surveys will be conducted to identify and avoid nesting sites.	Yes	Some habitat avoidance surrounding areas of high noise/human use.	Negligible	Local	Short-term	Sporadic	Reversible Short-term	Neutral	Negligible	Not Significant	Low	High
						Set buffer distance around identified nest sites to minimize construction or mine activity disturbance.												
						Limit public access to the Project area.												
						Prohibit unnecessary human activity outside of the Project footprint, particularly during the bind breeding season (April 1 to July 31).												
						Minimize sources of noise through noise control measures.												
						Minimize noise associated vwth haul truck traffic.												
						Direct lighting to minimize potential attractiveness to birds to reduce bird strikes against lit infrastructure.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning												Negligible	Not Significant		
	Habitat Loss or Alteration	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct a survey for raptors nests before construction and site clearing of the mine area and new roads to identify and avoid raptor nests, and avoid contravening the BC *Wildlife Act* Section 34(1b).	Yes	Loss or alteration of habitat	Low	Local	Long-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Intermediate
						Retain snags, downed logs, stumps, and other forest features along the transmission line right-of-way to enhance wildlife habitat. Top hazardous trees within or along the transmission line right-of--way or other sites to provide "wildlife trees" for birds.												
						Where possible, design reclamation during mine closure to restore habitat of comparable value to that lost during mine development and operation.												
	Physical Hazards - Mortality (Direct and Indirect)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct a survey for raptor nests before construction and site clearing of the mine area and new roads to identify and avoid clearing a tree containing a raptor nest, and avoid contravening the BC Wildlife Act, Section 34(1b)	Yes	Electrocutions with transmission line expected at low levels post mitigation; possible vehicle strikes with mitigation.	Negligible	Local	Long-term	Sporadic	Reversible Long-term	Low	Negligible	Not Significant	Low	Intermediate
						Minimize potential vehicle-related raptor mortalities through speed limits, no littering policy, and road carrion removal.												
						Minimize bird electrocutions by deterring nest building or perching on power poles through design considerations.												
						Limit public access to the mine area.												
						Prohibit domestic animals in the mine area.												
						Store and remove all waste and wildlife attractants.												
	Physical Hazards - Disruption of Movement	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible		No											
	Chemical Hazards and Attractants	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Negligible	If wildlife is found to be drinking, eating, or using water or vegetation within the TSF during the closure or post-closure phases, invertebrate Issue and wetlands will be monitored and compared to the monitoring criteria. In the event that metal concentrations are observed to approach the monitoring criteria, adaptive management would then be initiated to minimize the risk of metal uptake to wildlife.	No											
	Sensory Disturbance	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning	Adverse	Minor	Conduct breeding bird pre-construction surveys to identify and avoid raptor nesting sites. Set BC Ministry of Environment recommended buffer zones around identified nest sites to minimize construction or mine activity disturbance.	Yes	Intermittent and loud noise may cause raptors to flush from nest	Low	Local	Short-term	Regular	Reversible Short-term	Neutral	Negligible	Not Significant	Low	Intermediate
						Limit public access to the Project area.												
						Prohibit human activity along lake and wetland shorelines outside of the Project footprint during the raptor breeding season (May to August).												
						Minimize sources of noise through noise control measures.												
						Minimize noise associated with haul truck traffic.												

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
						Monitor open it walls during operations to detect and deter potential raptor nesting or nesting activity. If a nest is established along it walls, mining activity (especially blasting) may need to be halted to ensure compliance with the BC Wildlife Act and minimize disturbance to nestng raptors.												
	Combined Effects of the Project (Population level impacts)	Mine Site, Access Road, Transmission Line	Construction, operations, decommissioning, post-closure															
Archaeology Effects Assessment	Potential effects to archaeological site GhSn-3	Mine site	Construction / operations	Neutral	Negligible	This site has been heavily affected by past logging activities, is in poor condition, and is not protected by the. HCA. No further work required.	No											
	Potential effects to archaeological site GhSn-4	Mine site	Construction / operations	Neutral	Negligible		No											
	Potential effects to archaeological site GhSn-5	Transmission Line	Construction / operations	Neutral	Negligible	This site has been heavily affected by past logging activities, is in poor condition, and is not protected by the. HCA. No further work required.	No											
	Potential effects to archaeological site GhSn-7	Mine site	Construction / operations	Adverse	Major	Systematic data recovery will be required at this site prior to construction activities in the TSF.	No											
	Potential effects to as-yet unrecorded archaeological/heritage resources	Mine Site, Access Road, Transmission Line	Construction, operations, closure, post-closure	Adverse	Negligible	Archaeological Chance Find Procedure and Heritage Awareness Training	Yes	Increased human presence near archaeological and heritage sites, both recorded and as yet unrecorded, which could result in adverse effects to the integrity of those sites	Negligible	Local	Long-term	Sporadic	Irreversible	Low	Negligible	Not Significant	Low	High
Land Use Access Effects Assessment	**Lake Babine Nation**																	
	Improved access to part of traditional territory (including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Minor	None	Yes	Improved access to part of Lake Babine Nation traditional territory during operations and post-closure.	Low	Landscape	Longterm	Continuous	Irreversible	High	Minor	Not Significant	Medium	Intermediate
	Limitations to access part of traditional territory	Access road	Construction, Closure	Adverse	Minor	None	Yes	Use of the access road may be delayed or temporarily closed during road upgrading, and construction/closure at the mine site.	Low	Landscape	Short-term	Sporadic	Reversible short-term	High	Minor	Not Significant	High	High
	Prohibited access to part of traditional territory	Mine site	All phases	Adverse	Minor	None	Yes	Access to the Lake Babine Nation traditional territory that overlaps with the mine lease will be restricted for the life of the Project.	Medium	Local	Long-term	Continuous	Irreversible	High	Moderate	Not Significant	High	High
	Increased road hazards when using access road	Access road	Construction, Operations, Closure	Adverse	Minor	None	Yes	Road upgrading and mine site construction/closure may increase road hazards for Lake Babine Nation road users.	Low	Landscape	Short-term	Continuous	Reversible short-term	High	Minor	Not Significant	Medium	Intermediate
			Post-closure	Adverse	Negligible	None	No	Project-related traffic and road hazards will be minimal during post-closure										
	Canfor																	
	Improved access to forest tenure areas (including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Moderate	None	Yes	Improved road conditions when accessing tenure areas during operations and post-closure.	Low	Landscape	Long-term	Continuous	Irreversible	High	Minor	Not Significant	High	High
	Limitations to access forest tenure areas	Access road	Construction, Closure	Adverse	Major	None	Yes	Use of the access road may be delayed or temporarily closed during road upgrading, and construction/closure at the mine site.	Low	Landscape	Short-term	Sporadic	Reversible short-term	High	Minor	Not Significant	High	High
	Prohibited access to part of forest tenure (278 ha of strategic blocks)	Mine site	All phases	Adverse	Major		Yes	Inability to access the part of Canfor's tenure overlapping with the mine site due to security and safety.	High	Local	Longterm	Continuous	Irreversible	Low	Major	Not Significant	High	High
	Increased road hazards when using access road	Access road	Construction, Operations, Closure	Adverse	Minor	None	Yes	Road upgrading and mine site construction/closure may increase road hazards for other forestry companies.	Low	Landscape	Short-term	Continuous	Reversible short-term	High	Minor	Not Significant	High	High
			Post-closure		Negligible	None	No	Project-related traffic and road hazards will be minimal during monitoring.										
	Tukii Lodge Hunting Camp																	
	Improved access to Tukii Hunting Camp and tenured outfitting area (including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Minor	None	Yes	Improved road conditions and consistent year-round access to tenured outfitting area	Low	Landscape	Long-term	Continuous	Irreversible	High	Minor	Not Significant	Medium	Intermediate
	Limitations to access to Tukii Hurling Camp and tenured oufftifing areas	Access road	Construction, Closure	Adverse	Negligible	None	No	Guide outfitters do not currently use the road for access to the area.								Not Significant		
	Prohibited access to Tukii Hunting Camp and tenured outfitting area overlapping with the mine site	Mine site	All phases	Adverse	Moderate	Reach mutually agreeable terms of accommodation	Yes	Guide outfitter currently uses the area in and around the mine site to hunt moose and black bear.	Medium	Landscape	Long-term	Continuous	Reversible	Low	Moderate	Not Significant	High	High
	Increased road hazards when using access road	Access road	All phases	Adverse	Negligible	None.	No	Guide outfitters do not currently use the road for area access										
	Ookpik Lodge																	
	Improved access to lodge (including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Minor	None.	Yes	Improved road conditions and consistent year-round access to lodge.	Low	Local	Long-term	Continuous	Irreversible	High	Minor	Not Significant	High	High
	Limitations to accessing the lodge	Access road	Construction, Closure	Adverse	Negligible	None.	No	Owners do not currently use the road for access to their lodge										
	Increased road hazards when using access road	Access road	All phases	Adverse	Negligible	None.	No	Owners do not currently use the road for access to their lodge										
	Mineral Developers																	
	Improved access to mineral development sites/activities (including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Minor	None.	Yes	Improved road conditions when accessing claims during operations and post closure.	Low	Local	Longterm	Continuous	Irreversible	High	Minor	Not Significant	High	High
	Limitations to access to mineral development sites/activities	Access road	Construction, Closure	Adverse	Minor	None.	Yes	Use of the access road may be delayed or temporarily closed during road upgrading, and construction/closure at the mine site.	Low	Local	Short-term	Sporadic	Reversible short-term	High	Minor	Not Significant	High	High
	Prohibited access to mineral claim overlapping with the waste management facility	Mine site	All phases	Adverse	Major	In cooperation with BC MEMPR's claim resolution process, PBM to obtain rights tone mineral claim tenure area currently held by Mr. Keith Morris.	No	Ownership of mineral claim directly overlapping with the waste management facilitywill be transferred to PBM.										
	Increased road hazards when using access road	Access road	Construction, Operation, Closure	Adverse	Minor	None.	Yes	Road upgrading and mine site construction/closure may increase road hazards for other mineral developers.	Low	Landscape	Short-term	Sporadic	Reversible short-term	Medium	Minor	Not Significant	High	High
	Increased road hazards when using access road closure	Access road	Construction, Operation, Closure	Adverse	Minor	None	Yes	Road upgrading and mine site construction/closure may increase road hazards for other mineral developers	Low	Landscape	Short-term	Sporadic	Reversible	Medium	Minor	Not Significant	High	High
			Post-closure		Negligible	None	No	Project-related traffic and road hazards will be minimal during post-closure										
	Trapline Tenure Holders																	
	Improved access to trapline (Including consistent year-round accessibility)	Access road	Operations, Post-closure	Beneficial	Negligible	None	No	Trappers do not currently use the mine site area, which has been in use for decades										
	Limitations to access to trapline	Access road	Construction, Closure	Adverse	Negligible	None	No	Trappers do not currently use the mine site area, not in use for decades										
	Prohibited access to the area of the trapline tenure that overlaps with the mine site	Mine site	All phases	Adverse	Negligible	None	No	Trappers do not currently use the mine site area, which has been in use for decades										
	Increased road hazards when using access road	Access road	All phases	Adverse	Negligible	None	No	Trappers do not currently use the mine site area, not in use for decades										

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Resident Hunters																	
	Improved access to hunting areas, especially mouth of Morrison Creek (including consistent year-round accessibility)	Access road, transmission line	Operations, Post-closure	Beneficial	Minor	None	Yes	Improved road conditions when accessing hunting areas	Low	Landscape	Long-term	Continuous	Irreversible	High	Minor	Not Significant	Medium	High
	Limitations to access hunting areas, especially the mouth of Morrison Creek	Access road, transmission line	Construction, Closure	Adverse	Minor	None.	Yes	Use of the access road may be delayed or temporarily closed during road upgrading, and construction/closure at the mine site.	Low	Landscape	Short-term	Sporadic	Reversible short-term	High	Minor	Not Significant	High	High
	Limitations to access hunting areas, especially the mouth of Morrison Creek	Access road, transmission line	Construction, Closure	Adverse	Minor	None	Yes	Use of the access road may be delayed or temporarily closed during road upgrading, and construction/closure at the mine site.	Low	Landscape	Short-term	Sporadic	Reversible short-term	High	Minor	Not Significant	High	High
	Increased road hazards when using access mad	Access road	Construction, Operations, Closure	Adverse	Minor	None.	Yes	Road upgrading and mine site construction/closure may increase road hazards for resident hunters.	Low	Landscape	Short-term	Sporadic	Reversible short-term	Medium	Minor	Not Significant	High	High
			Post-closure		Negligible	None.	No	Project-related traffic and road hazards will be minimal during monitoring.										
	Ministry of Environment - Conservation Office (re: regulating poachers)																	
	Improved access for poachers to wildlife-abundant areas (including consistent year-round accessibility)	Access road, transmission line	Operations, Post-closure	Adverse	Minor	None	Yes	Improved road conditions and year-round accessibility may increase the number of poaching incidents in the primary study area	Low	Landscape	Long-term	Continuous	Reversible short-term	Medium	Moderate	Not Significant	Medium	Intermediate
	Limitations to access for poachers to wildlife-abundant areas	Access road, transmission line	Construction, Closure	Beneficial	Minor	None	No											
Quality of Experience Effects Assessment	**Lake Babine Nation**																	
	Increased noise levels from mine-related activities and haul truck traffic affect quality of experience	Mine site, Access road (within 1.5 km)	Construction, Operations, Closure	Adverse	Minor	None	Yes	The aesthetic quality of land long-term use activities may be diminished by noise associated with the mine during construction and operations	Medium	Landscape	Long-term	Sporadic	Reversible	Neutral	Moderate	Not Significant	High	Intermediate
	Increased presence of dust and other air pollutants diminishes aesthetic quality of experience	All components	Construction, Operations, Closure	Adverse	Minor	None	Yes	The aesthetic quality of land use activities may be diminished by the resulting dust associated with the access road during construction and operations	Low	Landscape	Long-term	Continuous	Reversible Long-term	Neutral	Minor	Not Significant	High	Intermediate
	Diminished drinking water quality	Mine site	All phases	Adverse	Minor	None	Yes	Increased cosmetic and long-tens aesthetic effects of the drinking water	Low	Local	Long-term	Continuous	Reversible	High	Minor	Not Significant	Low	Low
	Diminished visual quality	Mine Site	Construction, Operations, Closure	Adverse	Minor	None	Yes	The quality of land use activities may be diminished by visual obstructions and disruptions from mine infrastructre and activities.	Medium	Local	Long-term	Continuous	Irreversible	Neutral	Moderate	Not Significant	Medium	High
	Diminished visual quality	Transmission line	Construction, Operations, Closure	Adverse	Negligible	None	No											
	Increased third-party presence	All components	All phases	Adverse	Minor	None	Yes	Increased interest in the long-term Project area due to increased accessibility by new land users	Low	Landscape	Long-term	Seasonal	Reversible	Low	Minor	Not Significant	Medium	Intermediate
	Decreased noise levels related to an absence of mine-related activities allows resumption of quality of land use experience	Mine site, Access road (within 1.5 km)	Post-closure	Beneficial	Negligible	None	No											
	Decreased presence of dust and other air pollutants enhance aesthetic quality of experience	All components	Post-closure	Beneficial	Negligible	None	No											
	Improved visual quality	Mine Site	Post-closure	Beneficial	Minor	None	Yes	The quality of land use activities may improve based on a cessation of industrial activities and decommissioning of infrastructure. However, tailings facility and the open pit will remain.	Medium	Local	Long-term	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
	Improved visual quality	Transmission Line	Post-closure	Beneficial	Negligible	None	No											
	Tukii Lodge Hunting Camp																	
	Increased noise levels from mine-related activities affects quality of experience	Mine site (within 15 km)	Construction, Operations, Closure	Adverse	Major	None	Yes	The aesthetic quality of land use activities may be diminished by noise associated with the mine during construction and operations	High	Local	Long-term	Continuous	Reversible long-term	Low	Moderate	Not Significant	High	High
	Increased noise levels from haul truck traffic affects quality of experience	Access road (within 15 km)	Construction, Operations, Closure	Adverse	Negligible	None	No											
	Increased presence of dust and other air pollutants diminishes aesthetic quality of experience	Mine Site	Construction, Operations	Adverse Minor		None	Yes	The aesthetic quality of land use activities may be diminished by the resulting dust associated with the access road during construction and operations	High	Local	Long-term	Continuous	Reversible long-term	Low	Major	Not Significant	High	High
	Increased presence of dust and other air pollutants diminishes aesthetic quality of experience	Access road, transmission line	Construction, Operations	Adverse	Negligible	None	No											
	Diminished drinking water quality	Mine Site	All phases	Adverse	Major	Reach mutually agreeable terms of accommodation	Yes	Increased cosmetic and aesthetic effects of the drinking water	High	Local	Long-term	Continuous	Irreversible	Low	Major	Not Significant	Medium	Intermediate
	Diminished visual quality	Mine Site	Construction, Operations	Adverse	Moderate	None	Yes	The quality of land use activities may be diminished by visual obstructions and disruptions from mine infrastructre and activities.	Low	Local	Long-term	Continuous	Reversible long-term	Low	Moderate	Not Significant	High	High
	Diminished visual quality	Transmission line	Construction, Operations	Adverse	Negligible	None	No											
	Increased third party presence (e.g., boaters and new land users)	All components	All phases	Adverse	Moderate	None	Yes	Increased interest in the project area due to increased accessibility by new land users	Low	Landscape	Long-term	Continuous	Reversible long-term	Low	Moderate	Not Significant	Medium	Intermediate
	Decreased noise levels related to an absence of mine-related activities allows resumption of quality of land use experience	Mine site, Access road (within 1.5 km)	Post-closure	Beneficial	Negligible	None	No											
	Decreased presence of dust and other air pollutants enhance aesthetic quality of experience	Mine Site	Post-closure	Beneficial	Negligible	None	No											
	Decreased presence of dust and other air pollutants enhance aesthetic quality of experience	Access road, transmission line	Post-closure	Beneficial	Negligible	None	No											
	Improved visual quality	Mine Site	Closure, Post-closure	Beneficial	Negligible	None	No											
	Improved visual quality	Transmission Line	Closure, Post-closure	Beneficial	Negligible	None	No											
	Ookpik Lodge																	
	Increased noise levels from mine-related activities affects quality of experience	Mine site (within 1.5 km)	Construction, Operations, Closure	Adverse	Negligible	None	No											
	Increased noise levels from haul truck traffic affects quality of experience	Access road (within 1.5 km)	Construction, Operations, Closure	Adverse	Minor	None	No											
	Decreased noise levels related to an absence of mine-related activities allows resumption of quality of land use experience	Access road (within 1.5 km)	Post-closure	Beneficial	Negligible		No											
	Increased presence of dust and other air pollutants diminishes aesthetic quality of experience	Access road	Construction, Operations	Adverse	Negligible	None	No											
	Decreased presence of dust and other air pollutants enhance aesthetic quality of experience	Access road	Post-closure	Beneficial	Negligible	None	No											
	Diminished drinking water quality	Mine site	All phases	Adverse	Negligible	None	No											
	Diminished visual quality	Access road, transmission line	Construction, Operations	Adverse	Negligible	None	No											
	Improved visual quality	Access road, transmission line	Closure, Post-closure	Beneficial	Negligible	None	No											
	Increased third party presence	All components	All phases	Adverse	Negligible	None	Yes	Increased interest in the Project area due to increased accessibility by new land users	Low	Landscape	Long-term	Continuous	Reversible long-term	Low	Minor	Not Significant	Medium	Intermediate
	Registered Hunters																	

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Increased noise levels from mine-related activities and haul truck traffic affect quality of experience	Mine site, Access road (within 1.5 km)	Construction, Operations, Closure	Adverse	Minor	None	Yes	The aesthetic quality of land short-term use activities may be diminished by noise associated with the mine during construction and operations	Low	Landscape	Short-term	Sporadic	Reversible	Neutral	Minor	Not Significant	High	Intermediate
	Increased presence of dust and other air pollutants diminishes aesthetic quality of experience	All components	Construction, Operations, Closure	Adverse	Minor	None	Yes	The aesthetic quality of land use activities may be diminished by the resulting dust associated with the access road during construction and operations	Low	Landscape	Long-term	Continuous	Reversible Long-term	Neutral	Minor	Not Significant	High	Intermediate
	Diminished drinking water quality	Mine Site	All phases	Adverse	Minor	None	Yes	Increased cosmetic and aesthetic effects of the drinking water	Low	Local	Long-term	Continuous	Irreversible	High	Minor	Not Significant	Medium	Low
	Diminished visual quality	Mine Site	Construction, Operations, Closure	Adverse	Minor	None	Yes	The quality of land use activities may be diminished by visual obstructions and disruptions from mine infrastructre and activities.	Low	Local	Longterm	Continuous	Irreversible	Neutral	Moderate	Not Significant	Medium	High
	Diminished visual quality	Transmission Line	Construction, Operations, Closure	Adverse	Negligible	None	Yes	The quality of land use activities may be diminished by visual obstructions and disruptions from mine infrastructre and activities.	Low	Landscape	Long-term	Continuous	Reversible Long-term	Neutral	Minor	Not Significant	Medium	High
	Increased third party presence	All components	All phases	Adverse	Minor	None	Yes	Increased interest in the project area due to increased accessibility by new land users	Low	Landscape	Long-term	Seasonal	Reversible Long-term	Low	Minor	Not Significant	Medium	Intermediate
	Decreased noise levels related to an absence of mine-related activities allows resumption of quality of land use experience	Mine site (within 1.5 km)	Post-closure	Beneficial	Negligible	None	No											
	Decreased presence of dust and other air pollutants enhance aesthetic quality of experience	All components	Host closure	Beneficial	Negligible	None	No											
	Improved visual quality	Mine Site	Post-closure	Adverse	Minor	None	Yes	The quality of land use activities may improve based on a cessation of industrial activities and decommissioning of infrastructure. However, tailings facility and the open pit will remain.	Medium	Local	Long-term	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
	Improved visual quality	Transmission Line	Post-closure	Beneficial	Negligible	None	No											
Quantity of Resources Effects Assessment																		
	Lake Babine Nation																	
	Decreased presence of moose due to human and sensory avoidance	Mine Site, Access Road	Construction	Adverse	Moderate	None	Yes	Construction activity and industrial presence may temporarily decrease the number of moose available for harvest by Lake Babine Nation members during construction	Medium	Landscape	Short-term	Continuous	Reversible short-term	High	Moderate	Not Significant	Medium	Low
	Increased presence of moose due to shift in distribution	All components	Operations	Beneficial	Moderate	None	Yes	Moose may return to the long-term area in and around the mouth of Morrison Creek during operations, which will increase the moose available for Lake Babine Nation harvest	Medium	Landscape	Long-term	Continuous	Reversible Long-term	High	Moderate	Not Significant	Medium	Low
	Increased presence of moose due to shift in distribution	All components	Closure, Post-closure	Beneficial	Minor	None	Yes	Moose population may increase due to a decline in mine-related activity and industrial presence. This may increase the moose available for Lake Babine Nation harvest.	Medium	Landscape	Long-term	Continuous	Reversible Long-term	High	Minor	Not Significant	Medium	Low
	Permanent loss of vegetative country food harvest capability (810 ha)	Mine Site, Transmission Line	All phases	Adverse	Minor	None	Yes	Installation of mine infrastructure and construction of components will require permanent removal of vegetation, resulting in loss of Lake Babine Nation vegetative harvest in perpetuity.	Low	Local	Far Future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	Intermediate
	Temporary loss of vegetative country food harvest capability (817 ha)	Mine Site, Transmission Line	Construction, Operations	Adverse	Negligible	None	No											
	Increase in the availability of vegetative country foods	Transmission Line	Operations	Beneficial	Minor	None	Yes	Typically, transmission line right of ways (once cleared) regrow with berry-bearing plants, which will increase Lake Babine Nation vegetative harvest capacity	Low	Local	Long-term	Continuous	Reversible long-term	High	Minor	Not Significant	High	High
	Degraded abundance and quality of vegetative country food	All components, esp Access Road	Construction, Operations	Adverse	Moderate	None	Yes	Presence of industrially-generated dust during construction and operations will negatively affect the quality and quantity of vegetation along the Access Road available for Lake Babine Nation harvest	Medium	Local	Long-term	Continuous	Reversible Long-term	Neutral	Moderate	Not Significant	High	High
	Maintenance of fish harvest levels due to negligible effects of the Project on fish habitat	All components	All phases	Beneficial	Negligible	None	No											
	Decreased presence of moose due to human and sensory avoidance	Mine Site, Access Road	Construction	Adverse	Moderate	None	Yes	Construction activity and industrial presence may temporarily decrease the number of moose available for harvest by Lake Babine Nation members during construction	High	Landscape	Short-term	Continuous	Reversible short-term	Low	Moderate	Not Significant	Medium	Low
	Tukii Lodge Hunting Canp																	
	Decreased presence of moose due to human and sensory avoidance	Mine Site, Access Road	Construction	Adverse	Moderate	None	Yes	Construction activity and industrial presence may temporarily decrease the number of moose available for harvest by Lake Babine Nation members during construction	High	Landscape	Short-term	Continuous	Reversible Short-term	Low	Moderate	Not Significant	Medium	Low
	Increased presence of moose due to shift in distribution, especially near mouth of Morrison Creek	All components	Operations	Beneficial	Minor	None	Yes	Moose may return to the long-term area in and around the mouth of Morrison Creek during operations, which will increase the moose available for harvest	Medium	Landscape	Longterm	Continuous	Reversible long-term	High	Minor	Not Significant	Medium	Low
	Increased presence of moose due to shift in distribution, especially near mouth of Morrison Creek	All components	Closure, Post-closure	Beneficial	Negligible	None	No											
	Maintenance of fish harvest levels due to negligible effects of the Project on fish habitat	All components	All phases	Beneficial	Negligible	None	No											
	Ookpik Lodge																	
	Decreased presence of moose due to human and sensory avoidance	Access road, transmission line	Construction	Adverse	Minor	None	Yes	Construction activity and industrial presence may temporarily decrease the number of moose available for wildlife viewing during construction	Low	Local	Short-term	Continuous	Reversible short-term	Low	Minor	Not Significant	Medium	Low
	Decreased presence of moose due to human and sensory avoidance	Access Road, Transmission Line	Construction	Adverse	Minor	None	Yes	Constructor activity and industrial presence may temporarily decrease the number of moose available for wildlife viewing during construction	Low	Local	Short-term	Continuous	Reversible short-term	Low	Minor	Not Significant	Medium	Low
	Increased presence of moose population for wildlife viewing due to attraction to mine components	Access Road, Transmission Line	Operations, Closure, Post-closure	Beneficial	Minor	None	Yes	Moose may return to the area in and around the mouth of Morrison Creek during operations, which will increase the moose available for wildlife viewing	Low	Local	Long-term	Continuous	Reversible Long-term	High	Minor	Not Significant	Medium	Low
	Trapline Holders																	
	Maintenance of marten population levels for harvesting	All components	All phases	Beneficial	Negligible	None	No											
	Registered Hunters																	
	Decreased presence of moose due to human and sensory avoidance	Mine Site, Access Road	Construction	Adverse	Minor	None	Yes	Construction activity and industrial prey may temporarily decrease the number of moose available for harvest during construction	Low	Landscape	Short-term	Continuous	Reversible short-term	High	Minor	Not Significant	Medium	Low
	Increased presence of moose due to shift in distribution	All components, esp Transmission Line	Operations, Closure, Post-closure	Beneficial	Minor	None	Yes	Moose may return to the area in and around the mouth of Morrison Creek during operations, which will increase the moose available for harvest	Low	Landscape	Long-term	Continuous	Reversible long-term	High	Minor	Not Significant	Medium	Low

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Canfor																	
	Outstanding forestry tenure obligations for free growing impede Canfor's ability to harvest timber in the areas of overlap.	All components	Construction	Adverse	Moderate	Discussions with Ministry of Forestry and Range to discuss release of Canfor's forestry obligation.	No											
	Harvest of strategic blocks BEFORE or DURING Project construction	All components	Construction	Beneficial	Negligible	Coordinate with forest tenure holder as to the timing and locations of timber removal. Compensation if project proceeds before fall 2010.	No											
	Harvest of strategic blocks AFTER Project construction			Adverse	Major		Yes	Major loss to merchantable timber	High	Landscape	Short-term	One time	Irreversible	Neutral	Major	Not Significant	Unknown	Intermediate
	Inability to develop, and/or harvest timber stands due to continuous vegetation suppression and management.	Mine site	Operations	Adverse	Moderate	Compensation for loss of harvestable timber stands or transfer of forest tenure to PBM over the 21 years of operations.	Yes	The Project footprint will not be available for harvest of merchantable timber. There will be temporary and permanent loss of timber.	Medium	Local	Long-term	Continuous	Reversible long-term	Neutral	Moderate	Not Significant	Medium	Low
	Regrowth of timber stands within tenure area for future harvest.	All components	Closure, Post-closure	Beneficial	Negligible	Coordinate with forest tenure holder as to the timing and locations of revegetation efforts.	Yes	The area in and around the Project footprint will once again be viable for timber harvesting, although some areas will be permanently lost.	Low	Landscape	Long-term	Continuous	Reversible long-term	Neutral	Minor	Not Significant	Medium	Low
	Angling Guides and Registered Anglers																	
	Maintenance of fish harvest levels due to negligible effects of the Project on fish habitat (e.g., Lake Trout and Sockeye Salmon).	All components	All phases	Adverse	Negligible	Work with angling guides, resident and Aboriginal anglers to develop a Fisheries Management Plan.	No											
	Ministry of Environment - Conservation Office																	
	Decreased poaching interest in the area due to a decrease in presence of moose due to human and sensory avoidance	All components	Construction	Beneficial	Moderate	None	Yes	Availability of moose drives the level of poaching interest and the necessary Conservation Office enforcement levels. A decrease in moose during construction may result in lower levels of poaching, and, as such, fewer Conservation Office resources to enforce hunting regulations and licensing.	Medium	Landscape	Short-term	Continuous	Reversible short-term	High	Moderate	Not Significant	Medium	Low
	Increased poaching interest in the area due to increased presence of moose, especially at the mouth of Morrison Creek	All components, esp Transmission Line	Operations, Closure, Post-closure	Adverse	Moderate	None	Yes	An increase in moose during operations may create increased poaching interest, which will necessitate increased Conservation office resources to regulate.	Medium	Landscape	Long-term	Continuous	Reversible long-term	Low	Moderate	Not Significant	Medium	Low
	Lake Babine Nation																	
	Increased capability to practice traditional activities due to increase in financial resources.	Human Resources	Construction, operations	Beneficial	Minor	None	Yes	Increased incomes to enable purchasing of fuel and equipment for traditional land use activities.	Low	Individual	Long-term	Regular	Reversible Long-term	Neutral	Minor	Not Significant	High	High
Cultural Values Effects Assessment	**Lake Babine Nation**																	
	Increased capability to practice traditional activities due to increase in financial resources.	Human Resources	Construction, operations	Beneficial	Minor	None	Yes	Increased incomes to enable purchasing of fuel and equipment for traditional land use activities.	Low	Individual	Long-term	Regular	Reversible Long-term	Neutral	Minor	Not Significant	High	High
	Decreased opportunity to practice traditional activities due to employment scheduling conflicts.	Human Resources	Construction, operations	Adverse	Moderate	None	No	If employees' schedules are flexible in this sense, no residual effects are expected.										
	Decreased opportunity to practice traditional activities due to decline in financial resources	Human Resources	Closure, post-closure	Adverse	Minor	None	No											
	Decreased transfer of TEK about the Project area between generations of Lake Babine Nation members, including population trends, movement patterns, management strategies, and species-specific habitat suitability needs	All components	All phases	Adverse	Minor	None	Yes		Low	Community	Long-term	Regular	Irreversible	Low	Minor	Not Significant	Medium	Intermediate
	Loss of knowledge and expertise regarding specific traditional land uses, including trapping, hunting, and plant gathering.	All components	All phases	Adverse	Minor	None	Yes		Low	Community	Long-term	Regular	Irreversible	Low	Minor	Not Significant	Medium	Intermediate
	Loss or degradation of culturally-sensitive areas	All components	Al phases	Adverse	Moderate	None	Yes	The access road may overlap with extremely sensitive areas, but both the mine site and road are areas of existing/prior use.	Medium	Local	Longterm	Continuous	Irreversible	Low	Moderate	Not Significant	Medium	Low
	Increased intra-Lake Babine Nation disagreement regarding the clan ownership of the area in the vicinity of the Project	All components	All phases	Adverse	Minor	None.	Yes		Low	Community	Short-term	Regular	Reversible short-term	Low	Minor	Not Significant	High	Intermediate
	Decreased spiritual/cultural connection to the land	All components	All phases	Adverse	Minor	None.	Yes	Increased industrial development in the area may affect some First Nations residents' spiritual/cultural connection with the land.	Low	Community	Longterm	Regular	Reversible long-term	Low	Minor	Not Significant	Medium	Intermediate
Management Objectives Effects Assessment	**Morice LRMP**																	
	Project conflicts with cultural heritage resources objectives	All components	Construction, Operations, Closure	Adverse	Minor	TBC - arch	Yes	TU sites, no significant new impacts.	Low	Local	Longterm	Continuous	Reversible long-term	High	Minor	Not Significant	Low	Low
	Project conflicts with hunting and fishing objectives	All components	Construction, Operations, Closure	Adverse	Minor	TBC - wildlife, aquatics (fish, game and furbearer populations)	Yes		Low	Local	Long-term	Continuous	Reversible long-term	High	Minor	Not Significant	High	High
	Project conflicts with recreation objectives	All components	Construction, Operations, Closure	Adverse	Minor	TBC - reevaluate based on other final effects.	Yes		Low	Local	Longterm	Continuous	Reversible long-term	High	Minor	Not Significant	Medium	High
	Support for access objectives	All components	Construction, Operations, Closure	Beneficial	Minor	Work with ILMB (as well as Lake Babine Nation, guide outfitters and interest groups) to develop an access management plan for the road.	No	The area is already accessible via the existing road with an effective access management plan, these objectives should not be affected.										
	Project conflictswith botanical forest products objectives	All components	Construction, Operations, Closure	Adverse	Minor	TBC - veg	Yes		Low	Local	Long-term	Continuous	Reversible long-term	High	Minor	Not Significant	High	High
	Project conflicts with guide outfitting objectives	All components	Construction, Operations, Closure	Adverse	Minor	TBC - wildlife a quatics (fish, game and furbearer populations)	Yes		Medium	Local	Long-term	Continuous	Reversible long-term	Low	Moderate	Not Significant	High	High
	Support for mineral and energy resource objectives	All components	Construction, Operations, Closure	Beneficial	Major	None	Yes	The project will support the mineral resource objectives of the LRMP.	High	Regional	Long-term	Continuous	Reversible long-term	High	Moderate	Not Significant	High	High
	Project conflicts with timber objectives	All components	Construction, Operations, Closure	Adverse	Minor	Work with forestry tenure holders to develop a timber supply management plan.	Yes		Medium	Local	Longterm	Continuous	Reversible long-term	Neutral	Moderate	Not Significant	High	High
	Project is neutral towards trapping objectives	All components	Construction, Operations, Closure	Negligible	Neutral	Work with trapline tenure holders to develop a wildlife management plan.	No											
Employment and Income Effects Assessment	**Effect 1**																	
	Increase in employment	Human Resources																
	Directly hiring a workforce, indirect supplier hiring, and induced hiring in response to new consumption from direct and indirect employee wages.	Granisle, Topley Landing, Smithers Landing, Topley, Burns Lake, Houston, and Telkwa	Construction	Beneficial	Minor	Hire a Human Resources Manager; Local hiring policies (30% local minimum hiring target); Local job/business fairs; Apprenticeships, mentorships, and on-the-job-training programs	Yes	Increased local employment	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	High	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	High	Intermediate
			Decommissioning, post-closure	Beneficial	Negligible		No											
		Human Resources	Construction	Beneficial	Moderate		Yes	Increased local employment	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	High	Intermediate
		Lake Babine Nation communities and Smithers	Operations	Beneficial	Moderate		Yes		High	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	High	Intermediate
			Decommissioning, post-closure	Beneficial	Negligible		No											
	Effect 2																	
	Decrease in employment	Human Resources					Yes											
	Loss of direct, indirect, and induced employment (lay offs).	Granisle, Topley Landing, Smithers Landing, Topley, Burns	Operations	Adverse	Negligible	Career counselling; Skills transfer and employment	No											

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		Lake, Houston, and Telkwa	Decommissioning/post-closure	Adverse	Minor	transition workshops; Retraining programs; Information kits preparing for mine closure; Documenting and tracking skills and certifications; Written and/or phone references	Yes	Mitigation prevents loss in employment from being as significant as initial post-enhancement increase	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Low
		Human Resources																
		Lake Babine Nation communities and Smithers	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Mitigation prevents loss in employment from being as significant as initial post-enhancement increase	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	High	Low
	Effect 3																	
	Increase in income	Human Resources																
	Paying wages and salaries to direct, indirect, and induced employees.	Granisle, Burns Lake, Houston, Smithers, and Telkwa	Construction	Beneficial	Minor	Hire a Human Resources Manager; Local hiring policies (30% local minimum hiring target); Local job/business fairs; Apprenticeships, mentorships, and on-the-job-training programs; Financial management training	Yes	Increased local employment	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, and Topley	Construction	Beneficial	Moderate		Yes	Increased local employment	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	Medium	Intermediate
			Operations	Beneficial	Moderate		Yes		High	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
	Effect4																	
	Decrease in income	Human Resources																
	Ceasing paying wages and salaries to direct, indirect, and induced employees.	Granisle, Burns Lake, Houston, Smithers, and Telkwa	Operations	Adverse	Negligible	Career counselling; Skills transfer and employment transition workshops; Retraining programs; Information kits preparing for mine closure; Documenting and tracking skills and certifications; Written and/or phone references; Financial management training	No											
			Decommissioning/post-closure	Adverse	Minor		Yes	Mitigation prevents loss in employment from being as significant as initial post-enhancement increase	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, and Topley	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Mitigation prevents loss in employment from being as significant as initial post-enhancement increase	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
	Effect 5																	
	Variable access to employment and income	Human Resources																
	Unequal opportunities across genders, ethnicities, cultures, ages, and abilities due to pre-existing socio-cultural issues.	Lake Babine Nation communities	Construction	Adverse	Moderate	Equal opportunity and anti-discrimination policy	Yes	Variable access to employment and income	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Operations	Adverse	Moderate		Yes		Negligible	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
		Human Resources																
		Burns Lake, Houston, Smithers, Topley Landing, Smithers Landing, Topley, and Telkwa	Construction	Adverse	Minor		Yes	Variable access to employment and income	Negligible	Community	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
			Operations	Adverse	Minor		Yes		Negligible	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
Education, Skills, and Training Effects Assessment	**Effect 1**																	
	Increase in skills base	Human Resources																
	Incentive for unskilled locals to obtain job-specific skills; Project employees obtain on-the-job training and experience; individuals with skills and experience are attracted to the Project area by employment opportunities.	Lake Babine Nation communities	Construction	Beneficial	Minor	Skills development and training programs and partnerships; Scholarships and awards for local students; Apprenticeships, mentorships, and on-the-job-training programs; Skills inventory and needs assessment survey; Provision of professional support for mining-specific education programs	Yes	Increase in labour and skills base	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	High	Intermediate
			Operations	Beneficial	Minor		Yes		High	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	High	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		Yes		Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Granisle, Burns Lake, Houston, and Smithers	Construction	Beneficial	Minor		Yes	Increase in labour and skills base	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	High	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	High	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		Yes		Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Topley Landing, Smithers Landing, Topley and Telkwa	Construction	Beneficial	Negligible		Yes	Increase in labour and skills base	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Negligible		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		Yes		Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 2																	
	Decrease in skills base	Human Resources																
	Out-migrating skilled labour at closure; loss of incentive for education and training.	Lake Babine Nation communities, Granisle, Burns Lake, and Houston	Decommissioning/post-closure	Adverse	Negligible	Skills development, training programs and partnerships; Skills transfer and employment transition workshops; Retraining programs	Yes	Decrease in labour and skills base	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Intermediate
	Effect3																	
	Increased demand for training and skill development resources	Human Resources																
	Increased demand for locally available education and training programs and resources.	Granisle, Topley Landing, Smithers Landing, Topley and Telkwa	Construction	Beneficial	Minor	Skills development and training programs and partnerships; Scholarships and awards for local students; Apprenticeships, mentorships, and on-the-job-training programs; Skills inventory and needs assessment survey; Provision of professional support for mining-specific education programs	Yes	Increased demand for training and skill development	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Houston, and Smithers	Construction	Beneficial	Minor		Yes	Increased demand for training and skill development	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
	Effect4																	
	Decreased demand for training and skill development resources	Human Resources																
	Decreased demand for locally available education and training programs and resources.	Lake Babine Nation communities, Granisle, Topley Landing, Burns Lake, Houston, Smithers Landing, Topley and Telkwa	Decommissioning/post-closure	Neutral	Negligible	Skills development and training programs and partnerships; Skills transfer and employment transition workshops; Retraining programs	Yes	Decreased demand for training and skill development	Negligible	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Intermediate
	Effect5																	
	Decreased incentive to continue/complete education	Human Resources																
	Decreased motivation to continue with education relative to the immediate gains from receiving a salary.	Lake Babine Nation communities, Burns Lake, Houston, and Smithers	Construction	Adverse	Minor	Scholarships and awards for local students; Minimum age and education level hiring policies	Yes	Decreased incentive to continue/complete education	Negligible	Community	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
			Operations	Adverse	Minor		Yes		Negligible	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
			Decommissioning/post-closure	Adverse	Minor		Yes		Negligible	Community	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Low	Low

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Effect 6																	
	Improved essential work and life skills	Human Resources																
	Enhanced essential life skills and work skills through steady employment and income management.	Lake Babine Nation communities, Burns Lake, Houston, and Smithers	Construction	Beneficial	Minor	Apprentceships, mentorships, and on-the-job-training programs; Life and career skills training; Financial management training	Yes	Improved essential work and life skills	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
		Human Resources					No											
		Topley Landing, Smithers Landing, Topley, and Telkwa	Construction	Beneficial	Negligible		No											
			Operations	Beneficial	Negligible													
Business Opportunities and Economic Development Effects Assessment	**Effect 1**																	
	Increased businessopportunities	Human Resources																
	Direct, indirect, and induced business opportunities created through demand from the Project and its employees.	Granisle, Burns Lake, Houston, and Smithers	Construction	Beneficial	Moderate	Hire a Human Resources Manager; Local job/business fairs; Support local economic development associatons	Yes	Increased local business opportunities	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Moderate		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, Topley, and Telkwa	Construction	Beneficial	Minor		Yes	Increased local business opportunities	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
	Effect 2																	
	Decreased business opportunities	Human Resources																
	Decreased or ceased direct, indirect, and induced business opportunities created through demand from the Project and its employees.	Granisle, Burns Lake, Houston, and Smithers	Operations	Adverse	Negligible	Emphasize contract timelines; References and/or testimonials	No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Mitigation will help businesses prepare for a slowdown, yet will do little to reverse this effect	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
		Human Resources																
		Lake Babine Nation communities, Smithers Landing, Topley, and Telkwa	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Minor		Yes	Mitigation will help businesses prepare for a slowdown, yet will do little to reverse this effect	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
	Effect 3																	
	Increased economic development	Human Resources																
	Direct, indirect, and induced economic growth derived from new demand for goods and services from the Project and its employees	Northwestern BC	Construction	Beneficial	Moderate	Hire a Human Resources Manager; Local job/business fairs; Support local economic development associatons; Local hiring policies; Apprentceships, mentorships, and on-the-job-training programs	Yes	Increased economic growth	High	Regional/First Nations	Short-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	Medium	Intermediate
			Operations	Beneficial	Moderate		Yes		High	Regional/First	Medium-term	Continuous	Reversible Short-term	Neutral	Major	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
		Human Resources																
		Province	Construction	Beneficial	Minor		Yes	Increased economic growth	Medium	Provincial Transboundary	Short-term	Continuous	Reversible long-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Low	Provincial Transboundary	Medium-term	Continuous	Reversible long-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
	Effect 4	Human																
	Decreased economic development	Resources																
	Direct, indirect, and induced economic decline derived from the absence of demand for goods and services from the Project and its employees	Northwestern BC	Operations	Adverse	Negligible	Emphasize contract timelines; References and/or testimonials; Career counselling; Skills transfer and employment transition workshops; Retraining programs; Information kits on preparing for mine closure; Documenting and tracking skills and certifications	No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Mitigation prevents loss in economic growth from being as significant as the initial post-enhancement increase	Medium	Regional/First Nations	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
		Human Resources																
		Province	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Minor		No											
	Effect 5																	
	Increased economic dependency on mining sector	Human Resources																
	Increased reliance on mining sector as an employment source	All primary communities and Smithers	Construction	Adverse	Moderate	Community Sustainability Advisory Committee	Yes	Increased economic dependence on mining sector	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Operations	Adverse	Moderate		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Decommissioning/post-closure	Adverse	Negligible		No											
		Human Resources																
		Burns Lake, Houston, Telkwa, and Northwestern BC	Construction	Adverse	Minor		Yes	Increased economic dependence on mining sector	Low	Regional/First Nations	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
			Operations	Adverse	Minor		Yes		Negligible	Regional/First Nations	Medium-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Medium	Low
			Decommissioning/post-closure	Adverse	Negligible		No											
	Effect 6																	
	Increasingly specialized mining industry																	
	Increased capacity for the region to become a mining hub, attracting other projects and technology advances.	Human Resources				Hire a Human Resources Manager; Local job/business fairs; Local hiring policies; Apprentceships, mentorships, and on-the-job-training programs	Yes	Increasingly specialized mining industry	Medium	Regional/First Nations	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
		Northwestern BC and Smithers	Construction	Beneficial	Minor		Yes		Low	Regional/First Nations	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Operations	Beneficial	Minor		No											
			Decommissioning/post-closure	Beneficial	Negligible													
Population and Demographics Effects Assessment	**Effect1**																	
	Increased population	Human Resources																
	Hiring a workforce may induce population growth.	Granisle	Construction	Beneficial	Major	Local hiring policies; Local job/business fairs; Apprenticeships, mentorships, and on-the-job-training programs	Yes	Increased population	High	Community	Short-term	Continuous	Reversible long-term	Neutral	Moderate	Not Significant	High	Intermediate
			Operations	Beneficial	Major		Yes		Medium	Community	Medium-term	Continuous	Reversible long-term	Neutral	Moderate	Significant	High	Intermediate
			Decommissioning/post-closure	Beneficial	Negligible		No											
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, and Topley	Construction	Mixed	Moderate		Yes	Increased population	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Intermediate
			Operations	Mixed	Moderate		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Intermediate
			Decommissioning/post-closure	Mixed	Negligible		No											
		Human Resources																
		Burns Lake, Houston, Telkwa, and Smithers	Construction	Beneficial	Moderate		Yes	Increased population	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Intermediate
			Operations	Beneficial	Moderate		Yes		Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	High	Intermediate

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			Decommissioning/post-closure	Beneficial	Negligible		No											
	Effect 2																	
	Decreased population	Human Resources																
	The decline in job opportunities may result in population falls.	Granisle	Operations	Adverse	Negligible	Local hiring policies; Local job/business fairs; Apprenticeships, mentorships, and on-the-job-training programs	No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Decreased population	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, and Topley	Operations	Mixed	Negligible		No											
			Decommissioning/post-closure	Mixed	Minor		Yes	Decreased population	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
		Human Resources																
		Burns Lake, Houston, Telkwa, and Smithers	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Minor		Yes	Decreased population	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
	Effect 3																	
	Change in community demographics	Human Resources																
	Project-related immigration may alter the gentler balance, skills levels, and culture of the community.	Granisle	Construction	Mixed	Moderate	Inter-cultural training; Equal opportunity and anti-discrimination policy; Communication with community planning authorities and service providers	Yes	Change in community demographics	High	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
			Operations	Mixed	Moderate		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Low
			Decommissioning/post-closure	Mixed	Negligible		No											
		Human Resources																
		Lake Babine Nation communities, Topley Landing, Smithers Landing, Topley, Burns Lake, Houston, Smithers, and Telkwa	Construction	Mixed	Minor		Yes	Change in community demographics	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Operations	Mixed	Minor		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Low
			Decommissioning/post-closure	Mixed	Negligible		No											
Services and Infrastructure Effects Assessment	**Effect 1**																	
	Increased demand on community infrastructure, programs, and services	Human Resources																
	Project-related immigration may increase usage and competition for goods, services, and community amenities and resources	Granisle, Burns Lake, and Houston	Construction	Mixed	Moderate	Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job-training programs	Yes	Increased demand on community infrastructure, programs, and services	Low	Community	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
			Operations	Mixed	Moderate		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Lake Babine Nation communities and Smithers	Construction	Adverse	Minor		Yes	Increased demand on community infrastructure, programs, and services	Low	Community	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
			Operations	Adverse	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
	Effect 2																	
	Decreased demand on community infrastructure, programs, and services	Human Resources																
	As workers' jobs are terminated upon mine closure, mine job-related emigration may reduce usage and competition for goods, services, and community amenities and resources.	Lake Babine Nation communities, Granisle, Burns Lake, Houston, and Smithers	Decommissioning/post-closure	Mixed	Negligible	Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job-training programs	Yes	Decreased demand on community infrastructure, programs, and services	Negligible	Community	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
	Effect 3																	
	Increased tax base and provision of community infrastructure and services	Human Resources																
	Project and employee income tax and other tax payments will contribute to government revenues.	Granisle	Construction		Moderate	Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job-training programs	Yes	Increased tax base and provision of community infrastructure and services	Low	Community	Medium-term	Continuous	Reversible Short-term	High	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Moderate		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	High	Moderate	Not Significant	Medium	Intermediate
		Human Resources																
		All communities except for Granisle and Lake Babine Nation communities	Construction	Beneficial	Minor		Yes	Increased tax base and provision of community infrastructure and services	Negligible	Community	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Lake Babine Nation communities	Construction	Beneficial	Negligible		Yes	Increased tax base and provision of community infrastructure and services	Negligible	Community	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
			Operations	Beneficial	Negligible		Yes		Negligible	Community	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
	Effect 4																	
	Decreased tax base and provision of community infrastructure and services	Human Resources																
	Reduced Project and employee income tax and other tax payments will decrease government revenues	Granisle	Operations	Adverse	Negligible	Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job-training programs	No											
			Decommissioning/post-closure	Adverse	Moderate		Yes	Decreased tax base and provision of community infrastructure and services	Low	Community	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		All communities except for Granisle and Lake Babine Nation communities	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Negligible		Yes	Decreased tax base and provision of community infrastructure and services	Negligible	Community	Short-tens	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
		Human Resources																
		Lake Babine Nation communities	Operations	Adverse	Negligible		No											
			Decommissioning/post-closure	Adverse	Negligible		Yes	Decreased tax base and provision of community infrastructure and services	Negligible	Community	Short-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Intermediate
	Effect 5																	
	Increased property value and housing demand:	Human Resources				Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job-training programs	Yes	Increased property value and housing demand	Low	Community	Short-tens	Continuous	Reversible Short-term	High	Moderate	Not Significant	Medium	Intermediate
	The mine's development and operations will trigger an upward surge in the market value of residential and commercial properties and need for housing in the surrounding area.	Granisle, Topley Landing, Smithers Landing, and Topley	Construction	Mixed	Major		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	High	Major	Not Significant	Medium	Intermediate
			Operations	Mixed	Major													
		Human Resources																
		Burns Lake, Houston, and Smithers	Construction	Mixed	Moderate		Yes		Low	Community	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
			Operations	Mixed	Moderate		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Intermediate
	Effect6																	
	Decreased property value:	Human Resources																

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	The mine's closure will result in a lower market value of residential and commercial properties and need for housing in the surrounding area.	Granisle, Tapley Landing, Topley, Burns Lake, Houston, and Smithers	Decommissioning/post-closure	Mixed	Minor	Communicate with community planning authorities and service providers; Hire a Community Liaison and establish a Community Sustainability Advisory Committee; Local hiring policies; Local job/business fairs; Apprentceships, mentorships, and on-the-job training programs	Yes	Decreased property value and housing demand	Negligible	Community	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Low
Cultural Identity and Sustainability Effects Assessment	**Effect1**																	
	Decreased knowledge/participation in Carrier/Lake Babine cultural and/or traditional land use activities and customs:	Human Resources																
	Lake Babine Nation members employed with the Project may have reduced opportunities to speak in their native language and/or partake in cultural activities with family and fellow Lake Babine Nation members.	Lake Babine Nation communities	Construction	Adverse	Moderate	Sponsoring non-work related safety training	Yes	Decreased knowledge/participation in Carrier/Lake Babine language and/or cultural and/or traditional land use activities and customs.	Medium	First Nations	Short-term	Continuous	Reversible Short-term	High	Moderate	Not Significant	Medium	Low
			Operations	Adverse	Moderate		Yes		Medium	First Nations	Medium-term	Continuous	Reversible Short-term	High	Moderate	Not Significant	Medium	Low
	Effect2																	
	Increased knowledge/participation in Carrier/Lake Babine cultural and/or traditional land use activities and customs:	Human Resources																
	Increased income and time available between shifts during operations may increase available time to speak in native language and/or partake in cultural activities with family and fellow Lake Babine Nation members.	Lake Babine Nation communities	Construction	Beneficial	Minor	Sponsoring non-work related safety training	Yes	Increased knowledge/participation in Carrier/Lake Babine language and/or cultural and/or traditional land use activities and customs	Medium	First Nations	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Low
			Operations	Beneficial	Minor		Yes		Medium	First Nations	Medium-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Low
			Decommissioning/post-closure	Beneficial	Moderate		Yes		Medium	First Nations	Short-term	Continuous	Reversible Short-term	High	Minor	Not Significant	Medium	Low
	Effect3																	
	Increased intercultural exchange:	Human Resources																
	Interacting mixed outsider/western and Lake Babine Nation workforce will increase awareness of western techno-rational worldviews and values as well as Aboriginal, traditional, and specifically, Lake Babine Nation worldviews and values.	Lake Babine Nation communities	Construction	Mixed	Moderate	Intercultural training	Yes	Increased- intercultural exchange through exposure to different cultures	Low	First Nations	Short-tens	Continuous	Reversible long-term	High	Minor	Not Significant	Medium	Low
			Operations	Mixed	Moderate		Yes		Low	First Nations	Medium-term	Continuous	Reversible long-term	High	Moderate	Not Significant	Medium	Low
	Effect4																	
	Decreased intercultural exchange:																	
	Reduced interaction of mixed outsider/western co-workers because of job terminations will reduce opportunity for exposure to, and awareness of, western techno-rational worldviews and values as well as Aboriginal, traditional, and specifically, Lake Babine Nation worldviews and values.	Lake Babine Nation Communities	Decommissioning/post-closure	Mixed	Minor	Intercultural training	Yes	Decreased intercultural exchange through lack of exposure to different cultures in the workplace	Low	First Nations	Medium-term	Continuous	Reversible Short-term	High	Negligible	Not Significant	Medium	Low
Community Well-being Effects Assessment	**Effect 1:**																	
	Increased individual self-esteem/community pride and engagement:	Human Resources																
	Increase in an overall sense of self-worth and capacity through employment, skills development, salaries, and benefits.	Lake Babine Nation communities, Granisle, Burns Lake, and Houston	Construction	Beneficial	Minor	Hire a Community Liaison; Establish a Community Sustainability Advisory Committee	Yes	Increased individual self-esteem/community pride and engagement	Medium	Community	Short-term	Continuous	Reversible Medium-term	Neutral	Major	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Medium	Community	Medium-term	Continuous	Reversible Medium-term	Neutral	Major	Significant	Medium	Intermediate
		Human Resources																
		Topley Landing, Smithers Landing, Topley, Telkwa, and Smithers	Construction	Beneficial	Negligible		Yes	Increased individual self-esteem/community pride and engagement	Low	Community	Short-term	Continuous	Reversible Medium-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Negligible		Yes		Low	Community	Medium-term	Continuous	Reversible Medium-term	Neutral	Moderate	Not Significant	Medium	Intermediate
	Effect 2:																	
	Decreased individual self-esteem/community pride and engagement:	Human Resources																
	Decrease in an overall sense of self-worth and capacity, development, salaries, and benefits because of job and contract termination upon the mine's closure	Lake Babine Nation communities and Granisle	Decommissioning/post-closure	Adverse	Moderate	Hire a Community Liaison; Establish a Community Sustainability Advisory Committee	Yes	Decreased individual self-esteem/community pride and engagement	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Burns Lake, Houston, Smithers, Topley Landing, Smithers Landing, Topley, and Telkwa	Decommissioning/post-closure	Adverse	Moderate		Yes	Decreased individual self-esteem/community pride and engagement	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 3:																	
	Increased financial independence and access to goods and services:	Human Resources																
	Improved access to goods and services through increased income, economic development, etc.	Lake Babine Nation communities, Granisle, Topley Landing, Burns Lake, Houston, Smithers Landing, and Topley	Construction	Beneficial	Moderate	Financial management and general life skill development training programs	Yes	Increased financial independence and access to goods and services	Medium	Community	Short-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
			Operations	Beneficial	Moderate		Yes		Medium	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Moderate	Not Significant	Medium	Intermediate
		Human Resources																
		Burns Lake, Houston, Telkwa, and Smithers	Construction	Beneficial	Minor		Yes	Increased financial independence and access to goods and services	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Beneficial	Minor		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 4:																	
	Increased participation in socially/health-damaging activities:	Human Resources																
	Potential increase in drug and alcohol use and other societal challenges through disposable income generated from job salaries.	Lake Babine Nation communities, Granisle, Topley Landing, Smithers Landing, Burns Lake, and Houston	Construction	Adverse	Minor	Hire a Community Liaison; Establish a Community Sustainability Advisory Committee; Financial management and general life skill development training programs; Support for substance abuse treatment; Zero tolerance drug and alcohol policy	Yes	Increased participation in socially/health-damaging activities	Low	Community	Short-term	Continuous	Reversible Medium-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 5:																	
	Increased family stress and dysfunction:	Human Resources																
	Potential disruption to families resulting in increased stress, separation, and breakdowns in familial relationships.	Lake Babine Nation communities, Granisle, and Topley Landing	Construction	Adverse	Moderate	Hire a Community Liaison; Establish a Community Sustainability Advisory Committee; Financial management and general life skill development training programs; Support for substance abuse treatment	Yes	Increased family stress and dysfunction	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Adverse	Moderate		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Human Resources																
		Burns Lake and Houston	Construction	Adverse	Minor		Yes	Increased family stress and dysfunction	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate

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			Operations	Adverse	Minor		Yes		Negligible	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 6																	
	Decrease in quality of natural environment, recreation, road traffic, and safety:	Human Resources																
	The construction and operation of the mine and concentrate hauling activities may cause deterioration to the environment, outdoor recreation, and road safety.	Granisle, Topley Landing, Tachet, and Topley	Construction	Adverse	Minor	Hire a Community Liaison; Establish a Community Sustainability Advisory Committee	Yes	Decrease in quality of natural environment, recreation, road traffic, and safety	Low	Community	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Adverse	Minor		Yes		Low	Community	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
	Effect 7																	
	Decreased purchasing power and increased cost of living:																	
	The Project may give rise to consumer price inflation that affects the cost of living for those whose wages do not keep pace with the local inflation rate.	Northwestern BC	Construction	Adverse	Minor	Financial management and general life skill development training programs	Yes	Decreased purchasing power and increased cost of living	Low	Regional/First Nation	Short-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Low	Intermediate
			Operations	Adverse	Minor		Yes		Low	Regional/First Nation	Medium-term	Continuous	Reversible Short-term	Neutral	Negligible	Not Significant	Low	Intermediate
			Decommissioning/post-closure	Adverse	Negligible		No											
Land-based Livelihoods Effects Assessment	**Effect 1**																	
	Decrease in business profits, personal incomes, and quality of life:																	
	Project disturbances to natural environment harm businesses offering wilderness and/or hunting experiences	Mine site and access road, Tukii Lodge Guide Outfitters	Construction	Adverse	Moderate	Relocation/Compensation Package; Community Sustainability Advisory Committee	Yes	Decrease in business profits, personal incomes, and quality of life	Medium	Individual/family	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Adverse	Moderate		Yes		Low	Individual/family	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
		Mine site and access road, Ookpik	Construction	Adverse	Minor		Yes	Decrease in business profits, personal incomes, and quality of life	Medium	Individual/family	Short-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
			Operations	Adverse	Minor		Yes		Low	Individual/family	Medium-term	Continuous	Reversible Short-term	Neutral	Minor	Not Significant	Medium	Intermediate
Visual Effects Assessment	The visual effect of Project-related activities on the surrounding landscape	Pit	Operation	Adverse	Moderate	N/A	Yes	Pit walls enlarged when pit becomes deeper	Medium	Landscape	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
			Closure	Adverse	Major	N/A	Yes	Slow fill up of the pit with water	High	Landscape	Far future	Continuous	Irreversible	Neutral	Major	Not Significant	High	High
			Post-closure	Adverse	Moderate	Slowly fill until just under lake surface water level	Yes	Less area of pit walls will be visible	Medium	Landscape	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
		Waste Rock Dump	Operation	Adverse	Major	~~N/A~~ Waste Rock Dump removed	Yes	~~WRD becoming larger over time~~ Waste Rock Dump placed back into open pit	Medium	Landscape	Far future	Continuous	Irreversible	Neutral	Moderate	Not Significant	High	High
			Closure	Adverse	Major	~~Dropping salvaged soil material over WRD and planting trees~~ Waste Rock Dump removed	Yes	~~Revegetation of the sides and the top~~ Waste Rock Dump placed back into open pit	~~High~~ Negligible	~~Regional~~ Local	Far future	Continuous	~~Irreversible~~ Reversible Short-term	Neutral	~~Moderate~~ Negligible	Not Significant	High	High
			Post-closure	Adverse	Minor	Green up with forests and grasses. Waste Rock Dump removed	Yes	~~Blending in with the surrounding landscape.~~ Waste Rock Dump placed back into open pit	Low	Regional	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
		Overburden stockpiles	Operation	Adverse	Major	N/A	Yes	Stockpiles becoming larger over time	High	Landscape	Medium-term	Continuous	Reversible	Neutral	Minor	Not Significant	High	High
			Closure	Adverse	Moderate	~~Material being used for draping over waste rock dump and~~ Tailings dam will completely remove the stockpile. Overburden stockpile changed location	Yes	Removal of material for revegetation use of other Project components. Overburden stockpile moved from Morrison Point to 700 m from Morrison Lake.	~~Medium~~ Negligible	Local	Medium-term	Continuous	Reversible Short-term	Neutral	~~Minor~~ Negligible	Not Significant	High	High
			Post-closure	Adverse	Negligible	Material being used for draping over waste rock dump and tailings dam will completely remove the stockpile	No											
		Low-grade ore stockpile	Operation	Adverse	Major	N/A	Yes	Stockpile becoming larger over time	High	Regional	Medium-term	Continuous	Reversible	Neutral	Minor	Not Significant	High	High
			Closure	Adverse	Minor	Complete removal of stockpile through processing ore	Yes	Underlying bare earth covered with salvaged soil material	Medium	Local	Short-term	Continuous	Reversible	Neutral	Negligible	Not Significant	High	High
			Post-closure	Adverse	Negligible	Green up with forests and grasses	No	Natural looking forest cover										
		Tailings storage facility	Operation	Adverse	Major	N/A	Yes	Build-up of dams and storage of tailings	High	Regional	Far future	Continuous	Irreversible	Neutral	Moderate	Not Significant	High	High
			Closure	Adverse	Major	~~Green up dams with grasses and fill with sediment.~~ Reclamation of TSF with terrestrial and ponded areas	Yes	~~Grass covered dam with lake behind it.~~ Smaller pond area, reclamation of terrestrial areas and wetlands	~~High~~ Medium	~~Regional~~ Local	Far future	Continuous	Irreversible	Neutral	~~Moderate~~ Minor	Not Significant	High	High
			Post-closure	Adverse	Moderate	Green up dams with grasses and fill with sediment	Yes	Grass covered dams with natural-looking wetland	Medium	Regional	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
		Plant site	Operation	Adverse	Major	N/A	Yes		High	Landscape	Far future	Continuous	Irreversible	Low	Negligible	Not Significant	Medium	High
			Closure	Adverse	Moderate	Demolishing buildings	Yes	Grass and shrub cover	Medium	Local	Far future	Continuous	Irreversible	Low	Negligible	Not Significant	Medium	High
			Post-closure	Adverse	Minor	Demolishing buildings	Yes	Natural-looking forest cover	Low	Local	Far future	Continuous	Irreversible	Low	Negligible	Not Significant	Medium	High
		Transmission line	Operation	Adverse	Minor	Green up right-of-way with grasses and low vegetation. Trees will be trimmed	Yes	Grasses and shrub under the transmission lines	Low	Landscape	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
			Closure	Adverse	Minor	Green up right-of-way with grasses and low vegetation. Trees will be trimmed	Yes	Grasses and shrub under the transmission lines	Low	Landscape	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
			Post-closure	Adverse	Minor	Green up right-of-way with grasses and low vegetation. Trees will be trimmed	Yes	Grasses and shrub under the transmission lines	Low	Landscape	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
		Access road to mine site (non-existing)	Operation	Adverse	Minor	N/A	Yes		Low	Local	Far future	Continuous	Irreversible	Neutral	Minor	Not Significant	Medium	High
			Closure	Adverse	Minor	N/A	Yes		Low	Local	Far future	Continuous	Irreversible	Low	Minor	Not Significant	Medium	High
			Post-closure	Adverse	Minor	N/A	Yes		Low	Local	Far future	Continuous	Irreversible	Low	Minor	Not Significant	Medium	High
Noise Effects on Human Health	Increase in average daytime and night time noise - People may be able to detect a change and not be able to cope	Access Road	Construction/Operations	Adverse	Negligible		No											
	Increase in pass-by daytime and night time noise - People may be able to detect a change and not be able to cope	Access Road	Construction/Operations	Adverse	Negligible		No											
	Increase in average daytime and night time noise - People may be able to detect a change and not be able to cope	Highway 118	Construction/Operations	Adverse	Negligible		No											
	Increase in pass-by daytime and night time noise - People may be able to detect a change and not be able to cope	Highway 118	Construction/Operations	Adverse	Negligible		No											
	Increase in average daytime noise from constant mine noise at Tukki Lodge Hunting Camp	Mine site	Construction/ Operations	Adverse	Minor	All site vehicles to comply with noise limits, all mining equipment to undergo regular maintenance minimize vegetation clearing surrounding Project footprint where possible to provide additional noise buffer.	Yes	People may be able to detect a change and not be able to cope	High	Individual / Household	Medium-term	Regular	Reversible Long-term (at closure)	Low	Major	Not Significant	Medium	Intermediate
	Increase in night time noise from constant mine noise at Tukii Lodge Hunting Camp -	Mine site	Construction/ Operations	Adverse	Minor	All site vehicles to comply with noise limits, all mining equipment to undergo regular maintenance minimize vegetation clearing surrounding Project footprint where possible to provide additional noise buffer.	Yes	People may be able to detect a change and not be able to cope	Medium	Individual / Household	Medium-term	Regular	Reversible Long-term (at closure)	Low	Major	Not Significant	Medium	Intermediate

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Increase in peak noise from blasting at Tukii Lodge Hunting Camp	Mine site	Construction/ Operations	Adverse	Moderate	Limiting the blasts to once per day and the Tukii Hunting Camp will be provided with a blasting schedule that will include the days and times that the blasting will occur. To help them prepare for the blast noise, blasting times will be scheduled for the same time period each day.	Yes		Medium	Individual / Household	Medium-term	Regular	Reversible Long-term (at closure)	Low	Minor	Not Significant	Medium	Intermediate
	SO2, NO2, CO, O3, and PM2.5 concentrations may increase due to Project-related emissions that may result in adverse human health effects.	Mine Site and Access Road	Construction and Operation	Adverse											Negligible	Not Significant		
	Diesel Particulate Matter (PM2.5 and PM10) concentrations may increase due to Project-related emissions that may result in adverse non-carcinogenic human health effects at the fences line, Tukii Hunting Camp, Houston Forestry Camp, and Ookpik Wilderness Lodge.	Mine Site and Access Road	Construction and Operation	Adverse											Negligible	Not Significant		
	Diesel Particulate Matter (PM2.5 and PM10) concentrations may increase due to Project-related emissions that may result in adverse carcinogenic human health effects at the fence line, Houston Forestry Camp, and Ookpik Wilderness Lodge.	Mine Site and Access Road	Construction and Operation	Adverse											Negligible	Not Significant		
	Diesel Particulate Matter (PM2.5 and PM10) concentrations may increase due to Project-related emissions that may result in adverse human health effects at Tukii Hunting Camp.	Mine Site and Access Road	Construction and Operation	Adverse											Significant	Not Significant		
Drinking Water	Surface runoff and siltation and contaminant loading	Mine Site	Construction/ operations	Adverse	Minor	Silt fences; best management practices; environmental monitoring; erosion management plan	Yes	Increase in total suspended solids and potential contaminants resulting in degraded water quality which could be consumed by people and cause adverse health effects	Low	Individual / Household	Short-term	One Time			Negligible	Not Significant	Low	High
	Leaching of nitrogen residues from blasting	Mine Site	Construction, operations, closure and post-closure	Adverse	Minor	Proper storage and handling of blasting materials away from waterways, regular maintenance of facility, environmental monitoring	Yes	Increase in nitrogen residues resulting in degraded water quality which could be consumed by people and cause adverse health effects	Low	Individual / Household	Long-term	Sporadic			Negligible	Not Significant	Low	High
	Metal leaching and Acid Rock Generation (ML/ARD) from waste rock piles and temporary low grade ore pile	Mine Site	Construction, operations, closure and post-closure	Adverse	Minor	ML/ARD assessment of rock and substrates, appropriate use/storage of excavated materials, environmental monitoring, and groundwater pumping to TSF (operations) or pit (closure)	Yes	Degraded water quality could be consumed by people and cause adverse health effects	Low	Individual / Household	Long-term	Continuous			Negligible	Not Significant	Low	Medium
	Discharge of water from Ore Pond and Booker Lake into Morrison Lake.	Mine Site	Construction	Neutral	Negligible		No											
	Affected water in the Open Pit	Mine Site	Closure and post- closure	Adverse	Minor	Signs will be posted warning that public access is not permitted and that the water is not potable.	No											
	Discharge of Open Pit water to Morrison Lake	Mine Site	Closure	Adverse	Minor	Water will be treated to permitted discharge levels, water will be monitored to ensure that it meets the required permit levels.	Yes	Degraded water quality could be consumed by people and cause adverse health effects	Low	Individual / Household	Long-term	Sporadic/Continuous			Negligible	Not Significant	Low	Low
	Affected water in the TSF	Mine Site	Closure and post- closure	Adverse	Minor	Signs will be posted warning that public access is not permitted and that the water is not potable.	Yes	Degraded water quality could be consumed by people and cause adverse health effects	Low	Individual / Household	Long-term	Continuous			Negligible	Not Significant	Low	High
	Affected water in the TSF	Mine Site	Closure and post-closure	Adverse	Minor	Monitoring and Human Health Risk Assessment, if risk assessment finds unacceptable risks, signs may be posted warning that public access is not permitted and that the water is not potable and or additional mitigation which will be developed upon closure.	Yes	Degraded water quality could be consumed by people and cause adverse health effects	Low	Individual / Household	Long-term	Continuous			Negligible	Not Significant	Low	Intermediate
	Seepage of impacted water in the TSF into surface water bodies	Mine Site	Operations, closure and post-closure	Adverse	Minor	Ongoing monitoring, if monitoring during low flow events indicates exceedances of nitrate, signs will be posted indicating that the water is not potable.	Yes	Degraded water quality could be consumed by people and cause adverse health effects		Individual / Household	Short- term	Sporadic			Negligible	Not Significant	Low	High
Human Health Effects Associated with Country Foods	During operations, the water and soil quality are predicted to be affected in the TSF, which may reduce the quality of wildlife who incidentally ingest this environmental media. This could subsequently cause adverse health effects to people who consume the wildlife.	TSF	Operations	Adverse											Negligible	Not Significant		
	During closure, the water and sediment quality (in limited areas) are predicted to be affected in the TSF, which may reduce the quality of wildlife who incidentally ingest this environmental media. This could subsequently cause adverse health effects to people who consume the wildlife.	TSF	Closure	Adverse											Negligible	Not Significant		
Effects Assessment Tables from Review Response Report																		
Water Quantity and Quality	TSF seepage effects water quality effects on Streams 7, 8, 10	TSF	Operations and closure	Adverse	Moderate	Seepage mitigation in TSF. Seepage collection. Monitoring. Site specific water quality objectives.	Yes	Increased concentrations of metals and sulphate	Medium	Local	Long term	Continuous	Reversible (long-term)	Neutral	Moderate	Not Significant	Medium	Intermediate
	TSF water flow reduction in Stream 7	TSF	Operations	Adverse	Moderate	50% riparian baseflow maintained. Fish habitat compensation	Yes	Decrease flows by 50% loss of aquatic habitat (HADD)	Low	Local	Medium term	Continuous	Reversible (short-term)	High	Minor	Not Significant	High	High
	TSF water flow reduction in Stream 10	TSF	Operations	Adverse	Minor	Fish habitat compensation	Yes	Decrease flows by 17%. Loss of aquatic habitat (HADD)	Low	Local	Medium term	Continuous	Reversible (short-term)	High	Negligible	Not Significant	High	High
	TSF seepage effects on water quality Morrison Lake	TSF	Operations and closure	Adverse	Minor	Seepage mitigation in TSF.	Yes	Potential increase in cadmium concentration of 7 mg/L	Low	Watershed	Long term	Continuous	Reversible (long-term)	High	Negligible	Not Significant	Low	Intermediate
		TSF	Operations and closure	Adverse	Minor	Seepage mitigation in TSF	Yes	Potential increase in sulphate of 7 mg/L	Low	Watershed	Long term	Continuous	Reversible (long term)	High	Negligible	Not Significant	High	Intermediate
	Discharge of water from TSF after closure	TSF	Closure	Adverse	Negligible to Minor	Dewater closure pond and dilute with surface water	Yes	Potential exceedance of some water quality parameters	Low	Local	Short term	Sporadic	Reversible (short-term)	High	Negligible to Minor	Not Significant	Low	Intermediate
	Discharge of treated pit wall collection water to Morrison Lake	TSF	Operations	Adverse	Minor	Water management to reduce pond water accumulation. Land area discharge of groundwater from pit dewatering	Yes	Potential increase in cadmium and sulphate concentration in Morrison Lake 10% over baseline	Low	Watershed	Short term	Sporadic	Reversible (short-term)	High	Negligible	Not Significant	Low	Intermediate
	Water treatment plant discharge to Morrison Lake	Mine Area	Closure	Adverse	Minor	Placement of PAG rock back into the open pit and segregation of pit wall runoff water.	Yes	Increased cadmium concentrations in Morrison Lake: 2 mg/L steady state and 7 mg/L max.	Low	Watershed	Far Future	Continuous	Reversible (far future)	High	Minor	Not Significant	High	Intermediate
		Mine Area	Closure	Adverse	Minor	Placement of PAG rock back into the open pit and segregation of pit wall runoff water.	Yes	Increased sulphate concentrations in Morrison Lake: 10 mg/L steady state and 25 mg/L maximum	Low	Watershed	Far Future	Continuous	Reversible (far future)	High	Minor	Not Significant	High	Intermediate
	PAG porewater transport to Morrison Lake	Mine Area	Closure	Adverse	Minor	Lime PAG porewater to pH=8	Yes	Increase concentrations of cadmium by 2 mg/L and sulphate 2 mg/L in Morrison Lake	Low	Watershed	Long term	Continuous	Reversible (long-term)	High	Minor	Not Significant	Low to moderate	Intermediate
	Water flow reduction in Morrison Lake/Creek due to large pit water inflows	Mine Area	Operations	Adverse	Minor	Site investigations and potential grouting of major flow	Yes	Reduce annual flow through Morrison Lake/Creek by 1%.	Low	Watershed	Short to medium term	Sporadic to regular	Reversible (short term)	High	Negligible	Not Significant	Low	Intermediate
Terrestrial and Biological Environment	Direct GHG emissions from fossil fuel burning in internal combustion engines	Mine Area	Closure	Adverse	Negligible	Fuel and energy conservation	Yes	GHG will be released. Reclaiming larger area of TSF and areas of the open pit	Low	Local	Short to Medium Term	One Time	Reversible Short Term	Neutral	Negligible	Not Significant	High	Intermediate

Component	Project Description	Project Component(s)	Project Phase(s)	Nature	Extent	Mitigation and Management	Potential for Residual Effects	Description	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Resilience (Context)	Significance	Significance Rating	Probability of Occurrence	Confidence Level
	Ambient Air Quality	Mine Area	Operations & Closure	Negligible	Negligible	Control equipment (i.e., scrubber), regular maintenance, dust suppression (e.g., road watering, vehicle speed restrictions)	Yes	Fugitive emissions	Low	Local	Short to Medium Term	One Time	Reversible Short Term	Neutral	Negligible	Not Significant	High	Intermediate
	Surface runoff and siltation containment	Mine Area	Closure	Adverse	Negligible	Best management practices, environmental monitoring, erosion management plan	Yes	Submersion of waste rock in the open pit	Low	Local	Short Term	Sporadic	Reversible Short Term	High	Negligible	Not Significant	Low	High
	Metal Leaching and Acid Rock Drainage (Sediment Quality)	Mine Area	Closure	Adverse	Low	Excavated materials to be placed back into open pit	Yes	Waste rock dump eliminated, placed back into open pit	Negligible	Local	Short Term	Sporadic	Reversible Long Term	Neutral	Negligible	Not Significant	Low	High
	Surface Runoff and Siltation and Contaminant Loading (Aquatic Resources)	Mine Area	Closure	Adverse	Negligible	Silt fences, best management practices, environmental monitoring, erosion management plan	Yes	Waste rock dump eliminated, placed back into open pit.	Low	Local	Short Term	Sporadic	Reversible Short Term	High	Negligible	Not Significant	Low	High
	Metal Leaching and Acid Rock Drainage (Aquatic Resources)	Mine Area	Closure	Adverse	Major	Excavated materials to be placed back into open pit	Yes	ML/ARD resulting in mortality and sublethal effects to biota. Waste rock dump eliminated, placed back into open pit	Low	Local	Long Term	Sporadic	Reversible Long Term	Neutral	Negligible	Not Significant	Low	Low
	Habitat loss from draining or burial with tailings (Aquatic Resources)	TSF, Mine Area	Closure	Adverse	Major	Reclamation of TSF and areas of the open pit	Yes	Reclamation of 350 ha of habitat in the TSF, including approximately 1.7 km^2 of ponded area, with 67.5 ha of wetland; and, 68 ha of wetland in the open pit	Medium	Local	Medium Term	One Time	Reversible Long Term	Low	Moderate	Not Significant	Low	High
	Loss of fish bearing habitat	TSF, Mine Area	Closure	Adverse	Major	Reclaim TSF, implementation of FHCP	Yes	Rearing and spawning habitat created in off-lake channel habitat	Medium	Landscape / watershed	Long-term	One Time	Reversible Short Term	Neutral	Minor	Not Significant	Medium	High
	Loss of non-fish Bearing habitat	TSF, Mine Area	Closure	Adverse	Major	Reclaim TSF, implementation of FHCP	Yes	Non-fish bearing habitat reclaimed in TSF.	Medium	Local	Long-term	One Time	Reversible Short Term	High	Moderate	Not Significant	High	High
	Navigable Waters	Mine Area	Closure	Neutral	Negligible	Effluent pipe in deepest part of Morrison Lake. Loss of Booker Lake	Yes	N/A	Low	Landscape / watershed	Far Future	Continuous	Irreversible	High	Negligible	Not Significant	Medium	High
	Loss of Wetland Extent and Function	TSF	Closure	Adverse	Major	Construct littoral marsh wetland communities around perimeter of the TSF	Yes	Loss of 26.65 ha blue listed Wb01. Compensated with the creation of 50 ha submergent wetland and 17.5 ha emergent wetland.	High	Landscape / watershed	Far Future	One Time	Reversible Long Term	Low	Moderate	Not Significant	Medium	Intermediate
	Loss of Wetland Extent and Function	Waste Rock Dump	Closure	Adverse	Negligible	Placement of waste rock back into open pit, creation of additional wetland and open pond areas	No											
	Loss of Wetland Extent and Function	Mine Area	Closure	Adverse	Major	Areas lost included in non fish-bearing loss in Fish Habitat Compensation Plan	Yes	Loss of 0.4 ha Ws01 swamp in pit. Compensated with the creation of 68 ha of wetland habitat in open pit.	Medium	Local	Long-term	One Time	Reversible Short Term	Neutral	Minor	Not Significant	Medium	Intermediate
	Terrain, Surficial Materials, Overburden & Soils	Open Pit	Closure	Adverse	Minor	r Backfilling pit with waste rock	Yes	Pit backfilled with waste rock and reclaimed with vegetation around perimeter, and wetlands established within berm	Medium	Local	Medium Term	Continuous	Reversible Short Term	Low	Minor	Not Significant	High	High
	Terrain, Surficial Materials, Overburden & Soils	TSF	Closure	Adverse	Major	Flooding TSF	Yes	Smaller ponded area, reclaimed areas along exposed beaches and on dams	Medium	Local	Medium Term	Continuous	Reversible Short Term	Low	Minor	Not Significant	High	High
	Soil Slope Failure (Terrain Hazard)	TSF	Closure	Adverse	Moderate	Flooding TSF	Yes	Smaller water pond, removing water from dam face	Medium	Local	Long Term	Sporadic	Reversible Short Term	Neutral	Minor	Not Significant	Low	High
	Rock Slope Failure	Open pit	Closure	Neutral	Moderate	Pit backfilled with waste rock	Yes	Pit backfilled reduce height of exposed walls	Low	Local	Far Future	Sporadic	Irreversible	Low	Minor	Not Significant	High	Low
	Habitat Loss or Alteration (Ecosystems & Vegetation)	TSF, Mine Area, Waste Rock Dump	Closure	Adverse	Major	Soil salvage, reclamation of TSF, waste rock dump & perimeter of open pit	Yes	TSF reclaimed with terrestrial areas (65% of TSF area)	Medium	Local	Long Term	One Time	Reversible Long Term	Neutral	Minor	Not Significant	High	High
	Habitat Loss or Alteration of terrestrial ecosystems (for wildlife)	TSF, Mine Area, Waste Rock Dump	Closure	Adverse	Minor	Reclaim disturbed habitat to reflect pre-disturbance values after mine closure.	Yes	Habitat reclaimed in TSF, perimeter of open pit and waste rock dump.	Medium	Regional	Long-term	One Time	Reversible Long Term	Neutral	Minor/ Negligible	Not Significant	Medium	High
	Visual Effect	Waste Rock Dump	Closure	Adverse	Major	Overburden stockpile changed location; Waste Rock Dump removed	Yes	Overburden stockpile moved from Morrison Point to 700 m from Morrison Lake. Waste Rock Dump placed back into open pit	Negligible	Local	Far Future	Continuous	Reversible Short Term	Neutral	Negligible	Not Significant	High	High
	Visual Effect	TSF	Closure	Adverse	Major	Reclamation of TSF with terrestrial and ponded areas	Yes	Smaller pond area, reclamation of terrestrial areas and wetlands	Medium	Local	Far Future	Continuous	Irreversible	Neutral	Minor	Not Significant	High	High
	Noise	Mine Area	Closure	Adverse	Negligible	Site vehicles to comply with manufacturer noise limits; regular maintenance for all vehicles	Yes	Re-handling of waste rock and backfilling open pit	Medium	Landscape	Regular	Regular	Reversible Short Term	High	Minor	Not Significant	High	High
	Noise (Human Health)	Mine Area	Closure	Adverse	Moderate	Site vehicles to comply with manufacturer noise limits; regular maintenance for all vehicles	Yes	Re-handling of waste rock and backfilling open pit and effect to Tukii Hunting Camp	Major	Local	Medium Term	Regular	Reversible Short Term	Low	Moderate	Not Significant	High	High

Legend:
~~Strikethrough~~ - Revision to Effects Rating Based on Changes Documented in the Review Response Report

Air Quality Effects Assessment

Component	Description	Project Components	Project Phase	Nature and Extent	Mitigation and Management	Potential for Adverse Residual Effects	Magnitude	Spatial Extent	Duration of Effect	Frequency	Reversibility of Effects	Resilience (context)	Level of Significance Residual Effect	Probability of Occurrence	Confidence Level
Air Quality	Ambient air quality may be degraded outside the Project property boundary-gaseous and equipment PM emissions (SO2, NO2, CO, PM 2.5, PM 10)	Emissions sources include: Diesel fuel equipment Vehicle operation Open pit Tailings pond and waste rock dumps Access and haul roads	Construction, Operations	Negligible	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Ambient air quality may be degraded outside the Project property boundary-fugitive emissions (PM 2.5, PM 10)	Emissions sources include: Vehicle operation Open pit Tailings pond and waste rock dumps Access and haul roads	Construction	Negligible	n/a	No	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Ambient air quality may be degraded outside the Project property boundary-fugitive emissions (PM 2.5, PM 10)	Emissions sources include: Vehicle operation Open pit Tailings pond and waste rock dumps Access and haul roads	Operations	Moderate	Use of: Control equipment (i.e., scrubber) Regular maintenance Dust suppression mechanisms (road watering, vehicle speed regulations)	Yes	High	Regional	Medium-term	Regular	Reversible Short-term	Neutral	Minor	High	Intermediate

Noise Effects Assessment

	Description	Project Components	Project Phase	Project Activity	Nature and Extent	Mitigation and Management	Potential for Adverse Residual Effects	Magnitude	Geographic extent	Duration	Frequency	Reversibility	Resilience (context)	Significance	Probability of Occurrence	Confidence Level
Noise Effects	Ambient noise may increase outside the Project property boundary	All noise-generating equipment. Significant sources include the open pit, mill site, tailings cyclones, pumps at the fresh water intake line, and traffic along the mine site access and haul roads.	Construction	General construction activities, site preparation, building infrastructure.	BN2: Major when there are occupants *BN1. Negligible	All site vehicles to comply with manufacturer noise limits, all mining equipment to undergo regular maintenance, minimize vegetation clearing surrounding Project footprint where possible to provide additional noise buffer.	Yes No	High	Landscape	Short-term	Regular	Reversible Short-term	Neutral	Major	High	High
	Ambient noise may increase outside the Project property boundary	All noise-generating equipment. Significant sources include the open pit, mill site, tailings cyclones, pumps at the fresh water intake line, and traffic along the mine site access and haul roads.	Operations	General site activities, operation of ventilation systems, ore and waste rock handling, ore crushing, haul truck traffic, general access road traffic, operation of tailings cyclones, fresh water intake pumps, etc	BN2. Major when there are occupants BN1: Moderate	All site vehicles to comply with manufacturer noise limits, all mining equipment to undergo regular maintenance, minimize vegetation clearing surrounding Project footprint where possible to provide additional noise buffer.	Yes' Yes'	High High	Landscape Landscape	Medium-term Medium-term	Regular Regular	Reversible Short-term Reversible Short-term	Neutral Neutral	Major' Moderate'	High High	High High
	Noise from the blast may cause nuisance	Construction and Operations blasting	Construction and Operations	Minor construction blasting for site preparation, blasting for development and operation of open pit mine	BN1: Negligible BN2: Moderate when there are occupants **Baseline Noise Monitoring Stations** BN1: Ookpik Lodge BN2: Tukii Hunting Camp BN3: Open area east of Morrison Lake 1: Also See Section 8.22 (Human Health) and 8.16 (Wildlife)	Blasting to occur only once per day to promote habituation, no night-time blasting	No Yes	High	Landscape	Medium-term	Regular	Reversible Short-term	Neutral	Moderate'	High	High