



STAR-ORION SOUTH DIAMOND PROJECT  
ENVIRONMENTAL IMPACT STATEMENT

**SECTION 8.0**  
**RESIDUAL EFFECTS SUMMARY**



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## 8.0 RESIDUAL EFFECTS SUMMARY

### 8.1 INTRODUCTION

Residual effects are Project effects that remain once mitigation has been applied. Mitigation measures, including management and compensation plans for the Project that will be implemented to address effects, are described in each section.

Results of the assessment of residual effects on VCs from Project related activities following mitigation are discussed in each section. Significance of the residual effects after mitigation is assessed using the significance rating criteria described in Section 6.1.5.5 and listed here for reference in Table 8.1-1. Where specific significance rating criteria were developed for each discipline, they are presented in their respective sections.

**Table 8.1-1: Effects Metrics Used for the Project Residual Effects Assessment**

Biophysical	Socio-Economics
Magnitude	Magnitude
Spatial Extent	Spatial Extent
Duration	Duration
Frequency	Frequency
Reversibility	Level of Confidence/Certainty
Ecological Context	Probability of Effects
Level of Confidence/Certainty	
Probability of Effects	

For the Project, all potential residual impacts determined to be have an effect on the environment are subjected to these eight (biophysical) or six (socio-economic) measures. Other metrics considered in the assessment include direction, cumulative or synergistic consequences, and mitigation measures.

### 8.2 QUANTITATIVE VERSUS QUALITATIVE ASSESSMENT

Assessing the potential impacts of the Project involves evaluating potential changes in a VC. For each, one or more measurable parameters are selected to evaluate the potential effects. Quantifiable parameters are indicators used to determine the level or amount of change to a VC, (e.g., predicted sediment in water discharged from the mine and the potential infusion of income from employment into a community). Qualitative parameters are used as subjective assessments of the state of a VC as a result of project effects (e.g., perception of aesthetic impacts on viewsapes, and the quality of a wilderness experience).

### 8.2.1 Evaluation of Effects Using Established Thresholds

An assessment of the significance of Project-specific effects or cumulative effects requires the identification of ecological thresholds, management objectives or community/societal standards against which the level of an effect can be evaluated. Whenever possible, quantitative thresholds have been used to evaluate significance. Established standards, such as Saskatchewan water quality guidelines, are used where they exist. Other metrics include government regulations, scientific literature, land use plans, and resource management agency goals.

### 8.2.2 Evaluation of Effects without Using Established Thresholds

Thresholds or regional objectives are not available for some VCs. Where established thresholds are not available, professional judgement is used to provide a qualitative classification based on a weight of evidence approach. The approach is based on the Magnitude, Spatial Extent, and Duration of expected change in the VC as a result of the project. Two categories are established:

- not significant; and
- significant.

In general, to be considered to have potential for a significant effect, the residual effect on the VC being assessed must meet one of the following criteria:

- have a moderate magnitude at a regional spatial extent and have a long term or permanent duration;
- have a high magnitude at a local spatial extent and be long term or permanent in duration;
- have a high magnitude at a sub-regional spatial extent and be medium term, long term or permanent in duration; or
- have a high magnitude of any duration at a regional extent.

For biophysical and socio-economic effects, significance is based on magnitude, geographic extent and duration, and where effects on VCs are rated as significant, the frequency, reversibility, ecological context, direction and certainty are used to fully assess significance.

Table 8.2-1 summarizes biophysical environment residual effects and Table 8.2-2 summarizes the human environmental residual effects. Residual effects for each VC are discussed in detail in their respective specific sections in Section 6.

Table 8.2-1: Star Orion-South Diamond Project Biophysical Environment Residual Effects

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
<b>Air Quality</b>												
Operations	Air Quality	1-hr average NO <sub>2</sub> concentration adjacent to fence line	Adverse	Low	Short term	Local	Intermittent	Reversible	Low	High	Moderate	Not significant
<b>Noise</b>												
Construction	Noise Levels	Levels above guidelines	Adverse	Moderate	Short term	Local	Intermittent	Reversible	Low	Moderate	Low	Not significant
Operations	Noise Levels	Some isolated areas with levels above guidelines	Adverse	Low	Long term	Local	Intermittent	Reversible	Low	High	Low	Not significant
<b>Hydrology</b>												
Construction	Caution Creek	Changes in natural drainage channels and flows	Positive	High	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	Caution Creek S		Positive	High	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	UT-2		Neutral	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	101 Ravine		Positive	High	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	West Perimeter Ravine		Neutral	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	West Ravine		Adverse	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	East Ravine		Adverse	High	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	Duke Ravine		Positive	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	FalC Ravine		Neutral	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	Wapiti Ravine		Neutral	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant
	English Creek	Neutral	Low	Short-term	Local	Continuous	Reversible	Low	High	High	Not significant	
	Saskatchewan River	Changes in flows	Positive	Low	Long term	Regional	Continuous	Reversible	Low	High	High	Not significant
Operations	Tributaries	Changes in natural drainage channels and flows	Adverse	High	Long-term	Local	Continuous	Reversible	Moderate	High	High	Significant (in LSA)
	Caution Creek		Positive	High	Long term	Local	Continuous	Reversible	Moderate	High	High	Significant
	Caution Creek S		Positive	High	Long term	Local	Continuous	Reversible	Moderate	High	High	Significant
	UT-2		Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant
	101 Ravine		Positive	High	Long term	Local	Continuous	Reversible	Low	High	High	Significant
	West Perimeter Ravine		Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant
	West Ravine		Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant
	East Ravine		Adverse	High	Long term	Local	Continuous	Not reversible	Moderate	High	High	Significant
	Duke Ravine		Positive	High	Long term	Local	Continuous	Reversible	Moderate	High	High	Significant
	FalC Ravine		Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant
	Wapiti Ravine	Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant	
	English Creek	Neutral	Negligible	Long term	Local	Continuous	Reversible	Low	High	High	Not significant	
	Saskatchewan River	Changes in flows	Positive	Low	Long term	Regional	Continuous	Reversible	Low	High	High	Not significant
Closure	Site Tributaries	Changes in natural drainage channels and flows	Adverse	Low	Long term	Local	Continuous	Not applicable	Low	High	High	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
	Saskatchewan River	Re-establishment of background flows	Neutral							High		Not significant
<b>Hydrogeology</b>												
Construction / Operation	Water quantity - dewatering	Well interference	Adverse	Low	Long term	Regional	Intermittent	Reversible	Low	High	High	Not Significant
		Year round spring discharge	Adverse	Low	Long term	Regional	Intermittent	Reversible	Low	Medium	Medium	Not Significant
	Water quality	Infiltration of brackish ground water from PKC	Adverse	Low	Long term	Local	Declining	Reversible	Low	High	High	Not significant
	Water quality and quantity –aquitard removal	Residual drawdown	Adverse	Low	Long term	Local	Continuous	Not reversible	Low	High	High	Not significant
		Creation of brackish springs	Adverse	Low	Long term	Local	Continuous	Not reversible	Low	Moderate to High	Moderate	Not significant
Closure	Saskatchewan R water quality	Slightly brackish Star pit water discharge through shallow aquifer	Adverse	Low	Long-term	Local	Continuous	Not reversible	Low	Moderate	Moderate	Not significant
<b>Navigable Waters</b>												
Construction	Saskatchewan River	Interference with navigation in the Saskatchewan River from cofferdam	Adverse	Low	Short term	Local	Continuous	Reversible	Low	High	High	Not significant
<b>Soils &amp; Terrain</b>												
Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
<b>Soils &amp; Terrain</b>												
Construction, operations	Terrain Distribution and Topography	Surficial material distribution	Neutral							High		Not significant
		Topography	Neutral							High		Not significant
		Loss of Upland Terrain	Adverse	Low	Long term	Local	Intermittent	Not reversible	Low	High	High	Not significant
		Soil distribution / cover	Adverse	Low	Long term	Local	Intermittent	Not reversible	Low	High	High	Not significant
		Construction, operations, closure	Terrain stability	Adverse	Low	Short term	Local	Intermittent	Reversible	Low	Low	Unknown
Construction,	Soil Quality	Admixing	Neutral							High		Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
operations, closure		Compaction	Adverse	Low	Short term	Local	Intermittent	Reversible	Low	Moderate	High	Not significant
		Contamination – dust	Adverse	Low	Long term	Local	Intermittent	Reversible	Low	Low	Unknown	Not significant
Operations		Soil acidification	Neutral							High		Not significant
Construction, operations		Moisture status change	Adverse and Positive	Low - Moderate	Long term	Local	Single Occurrence	Reversible	Low	Low	Unknown	Not significant
		Reclamation soil quality	Neutral							High		Not significant
Construction, operations, closure		Overall soil quality	Adverse to Positive	Low to Moderate	Short term to long term	Local	Single occurrence to continuous	Reversible	Low	Low to high	Unknown to high	Not significant
Construction, operations, closure	Soil Quantity	Water erosion	Adverse	Low	Medium term (Seasonal)	Local	Intermittent	Reversible	Low	Moderate	High	Not significant
		Wind Erosion	Adverse	Low	Medium term (Seasonal)	Local	Intermittent	Reversible	Low	Moderate	High	Not significant
Construction, operations	Land Capability for Forestry	Change	Neutral							High		Not significant
Construction, operations	Soil Capability for Agriculture	Change	Neutral							High		Not significant
Construction, operations	Unique Soils and Terrain	Loss	Neutral							High		Not significant
<b>Surface Water Quality</b>												
<b>Construction</b>	Water quality in site tributaries	Suspended sediment export to site tributaries	Adverse	Low	Medium term	Local	Continuous	Reversible	Low	High	High	Not significant
<b>Construction</b>	Water Quality in the Saskatchewan River	Sediment Export from the local creeks to the Saskatchewan River	Adverse	Low	Medium term	Local	Continuous	Reversible	Low	High	High	Not significant
<b>Construction</b>	Sediment Quality in site tributaries	Depositions and sediment Quality in site tributaries	Adverse	Low - moderate	Long term	Local	Continuous	Partly reversible at reclamation	Moderate	Low – moderate	High	Not significant
<b>Construction</b>	Sediment Quality in Saskatchewan River	Deposition and sediment Quality in the Saskatchewan River	Adverse	Low - moderate	Long term	Local	Continuous	Partly reversible at reclamation	Moderate	Low – moderate	High	Not significant
<b>Operations, Closure</b>	Water quality in site tributaries	reduction of water quality in tributaries due to runoff from overburden and coarse kimbelite storage area	Adverse	Low	Long term	Local	Continuous	Reversible	Moderate	High	Low - moderate	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
Operations	Water quality in site tributaries	reduction in water quality of tributaries due to dust fall and seepage	Adverse	Low	medium term	Local	Continuous	Reversible	Moderate	Low – moderate	Low - moderate	Not significant
Operations	Water quality in site tributaries	PKCF seepage to Duke Ravine, English and Wapiti creeks	Adverse	Low	Medium-term	Local	Continuous	Partly reversible at reclamation	Moderate	High	High	Not significant
Operations	Water quality in the Saskatchewan River	Deep and shallow groundwater dewatering discharge may cause reduction in Saskatchewan River water quality	Adverse	Low	medium term	Local	Continuous	Reversible	Moderate	High	High	Not significant
Operations	Sediment Quality in the Saskatchewan River	Effluent discharge may cause reduction in sediment quality in Saskatchewan River	Adverse	Low	medium term	Local	Continuous	Partly reversible at reclamation	Moderate	Moderate	Moderate	Not significant
Post closure	Water Quality in Star Pit Lake	A mix of water from deep and surficial groundwater, surface runoff will infill the pit contained process water from Orion South mining	Adverse	Low	Long term	Local	Continuous	Not reversible	Moderate	Moderate	Low - moderate	Not significant
Post closure	Water Quality in Orion South Pit Lake	A mix of water from deep and surficial groundwater, surface runoff will infill the pit	Adverse	Low	Long term	Local	Continuous	Not reversible	Moderate	Moderate	Low - moderate	Not significant
Post closure	Water Quality in the Saskatchewan River	Overflow from Star Pit may cause reduction in Saskatchewan River water quality	Adverse	Low	Long term	Local	Continuous	Not reversible	Moderate	Moderate	Low - moderate	Not significant
Fisheries and Aquatic Resources												



Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
Construction and Operations	Caution Creek	Increase in mean annual discharge	Positive	High	Local	Long-term	Intermittent	Yes	Low	Medium	Unknown	Not Significant
Operations and Closure		Changes in water quality	Adverse	Low	Local	Long-term	Intermittent	Yes	Low	Medium	Low	Not Significant
Construction and Operations	101 Ravine	Increase in mean annual discharge	Positive	High	Local	Long-term	Intermittent	Yes	Low	Medium	Unknown	Not Significant
Operations and Closure		Changes in water quality	Adverse	Low	Local	Long-term	Intermittent	Yes	Low	Medium	Low	Not Significant
Construction, Operations, Closure	West Ravine	Direct loss	Adverse	High	Local	Long-term	Continuous	No	High	High	Unknown	Significant (in LSA only)
Construction and Operations		Decrease in mean annual discharge	Adverse	High	Local	Long-term	Continuous	Yes	High	High	Unknown	Significant (in LSA only)
Operations and Closure		Changes in water quality	Neutral	Low	Local	Long-term	Continuous	Yes	Low	Medium	Low	Not Significant
Construction, Operations, Closure	East Ravine	Direct loss	Adverse	High	Local	Long-term	Continuous	No	High	High	High	Significant (in LSA only)
Construction and Operations		Decrease in mean annual discharge	Adverse	High	Local	Long-term	Continuous	Yes	High	High	High	Significant (in LSA only)
Operations and Closure		Changes in water quality	Neutral	Low	Local	Long-term	Continuous	Yes	Low	Medium	Low	Not Significant
Construction and Operations	Duke Ravine	Increase in mean annual discharge	Adverse	High	Local	Long-term	Continuous	Yes	High	Medium	High	Significant (in LSA only)
Operations and Closure		Changes in water quality	Adverse	High	Local	Long-term	Continuous	Yes	High	Medium	High	Significant (in LSA only)
Construction and Operations	English Creek	Decrease in mean annual discharge	Adverse	Low	Local	Long-term	Continuous	Yes	Low	High	Low	Not Significant
Operations and Closure		Changes in water quality	Neutral	Low	Local	Long-term	Continuous	Yes	Low	Medium	Low	Not Significant
Operations and Post-Closure	Stream F	Decrease in mean annual discharge	Adverse	High	Local	Long-term	Continuous	Yes	High	Low	Unknown	Significant
Operations and Post-Closure	Peonan Creek	Decrease in mean annual discharge	Adverse	Low	Local	Long-term	Continuous	Yes	High	Low	Unknown	Not Significant
Construction, Operations, and Closure	Saskatchewan River	Water discharge outfall structure.	Adverse	Low	Local	Long-term	Continuous	Yes	Low	High	Low	Not Significant



Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
Construction and Operations		Increase in mean annual discharge.	Neutral	Low	Local	Long-term	Intermittent	Yes	Low	High	Low	Not Significant
Operations and Closure		Changes in water quality	Adverse	Low	Local	Long-term	Continuous	Yes	Low	Medium	Unknown	Not Significant
<b>Vegetation</b>												
Construction & operation	Upland vegetation	Clearing	Adverse	High	Long term	Local	Continuous	Reversible	High	Moderate	High	Not Significant
Construction & operation		Clearing	Adverse	Moderate	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Local	Continuous	Reversible	High	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Construction & operation	Wetland vegetation	Clearing	Adverse	High	Long term	Local	Continuous	Reversible	High	Moderate	High	Not Significant
Construction & operation		Clearing	Adverse	Moderate	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Local	Continuous	Reversible	High	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Construction & operation	"Other" classes	Clearing	Adverse	High	Short to Long term	Local	Continuous	Reversible	Low	High	High	Not Significant
Construction & operation		Clearing	Adverse	Moderate	Short to Long term	Regional	Continuous	Reversible	Low	High	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Short to Long term	Local	Continuous	Reversible	Low	High	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Short to Long term	Regional	Continuous	Reversible	Low	High	High	Not Significant
Construction & operation	Uncommon vegetation	Clearing	Adverse	Moderate	Long term	Local	Continuous	Reversible	Moderate	High	High	Not Significant
Construction & operation		Clearing	Adverse	Low	Long term	Regional	Continuous	Reversible	Moderate	High	High	Not significant
Closure & post closure		Clearing	Adverse	Moderate	Long term	Local	Continuous	Reversible	Moderate	High	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Regional	Continuous	Reversible	Moderate	High	High	Not significant
Construction & operation	Area of sensitive vegetation types	Dust deposition	Adverse	Moderate	Long term	Local	Intermittent	Reversible	Low	Moderate	High	Not significant
Construction & operation		Dust deposition	n/a	n/a	n/a	Regional	n/a	n/a	n/a	n/a	n/a	n/a
Closure & post closure		Dust deposition	Adverse	Low	Long term	Local	Intermittent	Reversible	Low	Moderate	High	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
Closure & post closure		Dust deposition	n/a	n/a	n/a	Regional	n/a	n/a	n/a	n/a	n/a	n/a
Construction & operation	Area of wetland vegetation types	Water drawdown	Adverse	Moderate	Long term	Local	Continuous	Reversible	Moderate	Moderate	High	Not significant
Construction & operation		Water drawdown	Adverse	Moderate	Long term	Regional	Continuous	Reversible	Moderate	Low	Moderate	Not significant
Closure & post closure		Water drawdown	Adverse	Moderate	Long term	Local	Continuous	Reversible	Moderate	Moderate	High	Not significant
Closure & post closure		Water drawdown	Adverse	Moderate	Long term	Regional	Continuous	Reversible	Moderate	Low	Moderate	Not significant
Construction & operation	Native vegetation	Proliferation of weed species	Adverse	Low	Long term	Local/regional	Intermittent	Reversible	High	Moderate	Unknown	Not Significant
Closure & post closure		Proliferation of weed species	Adverse	Low	Long term	Local/regional	Intermittent	Reversible	High	Moderate	Unknown	Not Significant
Construction & operation	Old growth forest	Clearing	Adverse	Moderate	Long term	Local	Periodic	Reversible	Moderate	Moderate	High	Not Significant
Construction & operation		Clearing	Adverse	Low	Long term	Regional	Periodic	Reversible	Moderate	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Local	Periodic	Reversible	Moderate	Moderate	High	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Regional	Periodic	Reversible	Moderate	Moderate	High	Not Significant
Construction & operation	Riparian habitat	Clearing	Adverse	Low	Long term	Local	Continuous	Reversible	Moderate	Low	Moderate	Not Significant
Construction & operation		Clearing	Adverse	Moderate	Long term	Regional	Continuous	Reversible	Moderate	Low	Moderate	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Local	Continuous	Reversible	Moderate	Low	Moderate	Not Significant
Closure & post closure		Clearing	Adverse	Low	Long term	Regional	Continuous	Reversible	Moderate	Low	Moderate	Not Significant
Construction & operation	Riparian Management Areas	Clearing		n/a	n/a	Local/regional	n/a	n/a	n/a	n/a	n/a	n/a
Closure & post closure		Clearing		n/a	n/a	Local/regional	n/a	n/a	n/a	n/a	n/a	n/a
Construction & operation	Rare Plant Potential	Clearing		Moderate	Long term	Local/regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Closure & post closure		Clearing		Low	Long term	Local/regional	Continuous	Reversible	Low	Moderate	High	Not Significant
Construction & operation	Rare plant species	Clearing		Moderate	Long term	Regional	Continuous	Not-reversible	Moderate	Moderate	High	Not Significant
Closure & post closure		Clearing		Low	Long term	Regional	Continuous	Not-reversible	Moderate	Moderate	High	Not Significant
Construction & operation	Traditional use plant potential	Clearing		High	Long term	Local	Continuous	Reversible	Low	Moderate	High	Not Significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance	
Construction & operation		Clearing		Low	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant	
Closure & post closure		Clearing		Low	Long term	Local	Continuous	Reversible	Low	Moderate	High	Not Significant	
Closure & post closure		Clearing		Low	Long term	Regional	Continuous	Reversible	Low	Moderate	High	Not Significant	
<b>Wildlife</b>													
Construction	Moose	Loss/alteration of habitat from project footprint	Adverse	Low-moderate	Short term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Operations			Adverse	Low-moderate	Long term	Local	Intermittent	Partly reversible	Negligible-low	High	High	Not significant	
Closure			Neutral-positive	Negligible-low	Long term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Sensory disturbance	Adverse	Low-moderate	Short term	Local	Continuous	Reversible	Low	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Continuous	Reversible	Negligible-low	High	High	Not significant	
Closure			Neutral	Negligible-low	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Movement disruption	Adverse	Low-moderate	Short term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Closure			Neutral-positive	Negligible-low	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Mortality risk	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible-low	High	Low	Not significant	
Operations			Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Black bear	Loss/alteration of habitat from project footprint	Adverse	Low-moderate	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant
Operations				Adverse	Low	Long term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction	Sensory disturbance		Adverse	Low-moderate	Short term	Local	Continuous	Reversible	Negligible-low	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Intermittent	Reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Movement disruption		Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Mortality risk		Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Operations			Adverse	Negligible	Long term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Beaver, aquatic / semiaquatic furbearers		Loss/alteration of habitat from project footprint	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant
Operations				Neutral-adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Not applicable	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction		Sensory disturbance	Adverse	Low	Short term	Local	Continuous	Reversible	Negligible-low	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Intermittent	Reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Movement disruption	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Mortality risk	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible-low	High	Low	Not significant	

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance	
Operations	Red squirrel / other terrestrial furbearers	Loss/alteration of habitat from project footprint	Adverse	Negligible	Long term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant	
Operations		Sensory disturbance	Adverse-neutral	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant	
Operations		Movement disruption	Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Negligible-low	Short term	Local	Continuous	Not reversible	Negligible-low	High	High	Not significant	
Operations		Mortality risk	Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Negligible	Short term	Local	Continuous	Not reversible	Low	High	Low	Not significant	
Operations		Waterfowl	Loss/alteration of habitat from project footprint	Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible-low	High	Low	Not significant
Construction				Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations	Sensory disturbance		Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations	Movement disruption		Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Operations	Mortality risk		Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction			Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Operations	Bald eagle / other accipiter species		Loss/alteration of habitat from project footprint	Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-adverse	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Operations		Sensory disturbance	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Closure			Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Construction			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Operations		Movement disruption	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Closure			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Construction			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Operations		Mortality risk	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Closure			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	Low	Not significant	
Construction			Neutral-positive	Negligible	Long term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Operations		Great Gray Owl and	Loss/alteration	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance	
Operations	sympatric owl species	of habitat from project footprint	Neutral-adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Sensory disturbance	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Movement disruption	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure		Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant		
Construction		Mortality risk	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Rare	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Olive-sided flycatcher and other migrants	Loss/alteration of habitat from project footprint	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations	Neutral-adverse			Negligible	Long term	Local	Intermittent-rare	Not reversible	Negligible	High	High	Not significant	
Closure	Neutral-positive			Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Sensory disturbance		Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations			Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Movement disruption		Adverse	Negligible	Short term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Low	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Low	High	Low	Not significant	
Construction	Mortality risk		Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Low	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction	Yellow-rumped warbler and forest interior migrant birds		Loss/alteration of habitat from project footprint	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations				Adverse-Neutral	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction			Sensory disturbance	Adverse	Low	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations				Adverse	Low	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction		Movement disruption	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Low	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Low	High	High	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Low	High	Low	Not significant	
Construction		Mortality risk	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Low	High	Low	Not significant	
Closure			Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Low	High	Low	Not significant	
Construction		Wildlife species at risk	Loss/alteration of habitat from project footprint	Neutral	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations				Neutral-positive	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance	
Construction		Sensory disturbance	Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant	
Operations			Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant	
Closure			Neutral	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant	
Construction		Movement disruption		Adverse-Neutral	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	High	Not significant
Operations				Neutral-positive	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	High	Not significant
Closure				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
Construction		Mortality risk		Adverse	Negligible	Short term	Local	Continuous	Not reversible	Negligible	High	Low	Not significant
Operations				Adverse	Negligible	Long term	Local	Intermittent	Not reversible	Negligible	High	Low	Not significant
				Neutral-positive	Negligible	Short term	Local	Rare	Reversible	Negligible	High	Low	Not significant
<b>Biodiversity</b>													
Construction, Operations	LVC1. Landscape Composition	Disturbance	Adverse	High	Long-term	Regional	Continuous	Partial	Low	Moderate	Low	Not Significant	
Closure, Post Closure			Adverse	Moderate	Long-term	Regional	Continuous	Partial	Low	Moderate	Low	Not Significant	
Construction, Operations	LVC2. Landscape Intactness	Disturbance	Adverse	High	Long-term	Regional	Continuous	Full	High	Moderate	High	Not Significant	
Closure, Post Closure			Positive	Moderate (positive)	Long-term	Regional	Continuous	Full	High	Moderate	High	Not Significant	
Construction, Operations	LVC3. Landscape Spatial Structure	Disturbance	Adverse	Moderate	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant	
Closure, Post Closure			Positive	High	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant	
Construction, Operations	HVC1. Habitat Composition	Disturbance	Adverse	Moderate to High	Long-term	Regional	Continuous	Partial	High	Moderate	High	Not Significant	
Closure, Post Closure			Positive	High	Long-term	Regional	Continuous	Partial	High	Moderate	High	Not Significant	
Construction, Operations	HVC2. Forest Structure	Disturbance	Adverse	Low	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant	
Closure, Post Closure			Positive	High	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant	
Construction, Operations	HVC3. Habitat Intactness	Disturbance	Adverse	Moderate	Long-term	Regional	Continuous	Full	High	Moderate	High	Not Significant	
Closure, Post Closure			Positive	Moderate	Long-term	Regional	Continuous	Full	High	Moderate	High	Not Significant	
Construction, Operations	SVC1. Species at Risk	Disturbance	Adverse	Low	Long-term	Regional	Continuous	Full	Moderate	Moderate	High	Not Significant	
Closure, Post Closure			Positive	Low	Long-term	Regional	Continuous	Full	Moderate	Moderate	High	Not Significant	
Construction, Operations	SVC2. Species Richness	Disturbance	Adverse	Moderate	Long-term	Regional	Continuous	Full	Moderate	Moderate	High	Not Significant	
Closure, Post Closure			Adverse	Low	Long-term	Regional	Continuous	Full	Moderate	Moderate	High	Not Significant	
Construction, Operations	SVC3. Taxonomic Groups of Interest	Disturbance	Adverse	Moderate	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant	



Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Reversibility	Ecological Context	Level of Confidence	Probability	Significance
Closure, Post Closure			Adverse	Low	Long-term	Regional	Continuous	Full	Low	Moderate	Low	Not Significant
Construction, Operations	SVC4. Native Species Diversity	Disturbance	Adverse	Moderate	Long-term	Regional	Continuous	Partial	Moderate	Moderate	High	Not Significant
Closure, Post Closure			Adverse	Low	Long-term	Regional	Continuous	Partial	Moderate	Moderate	High	Not Significant
Environmental Health												
	Effect on Aquatic Resources in Saskatchewan River	Discharge Water	Adverse	Moderate	Long-Term	Local	Continuous	Reversible	Moderate	Moderate	Likely	Not Significant



Table 8.2-2: Star Orion-South Diamond Project Human Environment Residual Effects

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Level of Confidence	Probability	Significance
	Socio-economic									
Construction										
	Provincial Economy	Capital spending yielding economic growth	Positive	High	Short term	Provincial	Continuous	High	High	Significant
	Saskatchewan Government Revenues	Taxes on earnings and production	Positive	High	Short term	Provincial	Continuous	High	High	Significant
	Regional Employment & Income	Direct & indirect employment	Positive	High	Short term	Regional	Continuous	High	High	Significant
	Regional Demographics	Growth in population through in-migration	Positive	Low	Short term	Regional	Intermittent	High	Unknown	Significant
	Transportation - Traffic	Increased road traffic	Adverse	Moderate	Short term	Local	Intermittent	High	High	Not significant
	Transportation – Infrastructure	Access road upgrade	Positive	Low	Long term	Local	Continuous	High	High	Not significant
	Transportation – rail	Improved capacity of Choiceland rail station	Positive	Moderate	Long term	Local	Continuous	High	High	Significant
	Housing	Growth of market demand	Positive	Low	Short term	Local	Continuous	Moderate	Unknown	Unknown
	Regional Services	Increased pressure	Adverse	Low	Short term	Regional	Continuous	Moderate	Unknown	Not significant
	Regional Services	Infrastructure	Neutral to positive	Low	Long term	Local	Continuous	Moderate	Unknown	Unknown
Operations										
	Provincial Economy	Capital spending yielding economic growth	Positive	Moderate	Long term	Provincial	Continuous	High	High	Significant
	Saskatchewan Government Revenues	Taxes on earnings and production	Positive	High	Long term	Provincial	Continuous	High	High	Significant
	Regional Employment & Income	Direct & indirect employment	Positive	High	Long term	Regional	Continuous	High	High	Significant
	Regional Demographics	Growth in population through in-migration	Positive	Low	Long term	Regional	Intermittent	High	High	Significant
	Transportation – Traffic	Increased road traffic	Adverse	Moderate	Long-term	Local	Continuous	High	High	Not significant
	Housing	Growth of market demand	Positive	Moderate	Long term	Regional	Continuous	Moderate	Unknown	Unknown
	Regional Services	Increased pressure	Adverse	Low	Long term	Regional	Continuous	Moderate	Unknown	Not significant
	Regional Services	Infrastructure	Adverse	Low	Long term	Regional	Continuous	Moderate	Unknown	Not significant
Closure and Decommissioning										
	Provincial Economy during Decommissioning	Capital spending yielding economic growth	Positive	Low	Short term	Provincial	Continuous	High	High	Significant
	Provincial Economy after Closure	Cessation of capital spending	Adverse	Low to moderate	Short term	Local	Continuous	High	High	Not significant
	Saskatchewan Government Revenues during Decommissioning	Provincial tax revenues	Positive	Low	Short term	Provincial	Continuous	High	High	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Level of Confidence	Probability	Significance
	Saskatchewan Government Revenues after Closure	Cessation of tax revenues	Adverse	High	Long term	Provincial	Continuous	High	High	Significant
	Regional Employment & Income during Decommissioning	Direct & indirect employment	Positive	Moderate	Short term	Regional	Continuous	High	High	Significant
	Regional Employment & Income after Closure	Direct & indirect employment	Adverse	Low to moderate	Long term	Local	Continuous	High	High	Not significant
	Regional Demographics	Population decline resulting from job loss	Adverse	Low	Long term	Regional	Continuous	High	High	Not significant
	Transportation – Traffic	Decreased road traffic	Positive	Moderate	Long term	Local	Continuous	High	High	Not significant
	Housing	Contraction of housing market	Adverse	Low	Long term	Regional	Intermittent	Moderate	Unknown	Not significant
	Regional Services	Decreased pressure	Positive	Low	Long term	Regional	Continuous	High	High	Not significant
	Regional Infrastructure	Decreased pressure	Positive	Low	Long term	Regional	Continuous	High	High	Not significant
	Non-Traditional Land Use									
Construction, Operations, Closure	Land Use Plans and Policies		Neutral	Not applicable	Not applicable	Regional	Not applicable	Low	Unknown	Unknown
Construction, Operations, Closure	Disturbance		Adverse	Low	Long term	Regional	Continuous	High	High	Not significant
Construction, Operations, Closure	Access		Adverse and positive	Low	Long term	Regional	Continuous	High	High	Not significant
Construction, Operations, Closure	Exploration		Neutral					High		Not significant
Construction, Operations	Forestry		Adverse	Low	Long term	Local	Continuous	High	High	Not significant
Closure	Forestry		Positive	Low	Long term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Non-consumptive recreation		Adverse	Low	Short term	Regional	Continuous	High	High	Not significant
Construction, Operations, Closure	Non-consumptive recreation	Improved access	Adverse and positive	Low	Long term	Regional	Continuous	Low	Unknown	Not significant
Construction, Operations	Hunting	Loss of land base	Adverse	Low	Long term	Local	Continuous	High	High	Not significant
Construction, Operations	Hunting	Improved access	Positive	Low	Long term	Local	Continuous	High	High	Not significant
Construction, Operations	Fishing		Adverse	Low	Long term	Local	Continuous	Unknown	Unknown	Not significant
Construction, Operations	Trapping	Loss of land base	Adverse	Moderate	Long term	Local	Continuous	High	High	Not significant
	Traditional Land Use									

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Level of Confidence	Probability	Significance
Construction, Operations, Closure	Hunting (JSCN)	Biophysical, economic, and socio-cultural	Positive and Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Gathering (JSCN)	Biophysical, economic, and socio-cultural	Positive and Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Fishing (JSCN)	Biophysical, economic, and socio-cultural	Adverse	Low	Long-term	Local	Continuous	High	Low	Not significant
Construction, Operations, Closure	Cultural sites (JSCN)	Biophysical, economic, and socio-cultural	Adverse	Low or Moderate	Long-term	Local	Continuous	Low	High	Significant (LSA) and not significant (RSA)
Construction, Operations, Closure	Conditions for use (JSCN)	Biophysical, economic, and socio-cultural	Positive and Adverse	Low	Long-term	Local	Continuous	Low	High	Not significant
Construction, Operations, Closure	Hunting (Métis)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Fishing (Métis)	Changes to access and resources	Adverse	Negligible	Long-term	Local	Continuous	High	Low	Not significant
Construction, Operations, Closure	Sites (Métis)	Changes to access or sites	Adverse	Negligible	Long-term	Local	Continuous	Low	Unknown	Not significant
Construction, Operations, Closure	Gathering (Métis)	Changes to access and resources	Adverse	Low	Long-term	Regional	Continuous	High	High	Not significant
Construction, Operations, Closure	Hunting (MFN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Fishing (MFN)	Changes to access and resources	Adverse	Negligible	Long-term	Local	Continuous	High	Low	Not significant
Construction, Operations, Closure	Gathering (MFN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Subsistence (WDN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Habitation (WDN)	Changes to access and sites	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Transportation (WDN)	Changes to access and trails	Adverse and Positive	Low	Long-term	Local and regional	Continuous	High	High	Not significant
Construction, Operations, Closure	Cultural and Spiritual (WDN)	Changes to access and sites	Adverse	Low/Unknown	Long-term	Local	Continuous	Low	Unknown	Not significant
Construction, Operations, Closure	Indigenous Landscape (WDN)	Changes to environment	Adverse	Low	Long-term	Local	Continuous	High	High	Not significant
Construction, Operations, Closure	Hunting (REC and SLFN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	Moderate	Unknown	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Level of Confidence	Probability	Significance
Closure										
Construction, Operations, Closure	Gathering (REC and SLFN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	Moderate	Unknown	Not significant
Construction, Operations, Closure	Fishing (REC and SLFN)	Changes to access and resources	Adverse	Low	Long-term	Local	Continuous	Moderate	Low	Not significant
	Human Health									
Construction	Traffic (safety)	Increase in exposure to traffic on local highways for commuting Project workers, other road users and pedestrians	Adverse	Moderate	Short term	Regional	Continuous	Low	Moderate	Not significant
Construction	Air quality	Increase in exposure to air contaminant concentrations for temporary or seasonal land users in close proximity to the fence line	Adverse	Low	Short term	Local	Continuous	Moderate	Low	Not significant
Construction	Country foods	Limited increase in exposure to contaminant concentrations in country foods	Adverse	Low	Long term	Regional	Continuous	Low	Low	Not significant
Construction	Drinking water quality	No detectable increase in metal or other exposures in drinking water for local water consumers of surface water sourced drinking water	Adverse	Low	Long term	Regional	Continuous	Low	Low	Not significant
Construction	Recreational water quality	No pathway	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Construction	Noise	Increase in noise exposure for temporary or seasonal land users in close proximity to the Project fence line	Adverse	Low	Short term	Local	Intermittent and Continuous	Moderate	Low	Not significant
Construction	Worker health	Change in occupational risk factors or hazards for workers	Adverse	Moderate	Short term	Local	Intermittent and Continuous	Moderate	Moderate	Not significant
Operations	Traffic	Increase in exposure to traffic on local highways for	Adverse	Moderate	Long term	Regional	Continuous	Low	Moderate	Not significant

Project Phase	VC	Nature of Effect	Direction	Magnitude	Duration	Geographic Extent	Frequency	Level of Confidence	Probability	Significance
		commuting Project workers, other road users and pedestrians								
Operations	Air quality	Increase in exposure to air contaminant concentrations for temporary or seasonal land users in close proximity to the fence line	Adverse	Low	Long term	Local	Continuous	Moderate	Low	Not significant
Operations	Country foods	Limited increase in exposure to contaminant concentrations in country foods	Adverse	Low	Long term	Regional	Continuous	Low	Low	Not significant
Operations	Drinking water quality	No detectable increase in metal or other exposures in drinking water for local water consumers of surface water sourced drinking water	Adverse	Low	Long term	Regional	Continuous	Low	Low	Not significant
Operations	Recreational water quality	Increase in potential for exposure to bacteria	Adverse	Low	Long term	Low (temporary or seasonal land users in Saskatchewan River)	Continuous	Low	Low	Not significant
Operations	Noise	Increase in noise exposure for temporary or seasonal land users in close proximity to the Project fence line	Adverse	Low	Long term	Local	Intermittent and Continuous	Moderate	Low	Not significant
Operations	Worker health	Change in occupational risk factors or hazards for workers	Adverse	Moderate	Long term	Local	Intermittent and Continuous	Moderate	Moderate	Not significant