



Great Bear

Great Bear Gold Project Impact Statement

Section 20: Environmental and Social Management, and Follow-up Program

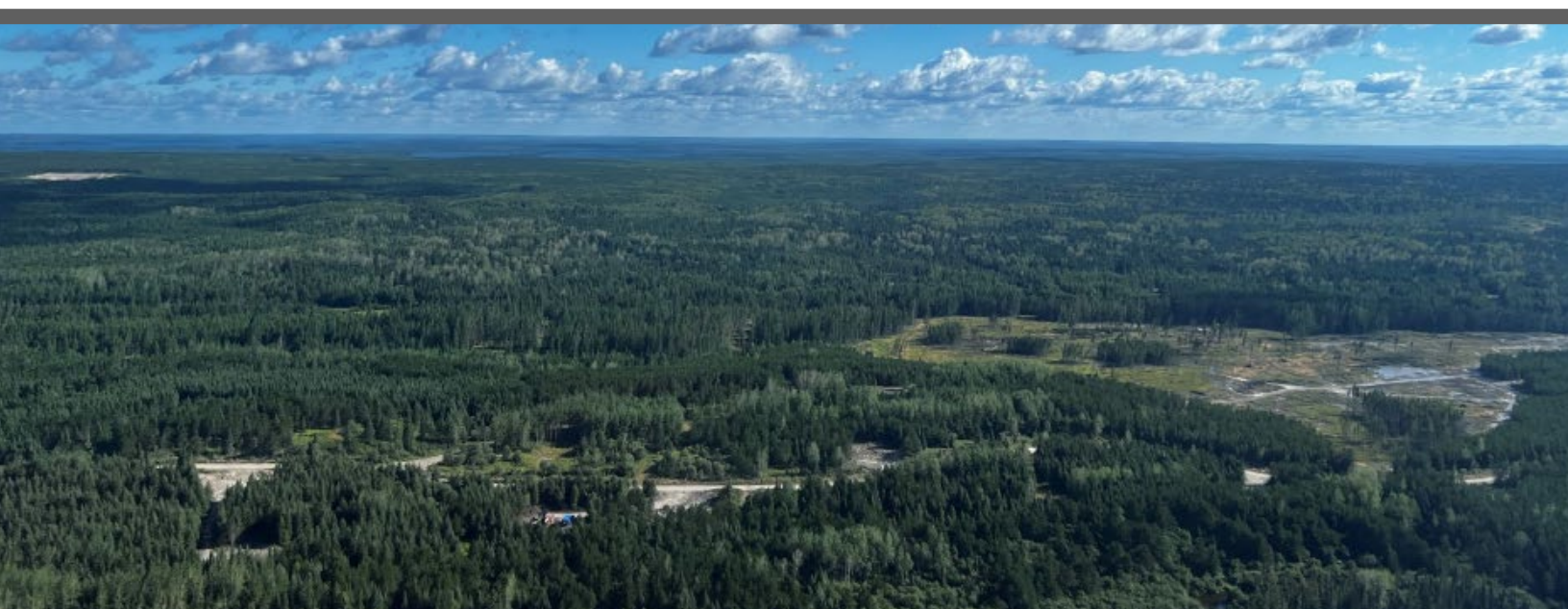


Table of Contents

20.0	Environmental and Social Management, and Follow-up Program	20-1
20.1	Environmental Management.....	20-1
20.1.1	Environmental Management System.....	20-1
20.1.2	Social Performance Management System	20-1
20.1.3	Proposed Environmental and Social Management Plans	20-1
20.1.4	Alignment with Federal Jurisdiction.....	20-5
20.2	Follow-up Program for Federal Valued Components	20-7
20.2.1	Introduction and Context	20-7
20.2.2	Preliminary Follow-up Program for fVCs	20-7
20.3	Follow-up Program for Pathway Valued Components.....	20-21
20.4	Follow-up Program for Cumulative Effects	20-29
20.5	Reporting	20-30
20.6	Adaptive Management Framework.....	20-31
20.7	Issues Tracking and Grievance Procedure.....	20-32
20.8	References	20-34

Tables

Table 20.1-1:	Environmental and Social Management Plans, and Potential Linkages to Valued Components	20-6
Table 20.2-1:	Uncertainties in the Assessment of Effects to fVCs	20-8
Table 20.2-2:	Follow-up Program for Federal Valued Component: Fish and Fish Habitat ...	20-10
Table 20.2-3:	Follow-up Program for Federal Valued Component: Migratory Birds	20-13
Table 20.2-4:	Follow-up Program for Federal Valued Component: Indigenous [OB].....	20-17
Table 20.3-1:	Summary of Effects Assessment for pVCs.....	20-23
Table 20.3-2:	Screening of pVCs for a Dedicated Follow-up Program.....	20-25
Table 20.3-3:	Surrogate Follow-up Information for pVCs	20-26

Figures

There are no figures for this section.

Acronyms and Abbreviations

ANA	Asubpeeschoseewagong Netum Anishinabek
ARU	Autonomous recording unit
C	Construction phase (as used in bullets)
CI	Closure phase (as used in bullets)
DFO	Fisheries and Oceans Canada
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
EEM	Environmental Effects Monitoring
EMS	Environmental Management System
EPA	Environmental Protection Act
ESA	<i>Endangered Species Act</i>
FHOCP	Fish Habitat Offsetting and Compensation Plan
FUP	Follow-up program
fVC	Federal valued component
FWCA	<i>Fish and Wildlife Conservation Act</i>
Great Bear Resources	Great Bear Resources Ltd.
Kinross	Kinross Gold Corp.
LRIA	<i>Lakes and Rivers Improvement Act</i>
LSA	Local study area
LSFN	Lac Seul First Nation
MBCA	<i>Migratory Birds Convention Act</i>
MDMER	Metal and Diamond Mine Effluent Regulations
MECP	Ministry of the Environment, Conservation and Parks
ML / ARD	Metal leaching / acid rock drainage
NWOMC	Northwestern Ontario Métis Community
NPRI	National Pollutant Release Inventory Program
O	Operations phase (as used in bullets)
OWRA	<i>Ontario Water Resources Act</i>
PA	Project Area
POR	Point of reception
Project	Great Bear Project
PTTW	Permit to Take Water
pVC	Pathway valued component
RLEF	Indigenous people living in the Red Lake and Ear Falls area
RSA	Regional study area
SAR	Species at Risk
TISG	Tailored Impact Statement Guidelines
WFN	Wabauskang First Nation
WQG PAL	Water Quality Guidelines for the Protection of Aquatic Life

20.0 Environmental and Social Management, and Follow-up Program

20.1 Environmental Management

20.1.1 Environmental Management System

Great Bear Resources Ltd. (Great Bear Resources) is a wholly owned subsidiary of Kinross Gold Corp. (Kinross) which has a strong track record of environmental protection across its operations and projects. The Kinross Environmental Management System (EMS) has been in place for more than a decade and supports its environmental commitments. The EMS has recently been reviewed and modernized and includes 15 robust standards, 13 of which are applicable and will be used to guide Project-specific environmental management planning:

- Air
- Biodiversity
- Closure and reclamation
- Cultural heritage
- Document control
- Environmental incident management
- Hazardous materials
- Mine rock
- Noise
- Permitting and compliance
- Tailings management
- Vibration
- Waste
- Water management.

Sustainalytics (2025) has ranked Kinross as strong, the highest ranking for management of environmental, social and governance, reflecting the robustness of its programs, practices and policies.

20.1.2 Social Performance Management System

Information regarding the Great Bear Project (Project) Social Performance Management System, which is another core aspect of sustainability, is provided in Section 18.6.3, which is informed by 10 social performance standards.

20.1.3 Proposed Environmental and Social Management Plans

Environmental management plans are a tool used by mining companies to document and effectively implement the mitigation measures identified for a project. They can strengthen site-

level accountability by clearly outlining expectations and improving understanding of compliance requirements. The Tailored Impact Statement Guidelines (TISG) requests that environmental protection plan(s) over the life of the Project be described as part of part of proposed mitigation and enhancement measures.

The Project EMS will include a number of environmental management plans to meet corporate governance and environmental stewardship requirements, along with federal and provincial requirements. These environmental management plans may build off plans that are already in place corporately, or those developed for the Advanced Exploration Program.

The following management plans or procedures will be prepared, and will be reviewed and updated as needed prior to each Project phase (C, construction; O, operations; CI, closure) as applicable (noting that the intended content will be provided, although the plans may be combined or renamed). A summary of proposed / known content is also included below:

- Air quality and dust management plan (C, O, CI)
 - Provide best practices and controls to control fugitive dust emissions consistent with the requirements of the *Environmental Protection Act*
 - Procedures will be provided for the management of dust emissions, such as using water or other provincially-approved suppressants on roads to reduce dust
- Aquatic management plan (C, O, CI)
 - Sets the minimum requirements to monitor, assess and mitigate potential impacts on fish and fish habitat and aquatic wildlife during Project activities
 - Support the:
 - Continued and uninterrupted rearing, spawning and migration of fish in all fish-bearing streams within the Project footprint unless authorized by Fisheries and Oceans Canada (DFO) under Section 35(2) of the *Fisheries Act*
 - Avoidance of Harmful Alteration Disruption and Destruction, unless authorized by DFO under Section 35(2) of the *Fisheries Act*
 - Avoidance of harming aquatic wildlife
- Archaeological chance / inadvertent find procedure (C, O, CI)
 - Outlines measures for management of identified archaeological resources that may be affected by the Project consistent with the *Ontario Heritage Act*
 - Procedures to be followed with the unexpected discovery of terrestrial or marine archaeological resources during Project activities
 - Describes worker education program for the recognition of archaeological artifacts and application of Heritage Chance / Inadvertent Find Procedure
- Blast and vibration management plan (C, O, CI)
 - Provide procedures required to minimize blast effects on personnel and the environment, such as fly rock and traffic controls, warning signals and limitations on ground vibrations and air over-pressure to protect fish

-
- Cyanide management plan (C, O)
 - Include pertinent details on the receipt, handling, storage, use, treatment and disposal of cyanide, consistent with the International Cyanide Code (ICMI 2021)
 - Environmental emergency plan (C, O)
 - Meet the requirements of the Environmental Emergency Regulations of the *Canadian Environmental Protection Act*, if required based on the charge, management or control of a substance listed in Schedule 1 therein
 - Erosion and sediment control plan (C, O, CI)
 - Outline overarching measures and practices intended to protect the fish and other environmental components, including nearby watercourses and waterbodies from sediment releases
 - Erosion and sediment control plan(s) will be developed for near and inwater works as part of environmental approval applications as needed
 - Wildlife and vegetation management plan (C, CI)
 - Outline mitigation to reduce effects on wildlife and their habitat, including as required by the *Endangered Species Act (ESA)*, *Fish and Wildlife Conservation Act (FWCA)*, *Species at Risk Act* and *Migratory Birds Convention Act (MBCA)*
 - Identify sensitive timing windows for disturbance, including vegetation clearing
 - Fuel handling and storage management plan (C, O, CI)
 - Outline the safe delivery, handling, storage and dispensing of fuel for the Project during all phases of Project development, developed in accordance with the *Transportation of Dangerous Goods Act* and the EPA
 - Hazardous material handling and waste management plan (C, O, CI)
 - Provide the protocol for safe handling, storage, and monitoring of hazardous materials, including hazardous wastes
 - Metal leaching / acid rock drainage management plan (ML / ARD; C, O, CI)
 - Outline the measures intended for management of mineral waste related to ML / ARD following from the requirements of the *Mining Act* including segregation and storage at the site
 - An adaptive management approach will be identified to allow for revision to the plan, if more information becomes available over the life of the mine
 - Net-zero plan (C, O, CI; copy provided in Appendix W-5)
 - Demonstrates Great Bear Resources' commitment to climate action and greenhouse gas mitigation, aligning with the *Net-Zero Emissions Accountability Act*
 - Outlines technologies, energy source options, operating practices and environmental practices to be implement for the reduction of greenhouse gas emissions from all phases and activities of the Project

- Noise management plan (C, O, CI)
 - Develop as a tool to help manage the sound being produced by the Project to meet the requirements of NPC-300
 - Plan will include requirements to log, investigate and follow up on complaints
- Spill and environmental emergency response plan (C, O, CI; draft provided as Appendix U-2)
 - Outlines responses for identified potential accidents, such as those identified as credible accidents and malfunctions provided in Section 16 of the Impact Statement
 - Prescribes measures for the provision of emergency response planning, training, responsibilities, cleanup equipment and materials, and contact and reporting procedures
 - Describes procedures to report, contain, clean up and dispose of contaminants following a spill, including appropriate contacts for responding to spills, to the standards of the EPA, and the Environmental Emergency Regulations under the *Canadian Environmental Protection Act*, along with contact details of the provincial Spill Action Centre
- Tailings management plan (C, O)
 - Detail the actions and activities to be implemented for the safe construction, operation, maintenance and surveillance of tailings dams (Operation, Maintenance, and Surveillance Manual)
 - Outline the measures intended for management of tailings, including related to ML / ARD, following from the requirements of the *Mining Act*, if not otherwise provided in the ML / ARD Management Plan
- Traffic management plan (C, O, CI)
 - Describe the approach to traffic management particularly during the construction phase to enhance safety for workers, contractors, the public and wildlife
- Waste management plan (C, O, CI)
 - Outline required approach to manage and temporarily store domestic and industrial waste on site, and transport domestic and industrial waste off site for permanent management, including as required under the EPA, including Regulation 347: General – Waste Management
 - Describe as appropriate, waste reduction measures, recycling and re-use.

The Project Social Performance Management System and negotiated agreements will be aligned with corporate governance, regulatory requirements and commitments, and supporting mutual benefits for Great Bear Resources and the communities. This may build off plans that are already in place corporately, or those developed for the Advanced Exploration Program. The Social Performance Management System will be delivered via the Social Performance Plan.

The following management plan will be prepared, and will be reviewed and updated as needed prior to each Project phase (C, construction; O, operations; CI, closure) as applicable. A summary of proposed / known content is included::

- Social Performance Plan (C, O, CI)
 - Framework to manage, track benefits and relationships with communities and stakeholders, with an emphasis on maximizing benefits and preventing negative pathways from developing, informed by industry best practice, and , developed in collaboration with affected communities and stakeholders
 - Outlines how Great Bear Resources will fulfill social responsibilities and commitments throughout the lifecycle of the Project to ensure transparency, accountability as well as long-term sustainability and shared values within the region
 - Key components include ongoing community and stakeholder engagement, social impact monitoring and management, community development, grievance mechanism, and compliance and commitments.

As appropriate, the plans or procedures will also include the following:

- Corporate and regulatory requirements
- Key design and operational features
- Organizational structure and responsibilities
- Training and awareness
- Non-compliance, incident reporting, corrective and preventative action
- Complaint resolution processes as appropriate.

Periodic management plan reviews will be completed such as near the end of each Project phase, to consider changing circumstances which could affect the continued suitability and adequacy of the plans, and to support continual improvement in overall effectiveness. Continuous improvement will also be supported through environmental monitoring, tracking of incidents and corrective actions (if any).

20.1.4 Alignment with Federal Jurisdiction

Based on the TISG and feedback received through engagement and consultation, three valued components under federal jurisdiction (fVCs) were identified for assessment in the Impact Statement (Section 6.3):

- Fish and fish habitat
- Migratory birds
- Indigenous Peoples.

Table 20.1-1 provides cross references for the proposed environmental management plans and potential linkages to the fVCs.

Table 20.1-1: Environmental and Social Management Plans, and Potential Linkages to Valued Components

	Direct Linkage (fVCs)			Indirect Linkage (pVCs)														
	Fish and Fish Habitat	Migratory Birds	Indigenous Peoples	Air Quality	Sound	Vibration	Groundwater	Surface Water Flows and Levels	Water Quality	Vegetation Communities	Wild Rice	Moose	Species at Risk	Other Wildlife	Land and Resource Use	Cultural Heritage	Archaeology	Local and Regional Economy
Air quality and dust management plan																		
Aquatic management plan																		
Archaeological chance / inadvertent find procedure																		
Blast and vibration management plan																		
Cyanide management plan																		
Environmental emergency plan																		
Erosion and sediment control plan																		
Wildlife and vegetation management plan																		
Fuel handling and storage management plan																		
Hazardous material handling and waste management plan																		
ML / ARD management plan																		
Noise management plan																		
Social Performance Plan																		
Spill and environmental emergency response plan																		
Tailings management plan																		
Traffic management plan																		
Waste management procedure																		

Notes:
A Net-zero Plan that demonstrates the commitment to climate action and greenhouse gas mitigation is provided in Appendix W-5. A Wild Rice Enhancement Plan is also proposed at Wabauskang Lake, as part of the Social Performance Plan.

20.2 Follow-up Program for Federal Valued Components

20.2.1 Introduction and Context

This section provides a framework for the follow-up program (FUP) for the Impact Statement as required by the TISG. According to the TISG, a FUP is required to:

- Verify the accuracy of the prediction of environmental effects of the Project
- Evaluate the effectiveness of the proposed mitigation measures.

In addition to the FUP for the Impact Statement, the Project must also comply with federal and provincial environmental approvals and will be monitored during all Project phases, with a goal of meeting or improving on regulatory requirements for environmental performance at the Project. Should incidents of non-compliance arise, they will be reported internally for actioning with Great Bear Resources, and as required to applicable regulatory authorities and as committed to with Indigenous partners. Response to the incident may include additional monitoring, corrective actions or adaptive management, as appropriate to limit associated effects to the environmental or on the rights of Indigenous people.

20.2.2 Preliminary Follow-up Program for fVCs

A preliminary FUP has been prepared for each fVC (fVC FUP), based on the results of the assessment of effects from the Project, residual changes and uncertainties, as detailed in Section 8 to Section 14 of the Impact Statement. Table 20.2-1 summarizes the level of uncertainty associated with the effects assessment and proposed mitigation measures for each fVCs. For the Indigenous Peoples fVC, the uncertainty is described by community.

The preliminary FUP framework for the fVCs identified in Section 20.1.3 are provided in Table 20.2-2 (fish and fish habitat), Table 20.2-3 (migratory birds) and Table 20.2-4 (Indigenous Peoples), and includes the:

- Proposed FUP with a preliminary description of planned studies
- Expected outcome(s) and targets of the FUP
- Summary of anticipated related regulatory monitoring
- Duration and frequency
- Triggers and Intervention mechanisms
- Opportunities for the involvement of Indigenous peoples in the FUP design and implementation.

Industry standard quality assurance control measures will be applied to monitoring programs.

Being a responsible steward of the environment requires that everyone involved in the Project believe that the outcomes of regulatory monitoring and compliance is important. Accordingly, while the responsibility for ensuring compliance is with all members of the Great Bear Resources team, the Mine Manager will ultimately be responsible.

Triggers and intervention mechanisms used in the event that the effects to the environment or impacts on rights of Indigenous people and cultures attributed to the Project are not as predicted.



Table 20.2-1: Uncertainties in the Assessment of Effects to fVCs

fVC and Effects Assessment Criteria	Degree of uncertainty (Low, Moderate, High) with the:	
	Effects Assessment?	Proposed Mitigation Measures?
Fish and Fish Habitat		
Fish habitat	Low	Low
Fish communities	Low	Low
Fish health	Low	Low
Migratory Birds		
Habitat abundance and quality	Moderate	Low
Density and populations	Moderate	Low
Migratory bird Species at Risk (SAR)	Moderate	Low

fVC and Effects Assessment Criteria	Degree of uncertainty (Low, L; Moderate, M; High, H) with the:									
	Effects Assessment?					Proposed Mitigation Measures?				
Indigenous Peoples	LSFN	WFN	ANA	NWOMC	RLEF	LSFN	WFN	ANA	NWOMC	RLEF
Community services and infrastructure	L	L	L	L	L	L	L	L	L	L
Current use of lands and resources for traditional purposes	L	L	L	L	L	M	M	M	M	M
Indigenous physical, cultural heritage, structures, sites or things	L	L	L	L	L	M	M	M	M	M



fVC and Effects Assessment Criteria	Degree of uncertainty (Low, L; Moderate, M; High, H) with the:									
	Effects Assessment?					Proposed Mitigation Measures?				
Community well-being	L	L	L	L	L	M	M	M	M	M
Health	L	L	L	L	L	M	M	M	M	M

Notes:

L: Low; M: Moderate; H: High

LSFN: Lac Seul First Nation

WFN: Wabauskang First Nation

ANA: Asubpeeschoseewagong Netum Anishinabek

NWOMC: Northwestern Ontario Métis Community

RLEF: Indigenous people in Red Lake and Ear Falls

Table 20.2-2: Follow-up Program for Federal Valued Component: Fish and Fish Habitat

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Construction	<p>Federal</p> <ul style="list-style-type: none"> <i>Fisheries Act</i> Metal and Diamond Mine Effluent Regulations (MDMER) <p>Provincial</p> <ul style="list-style-type: none"> <i>Ontario Water Resources Act (OWRA)</i> FWCA <i>Lakes and Rivers Improvement Act (LRIA)</i> 	<p>Verify the areas of fish habitat impacted and replacement habitat is consistent with the areas predicted in the Impact Statement</p> <p>Verify mitigation and offsetting / compensation measures are employed and constructed as per the Plans and approvals</p> <p>Verify no effect to fish health</p>	<p>As-constructed survey as per the Fish Habitat and Offsetting Compensation Plan (FHOC) to demonstrate that measures are constructed as per the approved plans and to evaluate the effectiveness of mitigation measures to avoid additional impacts</p> <p>As-constructed survey of structures authorized under the LRIA</p> <p>Monitoring of fish removal program to comply with Licence to Collect Fish for Scientific purposes and Licence to Transport Live Fish</p> <p>Flow monitoring of receiver waters to confirm predictions in the FHOC and to comply with provincial Permit to Take Water (PTTW)</p> <p>Water quality monitoring to comply with approved water quality criteria as per Environmental Compliance Approval (ECA)</p>	<p>Methods to verify the impacted areas of fish habitat, constructed measures and success of mitigation measures will include:</p> <ul style="list-style-type: none"> Surveys to confirm the physical extent of project development and offset / compensation measures compared to approved plans Surveys to confirm structures are present and constructed as per approved plans and specifications Surveys to measure areas and depths of constructed habitats Surveys and data loggers to monitor water levels and flow conditions of constructed habitat and receivers Monitoring of fish removal programs to document compliance with provincial permits and FHOC Monitoring program to confirm implementation and effectiveness of mitigation measures and compliance with plans listed in Table 20.1-1 <p>Methods to verify no effect on fish health will include:</p> <ul style="list-style-type: none"> Water quality sampling of site drainage, treated effluent and receiver waters for chemical parameters consistent with MDMER, provincial ECA Surveys to measure overpressure and vibration at interface with waters frequented by fish 	<p>Fish Habitat</p> <ul style="list-style-type: none"> Area of impacted habitat (m² and / or ha) Area of offset / compensated habitat (m² and / or ha) Percent change in percent flow (%) or water level (m) <p>Fish Health</p> <ul style="list-style-type: none"> Air overpressure (kPa) Vibration as peak particle velocity (mm/s) Water quality (mg/L, µg/L or ppm) Parameters will be determined by the provincial permits and MDMER but are expected to include pH, TSS, TDS, hardness, conductivity, dissolved organic carbon, sulphate, phosphorus, nitrate, nitrite, total and un-ionized ammonia, temperature, other cations and anions, and a suite of metals including mercury 	<p>As constructed monitoring of fish habitat will be focused on verifying the accuracy of the predicted areas of habitat impact, areas of offset and compensation and mitigation measures such as environmental plans during site development which is expected to take approximately three years</p> <p>Monitoring frequency will range from frequent / continuous (i.e., flows loggers and site inspections) to periodic (e.g., as built survey)</p> <p>Water quality monitoring will commence with construction to ensure receiver water quality and fish health is protected and continue through operations into closure</p> <p>Water quality sampling frequency and parameters will be specified in the ECA for construction issued by the province, as well as by MDMER requirements but is expected to include weekly, monthly and quarterly sampling as applicable</p>	<p>Trigger: Areas of habitat impact greater than predicted.</p> <p>Intervention: Determine extent and cause of additional impact. Remediate cause and area of additional impact. If area cannot be remediated develop additional contingency offset and compensation measures as per the FHOC through amendment of existing approvals.</p> <p>Trigger: Mitigation not effective in preventing effects greater than predicted or offsetting and compensation not constructed to specified plans.</p> <p>Intervention: Replace or supplement measures as needed and monitor for compliance. Construct offsetting and compensation measures to specified plans.</p> <p>Trigger: Water quality does not comply with approved water quality criteria.</p> <p>Intervention: Hold water in engineered retention ponds and determine cause of noncompliance. Restore or supplement water treatment to approved criteria.</p>

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Operations	Federal <ul style="list-style-type: none"> • Fisheries Act • MDMER Provincial <ul style="list-style-type: none"> • OWRA 	Verify the constructed fish and fish habitat offset and compensation areas are sustained and functioning as intended Verify mitigation measures are employed and operating as per the plans and approvals Verify no effect from the Project to fish communities beyond the areas predicted in the Impact Statement Verify no effect from the Project to fish health	Performance surveys as per the FHOCP to monitor the success of fish habitat offsetting measures constructed for the Project Environmental effects and effluent monitoring under the MDMER Flow monitoring of receiver waters to confirm predictions in the FHOCP and to comply with provincial PTTW Water quality monitoring to comply with approved water quality criteria as per ECA	Methods to verify the persistence and success of mitigation measures will include: <ul style="list-style-type: none"> • Surveys to confirm the sustained areas and depths of constructed habitats • Surveys to confirm the sustained quantity and location of constructed habitat features • Surveys to confirm the presence and abundance of fish in the constructed habitats and receivers • Surveys and data loggers to monitor water levels and flow conditions of constructed habitat and receivers • Water taking and flow monitoring of receivers as per the provincial PTTW • Monitoring program to confirm implementation and effectiveness of mitigation measures and compliance with plans listed in Table 20.1-1 Methods to verify no effect on fish health will include: <ul style="list-style-type: none"> • Surveys to measure overpressure and vibration at interface with waters frequented by fish • Effluent and receiver monitoring as per the MDMER and ECA • Environmental effects monitoring (EEM; water, sediment, invertebrates and fish) as per the MDMER • Biota (fish and invertebrates) studies as per the provincial ECA 	Fish Habitat <ul style="list-style-type: none"> • Area of offset and compensation habitat (m² and / or ha) • Percent change in percent flow (%) or water level (m) Fish Communities <ul style="list-style-type: none"> • Relative abundance • Number of species • Percent species composition Fish Health <ul style="list-style-type: none"> • Air overpressure (kPa) • Vibration as peak particle velocity (mm/s) • Water quality (mg/L, µg/L or ppm) • Parameters will be determined by the provincial permits and MDMER but are expected to include pH, TSS, TDS, hardness, conductivity, dissolved organic carbon, sulphate, phosphorus, nitrate, nitrite, total and un-ionized ammonia, temperature, other cations and anions, and a suite of metals including mercury • Cyanide species will be sampled at applicable stations, once ore processing commences per MDMER requirements • Fish tissue measured as mg/kg ww or mg/kg dwt) • Parameters to align with baseline studies including mercury, and with MDMER and ECA • Fish growth as size at age; and condition factor 	Fish habitat monitoring will shift to periodic performance monitoring through operations to verify long term success and maintenance of the measures. Performance monitoring of the constructed habitats will be completed in Years 1, 2, 3, 5 and 10 following construction of the offset and compensation areas. Performance monitoring will be terminated in year 10 providing that all success criteria specified in the FHOCP and Authorization are met. EEM as per the MDMER is conducted in 36 or 72-month phases throughout operations. The requirements for each study are dependent on the results of studies from the previous phase(s). Flow monitoring will consist of continuous data loggers at established stations and perioding field survey throughout operations. Water quality monitoring will continue through operations into closure. Water quality sampling frequency will be specified in the ECA for operation issued by the province, as well as by MDMER requirements but is expected to include weekly, monthly and quarterly sampling as applicable.	Trigger: Success criteria for offsetting and compensation not met as predicted. Intervention: Determine cause and implement contingencies as specified in the FHOCP. Trigger: Mitigation not effective in preventing effects greater than predicted. Intervention: Replace or supplement measures as needed and monitor for compliance. Trigger: Water quality does not comply with approved water quality criteria. Intervention: Hold water in engineered retention ponds and determine cause of noncompliance. Restore or supplement water treatment to approved criteria. Trigger: Fish health effects observed greater than predicted. Intervention: Follow MDMER EEM guidance process to investigate cause and effects.

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Closure	<p>Federal</p> <ul style="list-style-type: none"> <i>Fisheries Act</i> MDMER <p>Provincial</p> <ul style="list-style-type: none"> OWRA <i>Mining Act</i> 	<p>Verify mitigation measures are employed and operating as per the Plans and approvals</p> <p>Verify no effect to fish health</p> <p>Verify site is closed as per approved provincial closure plan</p>	<p>Environmental effects and effluent monitoring under the MDMER</p> <p>Flow monitoring of receiver waters to comply with provincial PTTW</p> <p>Water quality monitoring to comply with approved water quality criteria as per MDMER and ECA</p>	<p>Methods to verify the success of mitigation measures will include:</p> <ul style="list-style-type: none"> Water taking and flow monitoring of receivers as per the provincial PTTW Monitoring program to confirm implementation and effectiveness of mitigation measures and compliance with plans listed in Table 20.1-1 <p>Methods to verify no effect on fish community or health will include:</p> <ul style="list-style-type: none"> Effluent and receiver monitoring as per the MDMER and ECA EEM (water, sediment, invertebrates and fish) as per the MDMER Biota (fish and invertebrates) studies as per the provincial ECA 	<p>Fish Habitat</p> <ul style="list-style-type: none"> Percent change in percent flow (%) or water level (m) <p>Fish Health</p> <ul style="list-style-type: none"> Water quality (mg/L or µg/L) Parameters will be determined by the provincial permits and MDMER but are expected to include pH, TSS, TDS, hardness, conductivity, dissolved organic carbon, sulphate, phosphorus, nitrate, nitrite, total and un-ionized ammonia, temperature, other cations and anions, and a suite of metals including mercury Cyanide species will be sampled at applicable stations, once ore processing commences Fish tissue measured as mg/kg ww or mg/kg dwt) Parameters to align with baseline studies including mercury, and with MDMER and ECA Fish growth as size at age; and condition factor 	<p>EEM as per the MDMER continues until the mine becomes a recognized closed mine, a process that takes a minimum of three years after commercial operations have ceased.</p> <p>Flow monitoring will consist of continuous data loggers at established stations and periodical field survey for a duration determined on a site-specific basis within the certified Closure Plan.</p> <p>Water quality monitoring following MDMER requirements will continue through closure until the mine becomes a "recognized closed mine", a process that takes a minimum of three years after commercial operations have ceased. Water quality monitoring under the ECA is expected to continue to include weekly, monthly and quarterly sampling as applicable for a duration determined on a site-specific basis within the approved Closure Plan.</p>	<p>Trigger: Noncompliance with approved closure plan.</p> <p>Intervention: Determine cause and implement remediation through engagement with Regulators and other parties.</p>
<p>Mechanism to disseminate follow-up results among the concerned interested parties:</p> <ul style="list-style-type: none"> Annual as constructed status reports would be submitted to DFO with final as-constructed report when all fish and fish habitat construction (ponds and channels) are completed. Performance reports will be prepared and submitted to DFO for each completed monitoring year (e.g., years 1, 2, 3, 5 and 10). MDMER effluent monitoring reports and EEM biological monitoring reports are submitted to Environment and Climate Change Canada (ECCC) through the Mine Effluent Reporting System and the EEM Electronic Reporting System LRIA As built reports to be submitted to Ministry of Natural Resources as specified in approval PTTW and ECA monitoring reports to be submitted to Ministry of the Environment, Conservation and Parks (MECP) as specified in approvals Follow up monitoring reports to be submitted as per Section 20.5. 							

Notes:
The follow up monitoring framework and programs are based on current expectations and understanding but are subject to change through the permitting process.

Table 20.2-3: Follow-up Program for Federal Valued Component: Migratory Birds

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Construction	<p>Federal</p> <ul style="list-style-type: none"> MBCA ⁽¹⁾ <i>Species at Risk Act</i> MDMER <i>Canadian Environmental Protection Act</i> <p>Provincial</p> <ul style="list-style-type: none"> EPA OWRA FWCA ⁽²⁾ ESA 	<p>Verify change in abundance of habitat is consistent with the areas predicted in the Impact Statement</p> <p>Verify changes in connectivity and quality of habitat is consistent with predictions in the Impact Statement</p> <p>Verify potential indirect effects are consistent with prediction in the Impact Statement</p>	<p>As constructed surveys of the mine footprint</p> <p>Monitor the implementation of mitigation relevant to recovery plans for migratory SAR birds</p> <p>Monitor mine effluent under the MDMER</p> <p>Monitor air quality under National Pollutant Release Inventory Program (NPRI)</p> <p>Monitoring as per environmental plans (Section 20.1.2)</p> <p>Monitor potential indirect effects through provincial approval conditions:</p> <ul style="list-style-type: none"> Air quality as per ECA Water quality as per ECA Surface and groundwater water quantity as per PTTW 	<p>Industry-standard methods to verify the impacted areas of migratory bird habitat and success of mitigation measures will include:</p> <ul style="list-style-type: none"> Surveys to confirm the physical extent of project development and habitat change is consistent with approved plans <p>Methods to verify the success of mitigation measures will include:</p> <ul style="list-style-type: none"> Monitor migratory bird nesting Monitor use of deterrents to discourage migratory bird nesting within the PA Monitor emissions as per the NPRI Log wildlife encounters including mortalities Measure water taking and flow of receivers as per conditions of the provincial PTTW Effluent and receiver water quality monitoring as per the MDMER and ECA Monitoring programs to confirm implementation and effectiveness of mitigation measures and compliance with environmental management plans, specifically: air quality / dust, sound / light, and erosion and sedimentation 	<p>Abundance and quality of habitat</p> <ul style="list-style-type: none"> Percent change in habitat as (% and ha) Change in fragmentation (using splitting index) if impact area is larger than expected Vegetation clearing within prescribed windows <p>Environmental monitoring of indirect effects</p> <ul style="list-style-type: none"> Logged mortalities (number of birds by species) Groundwater drawdown (zone of influence) Suspended particulate matter (PM₁₀ and PM_{2.5} as µg/m³) Ambient sound (dBA) Light assessment (visual) Water taking and flow (m³) Water quality (mg/L or µg/L) 	<p>As constructed monitoring will be focused on verifying the accuracy of the predicted areas of habitat impact, during site development which is expected to take approximately three years.</p> <p>Habitat connectivity and quality will be assessed at the conclusion of the as constructed surveys.</p> <p>Monitoring frequency of mitigation measures will depend on specific management plans</p> <p>NPRI monitoring frequency varies by parameter and requires annual reporting.</p> <p>Monitoring of potential indirect effects associated with provincial permit conditions and range from frequent to continuous (i.e., dust/noise monitoring and site inspections)</p>	<p>Trigger: Areas of habitat impact or habitat fragmentation greater than predicted.</p> <p>Intervention: Determine extent and cause of additional impact and remediate additional impact if practicable. If area cannot be remediated, assess whether additional impact areas are likely to cause effects to local and regional migratory bird populations, and consult with regulatory agencies and indigenous communities through and adaptive management approach.</p> <p>Trigger: Mitigation not effective in preventing effects greater than predicted.</p> <p>Intervention: Replace or supplement measures as needed and monitor for compliance.</p>

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Operations	<p>Federal</p> <ul style="list-style-type: none"> MBCA ⁽¹⁾ <i>Species at Risk Act</i> MDMER <i>Canadian Environmental Protection Act</i> <p>Provincial</p> <ul style="list-style-type: none"> EPA OWRA FWCA ⁽²⁾ ESA 	<p>Verify change in quality of habitat is consistent with predictions in the Impact Statement</p> <p>Verify changes to density and populations is consistent with predictions in the Impact Statement</p> <p>Verify change to mortality is consistent with predictions in the Impact Statement</p> <p>Verify indirect effects is consistent with predictions in the Impact Statement</p>	<p>Bird surveys</p> <p>Monitor the implementation of mitigation relevant to recovery plans for migratory SAR birds</p> <p>Monitor air quality under NPRI</p> <p>Monitoring as per environmental plans (Section 20.1.2)</p>	<p>Industry-standard methods to verify quality of habitat and populations</p> <ul style="list-style-type: none"> Survey changes to mine footprint and areas of bird habitat in the Project Area (PA) Autonomous recording unit (ARU) crepuscular bird surveys Breeding bird surveys <p>Methods to verify the success of mitigation measures will include:</p> <ul style="list-style-type: none"> Monitor use of deterrents to discourage migratory bird nesting within the PA Monitor the presence / non-detection of protected habitats for SAR birds Monitor emissions as per the NPRI Log wildlife encounters including mortalities Monitoring program to confirm implementation and effectiveness of mitigation measures and compliance with environmental management plans, specifically: air quality / dust, sound / light, and erosion and sedimentation 	<p>Abundance and quality of habitat</p> <ul style="list-style-type: none"> Percent change in habitat as % and ha <p>Change in percentage of population impacted</p> <ul style="list-style-type: none"> Bird density (birds/ha) <p>Environmental monitoring of indirect effects</p> <ul style="list-style-type: none"> Logged mortalities (number of birds by species) Suspended particulate matter (PM₁₀ and PM_{2.5} as µg/m³) Ambient sound (dBA) Light assessment (visual) Water taking and flow (m³) Water quality (mg/L or µg/L) 	<p>ARU crepuscular bird surveys and breeding bird surveys are expected to occur at the completion of construction and continue into operations at intervals of approximately three years or as determined with relevant regulators.</p> <p>Monitoring frequency of mitigation measures will depend on specific management plans</p> <p>NPRI monitoring frequency varies by parameter and requires annual reporting.</p> <p>Monitoring of potential indirect effects associated with provincial permit conditions and range from frequent to continuous (i.e., dust / noise monitoring and site inspections)</p>	<p>Trigger: habitat impact or habitat fragmentation greater than predicted.</p> <p>Intervention: Determine extent and cause of additional impact and remediate additional impact if practicable. If area cannot be remediated assess whether additional impact areas are likely to cause effects to local and regional migratory bird populations and consult with regulatory agencies and indigenous communities through and adaptive management approach.</p> <p>Trigger: change in percentage of population impacted or bird density greater than predicted.</p> <p>Intervention: Investigate cause of difference and consult with regulatory agencies and indigenous communities through and adaptive management approach.</p> <p>Trigger: Mitigation not effective in preventing effects greater than predicted.</p> <p>Intervention: Replace or supplement measures as needed and monitor for compliance.</p>

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Closure	<p>Federal</p> <ul style="list-style-type: none"> • MBCA ⁽¹⁾ • <i>Species at Risk Act</i> • MDMER <p>Provincial</p> <ul style="list-style-type: none"> • EPA • OWRA • <i>Mining Act</i> • FWCA ⁽²⁾ • ESA 	<p>Verify changes in connectivity and quality of habitat is consistent with predictions in the Impact Statement</p> <p>Verify closure phase will directly increase functional habitat with a positive effect on population</p>	<p>Bird surveys</p> <p>Monitor extent and quality of restored habitat at closure</p> <p>Monitor the implementation of mitigation relevant to recovery plans for migratory SAR birds</p> <p>Monitor air quality under NPRI</p> <p>Monitoring as per environmental plans (Section 20.1.2)</p>	<p>Industry-standard methods to verify quality of habitat and populations</p> <ul style="list-style-type: none"> • Survey changes to mine footprint and areas of bird habitat in the PA • ARU Crepuscular Bird Surveys • Breeding Bird Surveys <p>Methods to verify the success of mitigation measures will include:</p> <ul style="list-style-type: none"> • Monitor and potentially use deterrents to discourage migratory bird nesting within the PA until the initial mine closure is complete • Monitor the presence / non-detection of protected habitats for SAR birds • Log wildlife encounters including mortalities • Monitoring program to confirm implementation and effectiveness of mitigation measures and compliance with environmental management plans, specifically: air quality / dust, sound / light, and erosion and sedimentation 	<p>Abundance and quality of habitat</p> <ul style="list-style-type: none"> • Percent change in habitat (% and ha) <p>Change in percentage of population impacted</p> <ul style="list-style-type: none"> • Bird density (birds/ha) <p>Environmental monitoring of indirect effects</p> <ul style="list-style-type: none"> • Logged mortalities (number of birds by species) • Suspended particulate matter (PM₁₀ and PM_{2.5} as µg/m³) • Ambient sound (dBA) • Light assessment (visual) • Water taking and flow (m³) • Water quality (mg/L or µg/L) 	<p>ARU crepuscular bird surveys and breeding bird surveys are expected to occur at intervals of approximately three years or as determined with relevant regulators until the mine becomes a recognized closed mine, a process that takes a minimum of three years after commercial operations have ceased.</p> <p>Monitoring of indirect effects (air, dust, flow) will consist of continuous data loggers at established stations and perioding field survey for a duration determined on a site-specific basis within the approved ECA, PTTW and Closure Plan.</p> <p>Water quality monitoring following MDMER requirements will continue through closure until the mine becomes a recognized closed mine, a process that takes a minimum of three years after commercial operations have ceased.</p> <p>Water quality monitoring under the ECA is expected to continue to include weekly, monthly and quarterly sampling as applicable for a duration determined on a site-specific basis within the approved Closure Plan.</p>	<p>Trigger: habitat impact or habitat fragmentation greater than predicted.</p> <p>Intervention: Determine extent and cause of additional impact and remediate additional impact if practicable. If area cannot be remediated assess whether additional impact areas are likely to cause effects to local and regional migratory bird populations and consult with regulatory agencies and indigenous communities through and adaptive management approach.</p> <p>Trigger: change in percentage of population impacted or bird density greater than predicted.</p> <p>Intervention: Investigate cause of difference and consult with regulatory agencies and indigenous communities through and adaptive management approach.</p> <p>Trigger: Mitigation not effective in preventing effects greater than predicted.</p> <p>Intervention: Replace or supplement measures as needed and monitor for compliance.</p>

Project Phase	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
<p>Mechanism to disseminate follow-up results among the concerned interested parties:</p> <ul style="list-style-type: none"> • Federal follow up monitoring reports to be submitted annually as per Section 20.5. • NPRI monitoring reports are to be submitted annually • MDMER effluent monitoring reports are submitted quarterly to ECCC through the Mine Effluent Reporting System • Provincial PTTW and ECA monitoring reports to be submitted to MECP as specified in approvals 							

Notes:

- 1) The MBCA does not explicitly require follow-up monitoring for activities by law. Instead, it prohibits harming migratory birds, their nests, or eggs, and places the onus on individuals and proponents to exercise due diligence to avoid such harm. Monitoring often becomes a necessary component of demonstrating due diligence or is required as a condition of specific permits or management plans.
- 2) The FWCA does not explicitly require follow-up monitoring for activities by law. Instead, it prohibits harming migratory birds, their nests, or eggs, and places the onus on individuals and proponents to exercise due diligence to avoid such harm. Monitoring is often required to demonstrate due diligence or as a condition of specific permits or management plans.

Table 20.2-4: Follow-up Program for Federal Valued Component: Indigenous

Nation	Residual Effects and Monitoring	Project Phase	Triggers and Interventions
Change in Community Services and Infrastructure			
LSFN WFN ANA	<ul style="list-style-type: none"> No residual effects: No interaction with on-Reserve communities, and no residual effects are anticipated. No specific on-Reserve mitigation or enhancement measures are proposed for community services and infrastructure. Project-related demands on regional community services and infrastructure are assessed in RLEF and NWOMC 	C, O, CI: From the start of construction to the completion of closure	Trigger: Project-related changes in Community Services and Infrastructure on-Reserve and off-Reserve are not as predicted. Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.
NWOMC RLEF	<ul style="list-style-type: none"> Residual effects to the region's municipal, provincial and non-profit service delivery capacity Monitor region's municipal, provincial and non-profit service capacity of the Social Performance Plan developed with community and regional input 		
Change in Current Use of Lands and Resources for Traditional Purposes			
LSFN	<ul style="list-style-type: none"> Residual effects to availability, access (registered LSFN trapline in the PA) and quality of experience to traditional terrestrial wildlife harvesting (hunting and trapping of large and small game in the LSA). Residual effects to availability, access (edible mushroom gathering in the PA) and quality of experience traditional plant harvesting (food and medicinal purposes in the LSA) Residual effects to quality of experience to traditional habitation, cultural, and spiritual sites and areas in the LSA Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 	C, O, CI: From the start of construction to the completion of closure	Trigger: Project-related changes to availability, access and quality of experience to traditional terrestrial wildlife harvesting areas are not as predicted. Trigger: Project-related changes to availability, access and / or quality of experience to traditional plant harvesting areas are not as predicted. Trigger: Project-related changes to quality of experience to traditional habitation, cultural, and spiritual sites and areas are not as predicted. Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.
WFN	<ul style="list-style-type: none"> Residual effects to availability and quality of experience to traditional terrestrial wildlife harvesting (hunting and trapping of large and small game in the LSA) Residual effects to quality of experience to traditional plant harvesting (food and medicinal purposes, including blueberry picking sites in the LSA along Highway 105) Residual effects to quality of experience to traditional habitation, cultural, and spiritual sites and areas (Chukuni River as cultural site in the LSA) Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 		Trigger: Project-related changes to availability and / or quality of experience to traditional terrestrial wildlife harvesting areas are not as predicted. Trigger: Project-related changes to quality of experience to traditional plant harvesting areas are not as predicted. Trigger: Project-related changes to quality of experience to traditional habitation, cultural, and spiritual sites and areas are not as predicted. Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.
ANA	<ul style="list-style-type: none"> Residual effects to availability and quality of experience to traditional terrestrial wildlife harvesting (hunting and trapping) for moose and trapping small animals at ANA registered trapline in the LSA Residual effects to quality of experience to traditional habitation, cultural, and spiritual sites and areas (canoe route and cultural sites in the LSA) Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 		Trigger: Project-related changes to availability and / or quality of experience to traditional terrestrial wildlife harvesting areas are not as predicted. Trigger: Project-related changes to quality of experience to traditional plant harvesting areas are not as predicted. Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.

Nation	Residual Effects and Monitoring	Project Phase	Triggers and Interventions
NWOMC	<ul style="list-style-type: none"> • Residual effects to availability, access (small and large game harvesting areas in the PA) and quality of experience to traditional terrestrial wildlife harvesting (large and small game harvesting, hunting, and kill sites in the LSA) • Residual effects to quality of experience to traditional plant harvesting (food and medicinal purposes, such as firewood, fiddleheads, berries in the LSA) • Residual effects to quality of experience to traditional habitation, cultural, and spiritual sites and areas in the LSA • Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 	C, O, CI: From the start of construction to the completion of closure	<p>Trigger: Project-related changes to availability, access and / or quality of experience to traditional terrestrial wildlife harvesting areas are not as predicted.</p> <p>Trigger: Project-related changes to quality of experience to traditional plant harvesting areas are not as predicted.</p> <p>Trigger: Project-related changes to quality of experience to traditional habitation, cultural, and spiritual sites and areas are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
RLEF	<ul style="list-style-type: none"> • Assessment for Indigenous people living in the Red Lake and Ear Falls area reflects a catch-all of current use of lands and resources for traditional purposes for off-Reserve Indigenous people. This is inclusive of off-Reserve individuals from LSFN, WFN, ANA, and NWOMC. The assessment of residual effects reflects the combined current use sites and areas identified by these communities as they relate to the PA, LSA, and RSA. • Residual effects to availability, access (inclusive of registered LSFN trapline in the PA, small and large game harvesting areas in the PA by NWOMC) and quality of experience to traditional terrestrial wildlife harvesting (inclusive of LSFN, WFN, ANA, and NWOMC hunting and trapping of large and small game in the LSA). • Residual effects to availability, access (edible mushroom gathering in the PA by LSFN) and quality of experience traditional plant harvesting (food, medicinal purposes, and natural resources in the LSA; inclusive of LSFN and WFN berry picking, and NWOMC firewood, fiddlehead, and berry gathering in the LSA) • Residual effects to quality of experience to traditional habitation, cultural, and spiritual sites and areas in the LSA (inclusive of cultural and spiritual sites and areas and traditional habitation identified by LSFN, WFN, ANA, and NWOMC). 		<p>Trigger: Project-related changes to availability, access and quality of experience to traditional terrestrial wildlife harvesting areas are not as predicted.</p> <p>Trigger: Project-related changes to availability, access and / or quality of experience to traditional plant harvesting areas are not as predicted.</p> <p>Trigger: Project-related changes to quality of experience to traditional habitation, cultural, and spiritual sites and areas are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
Change in Indigenous Physical and Cultural Heritage, and Structures, Sites, or Things			
NWOMC	<ul style="list-style-type: none"> • Residual effects to access to or quality of experience with sites and areas of Indigenous heritage importance, including archaeological, historical, or architectural sites (large and small game harvesting areas in the PA, and plant harvesting areas for berries, mushrooms, fiddleheads in the LSA of cultural heritage value). • Residual effects to change in sacred, ceremonial, spiritual, and cultural values (including language, stories, and traditions) associated with sites and areas of Indigenous heritage importance, including archaeological, historical, or archaeological sites (large and small game harvesting areas in the PA, and plant harvesting areas for berries, mushrooms, fiddleheads in the LSA of cultural heritage value). • Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input. 	C, O, CI: From the start of construction to the completion of closure	<p>Trigger: Project-related changes to access, and quality of experience in sites and areas with Indigenous heritage importance are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>

Nation	Residual Effects and Monitoring	Project Phase	Triggers and Interventions
LSFN WFN	<ul style="list-style-type: none"> • Residual effects associated with destruction and / or alteration of areas / sites of Indigenous heritage importance with the loss of trapline and plant harvesting (mushroom and berries) (for LSFN members) and wild rice area (for LSFN and WFN members) in the PA. • Residual effects to access areas of Indigenous heritage importance, including archaeological, historical, or architectural areas / sites in the PA. • Residual effects to sacred, ceremonial, spiritual and cultural values associated with areas of Indigenous heritage importance, including archaeological, historical, or architectural areas / sites in the PA. • Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 		<p>Trigger: Project-related changes to areas / sites with Indigenous heritage importance are not as predicted.</p> <p>Trigger: Project-related changes to the access, and / or quality of experience at site / areas of Indigenous heritage importance not as predicted.</p> <p>Trigger: Project-related changes to areas / sites associated with sacred, ceremonial, spiritual and cultural values are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
ANA	<ul style="list-style-type: none"> • Residual effects to quality of experience at areas of Indigenous heritage importance (hunting, trapping and fishing) in the LSA, including archaeological, historical, or architectural areas / sites. • Residual effects to sacred, ceremonial, spiritual and cultural values associated with areas of Indigenous heritage importance (campsites, gathering places and spiritual areas) in the LSA, including archaeological, historical, or architectural areas / sites. • Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input 		<p>Trigger: Project-related changes to the access, and / or quality of experience at site / areas of Indigenous heritage importance not as predicted.</p> <p>Trigger: Project-related changes to areas / sites associated with sacred, ceremonial, spiritual and cultural values are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
RLEF	<p>Assessment for Indigenous people living in the Red Lake and Ear Falls area reflects a catch-all of Indigenous cultural and physical heritage for off-Reserve Indigenous people. This is inclusive of off-Reserve individuals from LSFN, WFN, ANA, and NWOMC. The assessment of residual effects reflects the combined physical and cultural heritage sites and areas identified by these communities as they relate to the PA, LSA, and RSA.</p> <ul style="list-style-type: none"> • Residual effects to quality of experience at areas of Indigenous heritage importance the LSA, including archaeological, historical, or architectural areas / sites (large and small game harvesting areas in the PA, and plant harvesting areas for berries, mushrooms, fiddleheads in the LSA of cultural heritage value). • Residual effects to sacred, ceremonial, spiritual and cultural values associated with areas of Indigenous heritage importance (campsites, gathering places and spiritual areas) in the LSA, including archaeological, historical, or architectural areas / sites. 		<p>Trigger: Project-related changes to access, and quality of experience in sites and areas with Indigenous heritage importance are not as predicted.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
Change in Community Well-being			
LSFN WFN NWOMC RLEF WFN	<ul style="list-style-type: none"> • Residual effects to community well-being measuring: <ul style="list-style-type: none"> • access to regional health, social and educational services • cost of living and / or traditional economy • access to land and resources • economic opportunity and / or inequality • Monitoring of the Social Performance Plan developed with community and regional input and / or negotiated agreements. 	C, O, CI: From the start of construction to the completion of closure	<p>Trigger: Project-related changes to any of the following indicators that are not as predicted: access to services, cost of living and / or traditional economy, access to traditional lands and natural resources, and economic opportunities and / or inequality.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>

Nation	Residual Effects and Monitoring	Project Phase	Triggers and Interventions
ANA	<ul style="list-style-type: none"> • Residual effects to community well-being measuring: <ul style="list-style-type: none"> • access to regional health, social and educational services • cost of living and / or traditional economy • access to land and resources • community cohesion • Monitoring of the Social Performance Plan developed with community and regional input and / or negotiated agreements 	C, O, CI: From the start of construction to the completion of closure	<p>Trigger: Project-related changes are not as predicted to any of the following indicators: access to services, cost of living and / or traditional economy, access to traditional lands and natural resources, and community cohesion.</p> <p>Intervention: Identify source of Project-related change and with communities determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate.</p>
Changes in Health			
ANA LSFN NWOMC RLEF WFN	<ul style="list-style-type: none"> • Residual effects to change in health (Indigenous people) measuring; <ul style="list-style-type: none"> • Biophysical determinants of health: <ul style="list-style-type: none"> • air quality • multi-media environmental quality • access and availability of water • access and availability of traditional foods • sensory disturbances (noise, light vibration). • Social determinants of health: <ul style="list-style-type: none"> • economics (employment, income education) • housing • access to health and social services • food security • mental wellness and community cohesion • actual and perceived public safety (accidents and malfunctions) • safety of Indigenous women and girls. • Monitoring of the pVCs (Table 20.3-3) and fVCs (Table 20.2-2 and Table 20.2-3) linked to Indigenous Peoples (Table 20.1-1) and monitoring of the Social Performance Plan developed with community and regional input and / or negotiated agreements. 	C, O, CI: From the start of construction to the completion of closure	<p>Trigger: Project-related changes to Indigenous health attributed to any of the following indicators that are not as predicted: air quality, multi-media environmental quality, access and availability of water, access and availability of traditional foods, sensory disturbances (sound, vibration, light), economics (employment, income, education), housing, access to health and social services, food security, mental wellness and community cohesion, actual and perceived safety (accidents and malfunctions), and/or safety of Indigenous women and girls.</p> <p>Intervention: Identify source of Project-related change and with Indigenous communities, and other relevant local and regional partners, determine appropriate mitigation measures. Replace or supplement measures as needed and monitor as appropriate for assessment validation.</p>

20.3 Follow-up Program for Pathway Valued Components

The Impact Statement also provides an assessment of the potential changes to other valued components that may have a direct or indirect pathway to fVCs, termed pathway valued components (pVCs; Section 6.3). The effects assessment for the pVCs presented in Section 7, identifies:

- Changes to pVCs from the baseline condition after mitigation
- Whether there is a change pathway to one or more of the fVCs.

Table 20.3-1 presents a summary of these findings, as well as the degree of uncertainties associated with the assessment of potential effects and proposed mitigation measures for the pVCs.

Nine pVCs have an identified changes after mitigation, of the fifteen pVCs assessed in the Impact Statement (and as summarized in Table 20.3-1):

- Air quality
- Sound
- Vibration
- Groundwater
- Surface water flows and levels
- Water quality
- Vegetation communities
- Land and resource use
- Local and regional economy

The remaining six pVCs (Wild Rice, Moose, SAR, other wildlife, cultural heritage and archaeology) were assessed as either having no or negligible changes after mitigation, and as such are no longer considered within the follow up monitoring framework. Monitoring required by regulatory instruments such as the provincial ESA and Overall Benefit Permit if applicable, or otherwise committed to, will be completed; however, this monitoring is not needed to confirm the findings of the Impact Statement.

As the pVCs are not under federal jurisdiction, an assessment was made as to whether another reliable information source could be used to confirm the accuracy of the effects assessment and the efficacy of the mitigation measures for the nine pVCs with changes after mitigation, thereby reducing duplication and negating the requirement for a dedicated FUP. The review also considered whether there was a pathway from the changes remaining after mitigation to a fVC, where a high level of uncertainty in the effects assessment and expected efficacy of the proposed mitigation measures was also present. The results of this screening assessment to determine if a dedicated FUP is required is presented in Table 20.3-2 for each of the nine pVCs with residual changes.

Based on this screening and the surrogate monitoring information that will be available from other regulatory processes, dedicated FUP is not required for any of the pVCs. A summary of

the expected surrogate monitoring information for each of the nine pVC with residual changes is provided in Table 20.3-3 and includes:

- A preliminary description of planned studies
- Expected outcome(s) and targets of the surrogate monitoring
- Summary of anticipated related regulatory monitoring.
- Duration and frequency
- Triggers and intervention mechanisms.

As indicated in Section 20.5, a summary will be provided in the annual FUP report describing how the results of the pVC surrogate information verifies the accuracy of the prediction of environmental effects of the Project and the effectiveness of the proposed mitigation measures. Supporting information from those programs will also be available. If the accuracy is not verified, additional information will be provided, describing adaptive management measures (see Section 20.6).

Table 20.3-1: Summary of Effects Assessment for pVCs

pVCs	Change Remaining after Mitigation		Degree of Uncertainty (Low, Moderate, High)	
	Yes / No	Summary	Effects Assessment	Proposed Mitigation Measures
Air Quality	Yes	Changes to air quality will occur. The predicted concentrations for the construction phase and operations phase were combined with the baseline condition to estimate cumulative concentrations. The modelled cumulative concentrations for all indicators for all averaging periods are predicted to be below the respective Ambient Air Quality Standards during all phases at the extent of the leased claims boundary and at all points of reception (PORs) in the Local Study Area (LSA).	Low	Low
Sound	Yes	Changes to sound will occur. The predicted sound levels at all of the identified PORs are predicted to be below the federal and provincial criteria after application of mitigation measures.	Low	Low
Vibration	Yes	Blasting activities will cause changes in ground vibration, air overpressure and water overpressure. The predicted change to air overpressure and peak particle vibration are well below the MECP limits for all PORs and DFO requirements related to vibration for protection of fish will be met through mitigation.	Low	Low
Groundwater	Yes	After implementation of the proposed mitigation measures, there is a reduction of groundwater flows and levels, during the construction and operations phases that is mitigated during closure. After the filling of the underground, LP Central pit and Viggo management facility with water, groundwater flows and levels will recover to near baseline conditions.	Low	Low
Surface Water Flows and Levels	Yes	Overprinting and displacement of local unnamed watercourses and waterbodies is predicted to result in the permanent loss and alteration of local flows within the PA and adjacent areas within the LSA. These permanent effects have been mitigated within Section 8 (Changes to Fish and Fish Habitat) and Appendix L-2 (Fish and Fish Habitat Offset and Compensation Plan). A reduction in flow is estimated during the construction, operations and closure phases in Dixie Creek, but the effect is reduced after the passive closure period. This change is considered temporary and reversible, as flows and water levels are restored at post-closure. Estimated changes to flow and water level in the Chukuni River are not observable from the seasonal variability at any Project phase.	Low	Low
Water Quality	Yes	The greatest predicted change in surface water quality relative to baseline conditions will occur during the operations phase. All predicted concentrations for all modelling nodes are well below the identified Water Quality Guidelines for Protection of Aquatic Life (WQG PAL) criteria with the exception for cobalt concentrations in Unnamed Watercourse 1 (UN-1) in the operations phase. Unnamed watercourse 1 will be unavailable to fish during operations and mitigated within Section 8 (Changes to Fish and Fish Habitat) and Appendix L-2 (Fish and Fish Habitat Offset and Compensation Plan). During the closure phase (and post-closure), all modelled parameters are predicted to be less than WQG PAL, or equivalent to baseline conditions where baseline concentrations are greater than WQG PAL criteria.	Low	Low
Vegetation Communities	Yes	With the implementation of the proposed design and mitigation measures, including minimizing the Project footprint, progressive rehabilitation and targeted management of invasive species, changes to vegetation communities after mitigation are expected to be localized to the PA. Direct losses of vegetation will occur within the PA during construction, but no ecosites are eliminated at the regional scale, and overall ecosite diversity is maintained within the Regional Study Area (RSA). With the implementation of the mitigation measures outlined the PA can return to its current or an equivalent stage of succession.	Low	Low
Wild Rice	No	The Wild Rice Enhancement Project is expected to offset potential effects on Wild Rice stand abundance caused by the Project. Thereby, no changes to the abundance of Wild Rice stands in the broader geographical context are predicted.	Low	Low
Moose	No	There are no direct effects on Moose due to changes to the relative abundance or fragmentation of habitat predicted outside the PA. Indirect effects are expected to be negligible and largely confined to the PA, resulting in no effects on changes to habitat quality. Despite fluctuations in density across Project phases, modelling suggests that there will be no effects on Moose populations during construction, operation, or closure phases after mitigation. The confidence level of low to moderate results primarily from the limitations of provincial mapping data and forestry resource inventory data.	Low / Moderate	Low

pVCs	Change Remaining after Mitigation		Degree of Uncertainty (Low, Moderate, High)	
	Yes / No	Summary	Effects Assessment	Proposed Mitigation Measures
SAR	No	The zone of changes to SAR habitat after mitigation is predicted to be confined primarily to the PA. Indirect effects may extend into the LSA but are expected to diminish with distance from the Project footprint. Direct habitat losses will occur within the PA during construction, but no critical SAR habitats will be eliminated, and overall habitat diversity will be maintained within the RSA. Therefore, there are no effects on the relative abundance of SAR habitat after mitigation. Following mitigation, the Project results in a marginal increase in disturbance to Boreal Caribou. No nursery or overwintering habitats are directly or indirectly impacted, and the Project does not alter the long-term population trajectory of Boreal Caribou in the Sydney Range.	Low / Moderate	Low
Other Wildlife	No	Direct losses of other wildlife habitats will occur within the PA during construction, but no critical habitat types are eliminated at the regional scale, and overall habitat diversity is maintained within the RSA. There are no changes to the relative abundance of habitat after mitigation. No changes to other wildlife populations are anticipated after mitigations. Indirect effects are expected to be negligible and largely confined to the PA, with no changes to habitat quality after mitigation. The confidence level of low to moderate results primarily from the limitations of provincial mapping data and forestry resource inventory data.	Low / Moderate	Low
Land and Resource Use	Yes	Residual changes are expected to be localized to the PA. There will be no public access to lands within the active mine site due to safety considerations, but access will be permitted to resume following closure. Sensory disturbance in the LSA will be limited to the area in immediate proximity to the PA. There will be very limited viewing of the Project facilities even at their maximum extent and height, generally later in operations and only in the far distance. Changes to land and resource use are not expected to affect commercial users except for trapline holders and baitfish harvesters. With the exception that mining activity associated with the Project will deplete the mineral resource within the PA (which is the purpose of the Project), no long-term residual changes are expected to land and resource use.	Low	Low
Cultural Heritage	No	Changes are not anticipated to the identified built heritage resources and cultural heritage landscapes with the proposed design and mitigation measures.	Low	Low
Archaeology	No	With the proposed design and mitigation measures, no residual changes to the terrestrial archaeological sites or areas of marine archaeological potential are expected.	Low	Low
Local and Regional Economy	Yes (positive)	The Project will have a net positive effect on the local and regional economy through employment and labour income, opportunities and income for local and regional businesses, and increased revenues to local and regional municipalities, Ontario and Canada. The zone of changes is dominantly within the RSA. The level of confidence is considered to be moderate due to the inherent uncertainties in economic modelling (see Appendix O-2), as well as the personal choices made by the local labour force and businesses in seeking employment and opportunities with the Project that are not under the control of Great Bear Resources.	Moderate	Moderate

Note:
Readers should review to comprehensive assessments presented in Section 7 for further detail.

Table 20.3-2: Screening of pVCs for a Dedicated Follow-up Program

pVCs with Changes after Mitigation	Surrogate Information Available	Dedicated FUP Appropriate
Air Quality	<p>Under the <i>Canadian Environmental Protection Act</i>, owners or operators of facilities that meet published reporting requirements, must report emissions to NPRI. The Project is expected to be required to report to this program, which necessitates the submission of an annual publicly accessible inventory of pollutant releases, including air emission.</p> <p>Under the provincial EPA, the Project will be required to obtain an air ECA before commencing operations. The ECA will require the implementation of an Ambient Air Monitoring Program with data reported regularly to the MECP.</p> <p>As monitoring and reporting of air quality contaminants is required under both federal and provincial legislation, a dedicated FUP is not justified.</p>	No
Sound	<p>Under the provincial EPA, the Project will be required to obtain an ECA for air before commencing operations. The ECA is expected to require the implementation of a sound monitoring program with data reported regularly to the MECP. As monitoring and reporting of air quality contaminants is required under both federal and provincial legislation, a dedicated FUP is not justified.</p>	No
Vibration	<p>A blast management plan will be implemented to minimize blast effects on personnel and the environment, such as fly rock and traffic controls, warning signals and limitations on ground vibrations and air over-pressure to protect fish. The blasting plan will include monitoring consistent with provincial and federal guidelines. Monitoring of the overpressure and vibration in adjacent waters frequented by fish will be reported in fish habitat as constructed reporting to DFO until it can be demonstrated that there is no persisting no risk to fish and fish habitat.</p>	No
Groundwater	<p>The changes to groundwater flows and levels are managed through existing provincial regulatory mechanisms and a PTTW is required from the MECP under the OWRA. The approval will require monitoring of groundwater levels in accordance with an approved monitoring plan, as well as regular data reporting to the MECP.</p>	No
Surface Water Flows and Levels	<p>The changes to surface water flows and levels are managed through provincial regulatory mechanisms and approvals (ECA and PTTW) are required under the OWRA for surface water takings and discharges. The approvals will require a rigorous surface water hydrology monitoring program will track surface water flows and levels. Surface water monitoring results will be evaluated against established triggers and reported to MECP with adaptive management measures implemented as needed to maintain compliance and environmental protection. Flow monitoring is also included in the federal FUP for fish and fish habitat (Table 20.2-2).</p>	No
Water Quality	<p>The changes to water quality are managed through both federal and provincial regulatory mechanisms. Mine effluent is monitored federally through the MDMER while provincially an ECA is required under the OWRA. Both federal and provincial regulations will require a rigorous water quality monitoring programs and results will be evaluated against established triggers and reported to ECCC and the MECP.</p>	No
Vegetation Communities	<p>The residual change to vegetation after mitigation is predicted to be localized to the PA and occur during construction. Direct changes to vegetation in the PA will be monitored and reported through the habitat components of the FUP for migratory birds (Table 20.2-3). Indirect effects to vegetation communities will be monitored by verifying predictions of changes to air quality, groundwater and surface water flows and levels. Clearing of vegetation and monitoring for invasive species will be completed as per the sites management plans.</p>	No
Land and Resource Use	<p>Residual changes are expected to be localized to the PA. Land access will be managed and monitored by the mine due to safety considerations during construction, operations, and active closure consistent with the <i>Occupational Health and Safety Act</i>. Sensory disturbances and habitat will be monitored by verifying predictions of changes to air quality, sound, vibration, surface water flows and levels, migratory birds and fish and fish habitat.</p>	No
Local and Regional Economy	<p>Follow up programs are not considered to be required as changes will be positive to the local and regional economy.</p>	No

Table 20.3-3: Surrogate Follow-up Information for pVCs

pVC	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Air Quality	Federal <ul style="list-style-type: none"> NPRI Provincial <ul style="list-style-type: none"> EPA 	<ul style="list-style-type: none"> Comply with the NPRI Verify the air quality predictions and compliance with provincial ECA for Air 	<ul style="list-style-type: none"> Tracking of prescribed air emissions as per NPRI Monitoring of air quality parameters as prescribed in the ECA and as developed in consultation with the MECP 	<ul style="list-style-type: none"> Final monitoring locations, frequencies and parameters will be determined, reviewed and approved by MECP 	<ul style="list-style-type: none"> Key air quality parameters ($\mu\text{g}/\text{m}^3$) 	The ECA is expected to include development and operation phase conditions. Monitoring frequency will range from discrete to constant depending on the parameter and sample period.	<p>Trigger: Air quality does not comply with ECA</p> <p>Intervention: Replace or supplement mitigation measures as needed and monitor for compliance.</p>
Sound	Provincial <ul style="list-style-type: none"> EPA 	<ul style="list-style-type: none"> Verify the sound predictions and compliance with provincial ECA for air (including sound) 	<ul style="list-style-type: none"> Monitoring of prescribed air emissions as per NPRI 	<ul style="list-style-type: none"> Final monitoring locations, frequencies and parameters will be determined, reviewed and approved by MECP 	<ul style="list-style-type: none"> Ambient sound (dBA) 	The ECA is expected to include development (construction) and operation conditions. Monitoring frequency will range from discrete to constant depending on the parameter and sample period.	<p>Trigger: Sound measurements do not comply with ECA</p> <p>Intervention: Replace or supplement mitigation measures as needed and monitor for compliance.</p>
Vibration	Federal <ul style="list-style-type: none"> <i>Fisheries Act</i> Provincial <ul style="list-style-type: none"> NPC-103 ⁽¹⁾ NPC-119 ⁽¹⁾ 	<ul style="list-style-type: none"> Verify the overpressure and vibration predictions and compliance with provincial procedures through ECA for air (including sound) 	<ul style="list-style-type: none"> Monitor overpressure and vibration as per FHOCP. Monitoring as per NPC-103 and NPC-119 procedures 	<ul style="list-style-type: none"> Monitoring of overpressure and vibration at nearest waterbodies frequented by fish Monitoring of overpressure and vibration at nearest PORs 	<ul style="list-style-type: none"> Air overpressure (kPa) Vibration as peak particle velocity (mm/s) 	A blasting management plan will be prepared before the start of construction activities and will include the location and frequency of monitoring.	<p>Trigger: Vibration does not comply with federal or provincial health guidelines, or does not comply with FHOCP criteria</p> <p>Intervention: Follow mitigation and contingency in blast management plan (e.g., reduce explosive charge per delay).</p>
Groundwater	Provincial <ul style="list-style-type: none"> OWRA 	<ul style="list-style-type: none"> Verify the groundwater taking and level predictions and compliance with provincial PTTW 	<ul style="list-style-type: none"> Monitoring of groundwater as per the PTTW 	<ul style="list-style-type: none"> Monitoring of rate of groundwater taking Monitoring of extend of groundwater level changes Periodic recalibration of the groundwater model at regular intervals (two to five years). 	<ul style="list-style-type: none"> Flow volumes at groundwater discharge locations (m^3/day) Groundwater levels in local wells (masl) 	An approved monitoring plan will be required as part of the PTTW which will be in place prior to any water taking in accordance with regulations. Monitoring will range from periodic model recalibration to continuous logger recordings	<p>Trigger: Groundwater takings greater than predicted or do not comply with PTTW</p> <p>Intervention: Replace or supplement mitigation measures as needed and monitor for compliance. Recalibrate groundwater model with monitoring data and consult with regulatory agencies and indigenous communities through an adaptive management approach</p>

pVC	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Surface water flows and levels	Federal <ul style="list-style-type: none"> <i>Fisheries Act</i> Provincial <ul style="list-style-type: none"> OWRA 	<ul style="list-style-type: none"> Verify flow reductions are consistent with FHOCP Verify compliance with provincial PTTW and ECA 	<ul style="list-style-type: none"> Monitoring of flow and water level as prescribed in the FHOCP Monitoring of surface water flow and level as per the PTTW and ECA 	<ul style="list-style-type: none"> Monitor receiver water flow and water levels using standardized monitoring stations, continuous loggers, and periodic field surveys 	<ul style="list-style-type: none"> Flow (m³/s) Water levels (masl) 	<p>Monitoring will be completed and reported in the as constructed and performance monitoring prescribed in the FHOCP.</p> <p>An approved monitoring plan will be required as part of the PTTW and ECA which will be in place prior to any water taking in accordance with regulations. Monitoring frequency and duration will be specified in the final approvals process.</p>	<p>Trigger: Surface water flows or water levels do not comply with Impact Statement predictions or FHOCP</p> <p>Intervention: Replace or supplement mitigation measures as needed and monitor for compliance. Consult with DFO and indigenous communities through an adaptive management approach</p> <p>Trigger: Surface water flows or water levels do not comply with defined ranges within PTTW and ECA</p> <p>Intervention: Replace or supplement mitigation measures as needed and monitor for compliance. Consult with regulatory agencies and indigenous communities through an adaptive management approach</p>
Water quality	Federal <ul style="list-style-type: none"> <i>Fisheries Act</i> Provincial <ul style="list-style-type: none"> OWRA 	<ul style="list-style-type: none"> Verify compliance with the federal MDMER Verify compliance with provincial ECA 	<ul style="list-style-type: none"> Prescribed monitoring under the MDMER Surface and groundwater water quality monitoring to comply with approved water quality criteria as per ECA 	<ul style="list-style-type: none"> Monitor final effluent quality as per schedule Monitor receiver water quality 	<ul style="list-style-type: none"> Water quality (mg/L, µg/L or ppm). Parameters will be determined by the provincial approvals and MDMER Lethal and sublethal bioassay (LC₅₀ and IC₂₅)- 	<p>Water quality sampling frequency is prescribed in the MDMER and will be specified in the ECA. Sampling frequency is expected to include weekly, monthly and quarterly sampling as applicable. Water quality monitoring will commence at construction continue through operations into closure until the site is a recognized closed mine.</p>	<p>Trigger: Water quality does not comply with MDMER or ECA</p> <p>Intervention: Withhold effluent in onsite storage ponds and investigate cause. Remediate with additional mitigation as needed, and or consult with regulatory agencies and indigenous communities through an adaptive management approach</p>
Vegetation communities	Provincial <ul style="list-style-type: none"> <i>Weed Control Act</i> <i>Invasive Species Act</i> 	<ul style="list-style-type: none"> Verify physical extent of project development and vegetation clearing is consistent with approved plans Verify indirect effects are consistent with predictions 	<ul style="list-style-type: none"> As constructed surveys of the mine footprint Monitor potential indirect effects through provincial approval conditions: Monitor habitat mitigation as per Fish and wildlife management plan 	<ul style="list-style-type: none"> Surveys to confirm the physical extent of project development and habitat change is consistent with approved plans Monitor groundwater receiver water flow and water levels Monitor air quality 	<ul style="list-style-type: none"> Percent change in habitat as % and ha Flow volumes at groundwater discharge locations (m³/day) Groundwater levels in local wells (masl) Flow (m³/s) Water levels (masl) Air Quality (µg/m³) Dustfall (µg/m³) 	<p>As constructed survey will be focused on verifying the accuracy of the predicted areas of habitat impact, during site development which is expected to take approximately three years.</p> <p>Monitoring of potential indirect effects associated with provincial permit conditions and range from frequent/continuous (i.e., dust/noise monitoring and water levels) and are expected to occur from Construction until closure according to specific permit conditions</p>	<p>Trigger: Areas of habitat impact or habitat fragmentation greater than predicted.</p> <p>Intervention: Determine extent and cause of additional impact. Remediate cause and area of additional impact to extent practicable.</p>

pVC	Regulatory Instruments with Monitoring Requirements	Expected Outcome(s) and Targets	Monitoring Proposed (Description of Planned Studies)	Standard and Non-standard Methods Proposed	Indicators	Timeframe and Duration	Triggers and Intervention Mechanisms
Land and resource use	Provincial <ul style="list-style-type: none"> <i>Occupational Health and Safety Act</i> 	<ul style="list-style-type: none"> Verify restricted access to PA for safety reasons Verify indirect effects (sensory disturbances) and habitats are consistent with predicted changes 	<ul style="list-style-type: none"> Monitor site access as per health and safety measures Monitor fish and fish habitat and migratory birds as per proposed FUP Monitor potential indirect effects (sensory disturbance) through provincial approval conditions: Monitor habitat and wildlife mitigation as per Fish and wildlife management plan 	<ul style="list-style-type: none"> Monitor public access to site Monitor air quality Monitor sound Monitor vibration Monitor surface water flows and levels Monitor migratory birds and fish and fish habitat. 	<ul style="list-style-type: none"> Flow volumes at groundwater discharge locations (m³/day) Groundwater levels in local wells (masl) Flow (m³/s) Water levels (masl) Air Quality (µg/m³) Dustfall (µg/m³) 	Public access to the PA will be prohibited from the onset of the construction phase until following active closure Monitoring of potential indirect effects associated with provincial permit conditions and range from frequent / continuous (i.e., dust / noise monitoring and water levels) and are expected to occur from Construction until closure according to specific permit conditions	<p>Trigger: Public access not restricted or controlled as per plans Intervention: Replace or supplement exclusion measures as needed and monitor for compliance.</p> <p>Trigger: Changes to pVCs do not comply with Impact Statement predictions or FHOCP Intervention: Replace or supplement mitigation measures as needed and monitor for compliance.</p>
Local and regional economy	FUPs are not considered to be required as changes will be positive	<ul style="list-style-type: none"> Changes will be positive to the local and regional economy 	<ul style="list-style-type: none"> Monitor as per the Social Performance Plan 	Not applicable	Not applicable	Not applicable	Not applicable
<p>Mechanism to disseminate follow-up results among the concerned interested parties:</p> <ul style="list-style-type: none"> Federal follow up monitoring reports with summary of appropriate pVC monitoring to be submitted annually as per Section 20.5. NPRI monitoring reports are to be submitted annually Provincial PTTW and ECA monitoring reports to be submitted to MECP as specified in approvals Federal MDMER effluent monitoring reports and EEM biological monitoring reports are submitted to ECCC through the Mine Effluent Reporting System and the EEM Electronic Reporting System 							

Notes:

- MECP Publication NCP-119 and NPC-103 are guidelines (not a law or regulations), and provide procedures and methodology for noise control that gain legal force when referenced in legally binding instruments such as an ECA issued under the Ontario EPA.

20.4 Follow-up Program for Cumulative Effects

An assessment of the potential for cumulative effects resulting from the residual effects of the Project in combination with the existence of other past, present and reasonably foreseeable physical activities is presented in Section 15 of the Impact Statement.

No significant cumulative effects have been identified for the Project. A FUP for cumulative effects is not proposed. The FUP proposed for fVCs (Section 20.3) and use of surrogate monitoring information available for pVCs, will provide information to confirm the Section 15 findings.

A summary will be provided in the annual FUP report describing how the results of the fVC FUP and pVC surrogate information, verifies the accuracy of the prediction of cumulative effects of the Project and the effectiveness of the proposed mitigation measures (Section 20.5). If the accuracy is not verified, additional information will be provided describing proposed adaptive management measures which may include additional mitigation measures (Section 20.6).

20.5 Reporting

A summary annual FUP report will be prepared with supporting appendices as appropriate, that documents the results of the fVC FUP and pVC surrogate follow-up information. Reporting is detailed in the FUP for each fVC and applicable pVCs as follows:

- Table 20.2-2: Follow-up Program for Federal Valued Component: Fish and Fish Habitat
- Table 20.2-3: Follow-up Program for Federal Valued Component: Migratory Birds
- Table 20.2-4: Follow-up Program for Federal Valued Component: Indigenous Peoples
- Table 20.3-3: Surrogate Follow-up Information for pVCs.

The report will be provided in a digital format by July 1 each year, to the Impact Assessment Agency of Canada and the following local Indigenous Nations: ANA, LSFN, NWOMC and WFN.

The report will also be available for viewing at the Project site. Great Bear Resources will also consider other means of sharing the summary report with the general population.

Comments received on the annual fVC FUP summary report will be reviewed by Great Bear Resources and considered in the subsequent report(s) depending on the timing when received.

In addition to documenting the FUP results, the report will also describe whether additional mitigation measure(s) were implemented for the fVC, including based on the FUP monitoring and analyses, as applicable. It will also identify changes to the FUP, such as to accommodate changing conditions that will be implemented in the subsequent year. Should a change be required earlier that includes a reduction in the program, the Impact Assessment Agency of Canada and the identified local Indigenous Nations will be notified.

20.6 Adaptive Management Framework

Great Bear Resources intends to take an adaptive management approach over the life of the mine related to environmental performance, adjusting management practices and approaches, and learning from the outcomes of ongoing environmental monitoring and management. Compliance with environmental permits and approvals will be monitored during all Project phases as described in Section 20.2 and Section 20.3, with a goal of meeting or improving on regulatory requirements for environmental performance at the Project. Should incidents of non-compliance arise, they will be reported internally for actioning with Great Bear Resources, and as required to applicable regulatory authorities and committed to with Indigenous partners. Response to the incident may include corrective actions or adaptive management as needed, including to limit and remediate associated environmental effects if any.

As new information becomes available that allows verification of the environmental effects and determination of the efficacy of the mitigation measures proposed in the Impact Statement, the FUP program may be modified in response. This planned adaptive management approach to environmental performance includes:

- Regular review of environmental management plans to:
 - Confirm applicability to changing Project conditions, such as movement from one Project phase to the next
 - Identify opportunities for improvement with changing Project knowledge or improved technology
 - Maintain compliance with changing regulatory requirements
 - Incorporate knowledge from community feedback and grievances
- Regular review of FUP program to:
 - Maintain compliance with applicable regulatory requirements
 - Compare against other applicable guidance
 - Identify trends if any, to assess potential for future non-compliance and need to Project modifications
 - Develop and implement corrective and preventative actions as appropriate.

Adaptive management plans may be proposed in the Impact Statement where there is a high level of uncertainty associated with the effectiveness of mitigation measures or predicted effects and to aim for expected outcomes to be achieved. None of the predicted effects or planned mitigation measures are assessed as having a high level of uncertainty. Accordingly, specific adaptive management plan(s) have not been proposed for the Project, as the following criteria identified in the TISG have not been met in the assessment of potential negative effects and benefits of the Project (Section 7 to Section 18 of the Impact Statement):

- There is high uncertainty around the effectiveness of mitigation measures or predicted effects
- There is a need for, or benefit to, reducing uncertainties through an adaptive management plan.

None of the predicted effects or planned mitigation measures are assessed as having a high level of uncertainty.

20.7 Issues Tracking and Grievance Procedure

The Kinross Grievance Management Standard requires that all sites establish and maintain a grievance resolution mechanism. This Community Grievance Procedure aims to appropriately address, record, and resolve all stakeholder concerns, complaints and grievances when they are lodged by an individual or group of individuals, and defined as:

- Concerns: a statement of worry that something is happening, or could happen
- Complaints: a statement not connected to a specific time or event
- Grievances: an allegation of specific harm or impact, related to an event or timeline.

This standard is a core element of the company's Social Performance Management System. The standard requires that the site grievance mechanism be aligned with the effectiveness criteria of the United Nations Guiding Principles on Business and Human Rights. These criteria are legitimacy, accessibility, predictability, equitability, transparency, respect for human rights, and are based on engagement, dialogue and continuous improvement. The policy framework protects individuals raising grievances, such that they will not face discrimination or retaliation as a result of raising their concerns.

The existing grievance procedure for the advanced exploration program will be modified as needed to document and respond to inquiries, concerns, complaints and grievances (collectively termed grievances for the remainder of this section) received during all phases of the Project. The objectives of the grievance procedure will include to:

- Formalize the process for addressing community grievances
- Provide simple and timely response to stakeholder grievances
- Resolve or seek to resolve stakeholder grievances effectively and transparently
- Involve the grievant in the process of resolving grievances through dialogue, as appropriate
- Support continual improvement.

The steps proposed are as follows:

- Disclose: communicate the grievance procedure
- Receive: grievance identification and registration using a standard form
- Acknowledge: confirmation and classification (Level 1 to Level 5) using a grievance assessment tool in consideration of scale, ability to remediate, extent, vulnerability and impact to company
- Investigate: conduct a detailed review including the grievant as needed
- Respond: communicate response and close out if the grievant agrees
- Resolve and / or recourse: further dialogue and, if needed, additional investigation if the initial response is not satisfactory to the grievant
- Follow-up and close out: resolution with the grievant and, if still not in agreement, provide advice about further avenues of potential recourse

- Report results: documentation of the grievance case from start to finish to support continual improvement including for key performance metrics required by the Kinross Social Performance Management System.

The grievance form documents the following information:

- Date and time the grievance was received and how received
- Contact information to support information gathering and follow up
- Description of the grievance
- Proposed or requested solution.

A review will be completed of forms received, as well as patterns and trends in the feedback, as part of the internal adaptive management process and to support the continuous improvement of management plans and procedures, where appropriate. Key performance indicators include resolution within 30 days of receipt of a grievance form, and stakeholder satisfaction with both process and outcome.

20.8 References

International Cyanide Management Institute (ICMI). 2021. The International Cyanide Management Code. Accessed from: <https://cyanidecode.org/wp-content/uploads/2021/06/01-The-Cyanide-Code-JUNE-2021.pdf>

Sustainalytics. 2025. Company ESG Risk Ratings – Kinross Gold Corp. Accessed September 2025 from: <https://www.sustainalytics.com/esg-rating/kinross-gold-corp/1008175425>.