IZOK CORRIDOR PROJECT
PROJECT PROPOSAL

Volume 1






MMG

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EXECUTIVE SUMMARY

Introduction

The Izok Corridor Project ('the Project') is a proposed zinc mine development located in the Kitikmeot region of Nunavut. The nearest community to the Project is Kugluktuk, which is located on the shore of Coronation Gulf near the mouth of the Coppermine River. The Project consists of a mine site at Izok Lake and at High Lake, an all-season access road, and a port facility. The Izok and High Lake mines will produce primarily zinc, as well as some copper concentrate with a small amount of lead concentrate. The concentrate will be trucked to a port at Grays Bay on the Coronation Gulf, where it will be transported by bulk-carrier ships, during the open water season, to smelters in Asia and Europe.

Minerals and Metals Group (MMG) is submitting this Project Proposal to initiate the regulatory review of the Project. The description of the Project, its components and all environmental information contained within this Project Proposal is preliminary in nature and based on pre-feasibility design. In early 2012, MMG initiated a feasibility study for the Project. Subject to approval of the feasibility study by the MMG Executive Committee, MMG plans to deliver a DEIS to the NIRB in mid to late 2013.

MMG is initiating the NIRB process with the submission of various licence and permit applications with this Project Proposal, including a Type 'A' Water License application to the NWB, an application for Crown Land for the Grays Bay Port to Aboriginal Affairs and Northern Development Canada (AANDC), a Land Use Permit Application for the Izok Mine facilities to the Kitikmeot Inuit Association (KIA), and an application for a Section 35 Fisheries Act authorization to Fisheries and Ocean Canada (DFO). The Type 'A' Water License application is being submitted to both the NIRB and the NWB in the interest of initiating a coordinated NIRB-NWB review process.

Given that the Project footprint is entirely within the boundaries of Nunavut and MMG's initial determination that any direct effects of the Project will be limited to Nunavut, MMG anticipates that the NIRB screening will lead to a decision that the Project be reviewed under Part 12.5 of the Nunavut Land Claims Agreement.

Project Proponent

MMG is an Australian base metal mining company, based in Melbourne with Canadian headquarters in Vancouver, British Columbia. MMG has a workforce of more than 8,500 people around the world. It currently employs 33 people at its Vancouver office.

MMG is a wholly owned subsidiary of Minmetals Resources Limited (Minmetals), which is a diversified mining and metals business and one of the world's largest producers of zinc and a substantial producer of copper, lead, gold and silver. The majority shareholder of Minmetals is China Minmetals Corporation (CMC), headquartered in Beijing China. CMC was founded in 1950 and owns businesses in 26 nations and regions around the world.

MMG's corporate goal is to maintain and expand its position as a leading internationally diversified base metals group. Its objective is to be one of the top three mid-tier mining companies within five years. This goal will be achieved by developing its upstream, diversified base metals operations through exploration and discovery, organic growth, and acquisitions.

Project Description

The Izok Corridor Project involves mining the zinc-rich deposits of the Izok and High Lake properties, and processing the ore at the Izok Mine. In order to ship the concentrate to customers, MMG will construct a ~350 km all-season road (Izok Road) connecting the Izok Mine (the more southerly mine) to the High Lake Mine and north to a port at Grays Bay. Facilities at the Grays Bay Port will support loading of bulk-carrier ships, as well as re-supply of fuel and goods for the Project.

Development of the Izok Corridor Project will require land at Grays Bay for storage and port facilities and associated infrastructure, at the Izok and High Lake Mine sites for infrastructure, open pits, waste rock/overburden and tailings impoundment areas, and along the Izok Road corridor. The total land requirement for the Project is estimated at 1,160 hectares (ha).

MMG intends to file an Exceptions Application to the NIRB for authorization to proceed with pre-construction works prior to completion of the Project review. Current plans for pre-construction works include early staging of equipment and materials and other preparatory activities, including construction of the two winter roads.

Temporary winter roads will be established between the proposed Izok Mine and the Tibbitt-Contwoyto Ice Road (TCWR) and between Grays Bay and High Lake to facilitate construction. The Izok winter road will be used to bring construction equipment and materials into the site from Yellowknife. The High Lake winter road will be used to move construction equipment and materials from Grays Bay.

The preliminary Project schedule assumes that the pre-construction activities will occur in advance of receiving the Project Certificate. Following regulatory approval, construction of the Grays Bay Port and the Izok Road will begin. Current reserves indicate a mill operating life of approximately 12 years at an average production rate of approximately 2 million tonnes of ore per annum (Mtpa).

The total construction workforce will be approximately 1,140 workers, including management, trades people and labourers taking into consideration shifts and rotation. During the operations phase, the total workforce is estimated to be approximately 710 people. Given the demand for labour associated with the Izok Corridor Project, Kitikmeot residents can expect opportunities for employment and for developing skills and knowledge.

Izok and High Lake Mines

Planning for the Izok and High Lake mines is being driven by the goal of a mine closure plan that presents the lowest long-term environmental risk and the lowest risk of long-term maintenance and related costs. MMG is focused on designing waste and water management plans that will support this goal.

The Izok deposits will be will be mined by open pit and underground methods. The deposits planned for open pit mining are located directly below Izok Lake. This will require the draining of Izok Lake and diverting the water into the downstream lake (Itchen Lake) to allow extraction of the resource. Izok Lake dewatering will be guided by a detailed Water Management Plan. In addition, a Fish Management Plan and Fish Habitat Compensation Plan will also be prepared in collaboration with the Hunters and Trappers Organizations (HTOs) and Fisheries and Oceans Canada (DFO).

Potentially acid generating (PAG) and non-acid generating (NAG) mineral wastes removed from the open pit mine and underground mine will be placed largely within the outline of the drained Izok Lake to minimize the area of disturbance at closure. The majority of the PAG mineral wastes will be deposited sub-aerially and the balance deposited subaqueously deep in the worked out open pit. Potential production and release of acid rock drainage (ARD) and metal leaching (ML) will be managed by keeping the PAG mineral wastes frozen. Surface water contact with PAG mineral waste piles will be minimized by locating the piles within the topography at Izok Mine and by installing surface water diversion channels and berms as required.

The tailings design approach at the Izok Mine will be similar to that for PAG waste rock, and will involve sub-aerial frozen deposition.

Deposits at the High Lake Mine will be mined by both open pit and underground mining methods. As described for the Izok Mine, the majority of PAG mine wastes from High Lake will be sub-aerially deposited. During operations, the production and release of ARD/ML will be managed by ensuring that freezing of the PAG waste rock occurs during or shortly after deposition, and that this material remains frozen year round in perpetuity. A Mineral Waste Management Plan will be implemented to confirm waste pile design assumptions, and to identify where potential changes to the plan may be required.

<u>Izok Road</u>

The Izok Road will be constructed between the Izok Mine and Grays Bay Port to transport concentrate from the processing plant at the Izok Mine to the port, and to backhaul ore from the High Lake Mine to the processing plant. Izok Road will also be used to transport personnel, fuel, cement, explosives and other mine supplies from the port to the mines. Although the majority of resupply materials to the Izok Mine will be via the port and Izok Road, there may be occasions when some re-supply is required from the south via the TCWR during winter.

The proposed route of the Izok Road is based on available topographic information and preliminary route reconnaissance. Environmental and archaeological studies have also been undertaken, as well as preliminary identification of potential sources of granular fill and rock quarries. The ongoing feasibility study will include more detailed road design work and changes to the current alignment will be made to optimize the route. Key road design considerations will include minimizing the length and number of stream crossings, optimizing the use of road building material sources and avoiding disturbance of ground ice and permafrost.

MMG is considering alternate route alignments for two segments of the Izok Road based on information gathered during the feasibility study. These alternative route alignments are being considered due to MMG's interest in reducing haul distances, minimizing the number and lengths of streams crossings, avoiding challenging terrain features, reducing the potential for wildlife interactions, and increasing road user safety.

<u>Grays Bay Port</u>

Grays Bay Port will be located approximately 330 km northeast from the Izok Mine site, and 50 km north of the High Lake Mine site. The port will consist of two main components: land-based infrastructure such as a concentrate storage building, fuel storage and laydown area, camp and administration office; and the dock itself.

Land-based activities at the Port site will continue year round and will consist of trucks delivering the concentrate to the concentrate storage building, trucks picking up diesel, sea-containers and supplies to bring to the mine sites. A Traffic Management Plan will be developed to minimize potential interactions with wildlife, particularly the Dolphin and Union Caribou Herd prior to their spring migration to Victoria Island.

Marine activities will be limited to the ice-free months in Coronation Gulf (roughly from mid July to mid October) when fuel and supplies for the Project will be delivered and the concentrate will be loaded and transported by bulk-carrier ships. This may also involve barge traffic. At this time, MMG does not plan to break continuous landfast ice. Ice floes will be moved or broken by an ice breaker as needed during the months of July to October.

<u>Marine Transportation</u>

Between 450,000 and 650,000 DMT of mineral concentrates will be shipped from Grays Bay through the Coronation Gulf to ports in Europe and Asia. Diesel oil and resupply cargo will also be transported into Grays Bay every year to re-supply the port and mine operations.

Coronation Gulf is ice free for three to four months each year. Shipping access through the Coronation Gulf must, however, pass through parts of the Arctic Ocean that have narrower ice-free periods. While the length of the shipping season will depend on vessel design (ice classification) and ice conditions, the maximum length of the shipping season will be, in many cases, limited to 100 to 120 days to be consistent with the draft Kitikmeot Regional Land Use Plan. Shipping activities will also take into account sensitive coastal and offshore areas, wildlife migration timing and shipping considerations outlined in the North Baffin Regional Land Use Plan.

At this time, it is estimated that 16 round trips will be needed during the peak year of production. The current plan is to use Polar Class 6 or equivalent ships with ice-breaker support.

MMG will consult with several boards and agencies to prepare a environmental management plans to mitigate marine transport effects on marine mammals and birds as part of the Shipping Management Program.

Public Engagement

MMG recognizes the important role that public engagement plays in planning and design of the Project, managing environmental effects and developing mitigation and future monitoring programs. MMG is committed to developing a public participation program to facilitate engagement with potentially affected communities, residents, Inuit Organizations, Aboriginal groups and other governments to ensure that their input in considered in alternative options, and their views are integrated into Project planning and selection of preferred Project alternatives.

Following extensive consultation undertaken in relation to the High Lake Project in 2004-2006 and the Izok Project in 2007-2008, MMG re-initiated discussions with Nunavut regulators and Kitikmeot communities in early 2012. The purpose of these meetings and community visits was to provide updates on the Izok Corridor Project and MMG's long-term plan for its presence in Nunavut, and to seek preliminary feedback on issues and concerns that will need to be considered in the design of the Project.

Further sessions and site visits will be conducted with regulators, community advisory committees, Hunters and Trappers Organizations (HTOs), mayors and councils, and the broader Kitikmeot public throughout the Project review phase. MMG will continue to keep the Tlicho in NWT informed, and will arrange a meeting with the Inuvialuit Game Council to advise them of Project-related marine shipping proposed along the western route. Other key initiatives will include establishment of working groups with community and agency representatives, and visits to communities that have an interest in the Project.

MMG established a community liaison office in Kugluktuk in 2009. The Community Liaison Officer provides direct support to MMG in hiring seasonal staff for the exploration and environmental programs, and provides local knowledge and insight to the planning and design of field programs, development and delivery of the consultation strategy and overall advice to the MMG team. The Community Liaison Officer also assists with implementation of the MMG community sponsorship program by working closely with the mayors of Kugluktuk and Cambridge Bay in the selection of applicants for funding.

Traditional Knowledge

MMG is building on the traditional knowledge (TK) studies initiated in 2004 for the High Lake Project through a multi-part TK program for the Izok Corridor Project. The program will include continued collection of documented knowledge for the entire Project area, recording of Inuit Qaujimajatuqangit (IQ) from Inuit in the Project area (elders, HTO) and Tlicho interests around Izok Lake, and incorporating issue-specific advice from community knowledge holders.

While gathering knowledge is a core part of the work, MMG's primary interest is the application of this knowledge. In particular, MMG is interested in the contribution traditional knowledge can make to design of the Project, baseline information for the Project area, and aspects of the environmental assessment, including identification of issues, effects analysis, identification of potential mitigation measures, determination of effects significance and follow-up and monitoring programs.

Traditional knowledge collection will involve community workshops and meetings to discuss how local residents view the Project and the acceptability of its potential effects on the environment and its people within the context of local knowledge. MMG is also arranging with the KIA to obtain a traditional knowledge report for the entire Project area.

Existing Biophysical Environment

Based on regulatory and community engagement conducted in relation to the High Lake Project Draft Environmental Impact Statement (DEIS) and other Part 5 reviews for mining projects in Nunavut, MMG has developed the following preliminary list of Valued Ecosystem Components (VECs) for the Izok Corridor Project DEIS. This list of VECs will be further refined through the regulatory scoping process and ongoing public engagement.

- Air Quality
- Climate
- Noise and Vibration
- Landforms and Soils
- Vegetation
- Terrestrial Wildlife and Wildlife Habitat
- Terrestrial Birds
- Hydrogeology
- Surface Hydrology
- Water and Sediment Quality
- Aquatic Organisms, Fish and Habitat
- Marine Environment
- Water and Sediment Quality
- Aquatic Organisms and Habitat
- Marine Mammals and Habitat
- Marine Birds and Habitat

Baseline studies of the existing biophysical environment have been scoped to include the local study area around key Project components (including the Izok and High Lake mines, the Izok Road, and the Grays Bay Port) within which the maximum spatial extent of potential Project effects are expected to occur. In addition, more regional baseline information is being collected to support the assessment of Project effects that could extend beyond the boundaries of the local study area and act cumulatively with similar effects of other projects and activities in the region.

For most of the VECs, much of the existing baseline was collected during field studies conducted in 2004-2007 for the High Lake project DEIS, and more recently in 2007 and 2008 for the High Lake Project proposal. Additional field studies are currently ongoing in 2012 (including associated traditional knowledge) to support preparation of the Izok Corridor Project DEIS and provide baseline for future long-term monitoring programs that will be implemented during the Project.

Existing Human Environment

The socio-economic baseline considers communities and regional assets that can be maintained or enhanced to achieve desired outcomes of the Izok Corridor Project. The study area encompasses the entire Kitikmeot region. The Valued Socio-economic Components (VSECs) of the general community assets include:

- Human assets of the socio-economic environment, which encompass the skills and knowledge inherent in the community, the opportunities for growth and learning, access to skills and knowledge, and access to essential services that are fundamental in maintaining individual, family and community wellness
- Economic assets, which consider the opportunities available to people for employment and participation in the economic life of the community and region, including the monetary or financial resources that people and governments use to achieve their economic objectives
- Physical assets, which encompass the basic infrastructure that allows a community to function effectively
- Social assets, which include the traditional and community activities in which people participate and the facilities or amenities that they draw upon to access them

- Natural assets, which consider the biophysical environment upon which community well-being depends (air, land, waters and wildlife)

In addition to these assets, three broad VSECs are considered not necessarily as assets, but desired community well-being outcomes. These include individual and family wellness, community wellness and personal security (including financial and food security)

The Project Proposal provides a description of the baseline conditions of each these community assets within the Kitikmeot region, including available information on archaeological resources that has been collected through field programs since 2004.

Potential Biophysical Effects

The Izok Corridor Project has the potential to affect the biophysical environment through activities and infrastructure development associated with all phases of the Project (construction, operation, closure and post closure). The Project Proposal provides a preliminary identification of potential effects that could occur as a result of routine activities and facilities, as well as possible mitigation and monitoring programs that could be implemented by MMG.

MMG will be exploring opportunities to improve Project design through ongoing feasibility studies, and will consider additional specialized mitigation measures and operational strategies to minimize the potential environmental effects of the Project. MMG will also develop detailed environmental management programs and plans, based on consultation with federal and territorial agencies and other stakeholders, to support the implementation of adaptive management measures to address unanticipated adverse environmental effects of the Project.

Potential Socio-economic Effects

Potential direct effects of the Project on the socio-economic environment are largely determined by:

- Employment directly with MMG, or with a contractor
- Payment of royalties, taxes and other forms of compensation
- Changes to the biophysical environment in relation to human activities or perception

The direct socio-economic effects of the Project can be largely and effectively mitigated through measures aimed at managing human resources, protecting public and workers safety, and enhancing business development.

Indirect and induced effects may be related to the response of individuals, families and communities, and governments and other organizations (e.g., Regional Inuit Organizations, Nunavut Tunngavik Inc.) to direct Project effects on the socio-economic effects, on the natural environment, and from the Project as a whole.

The interaction between the various effects of the Project will result in various outcomes on community well-being in terms of individual and family wellness, community wellness, and personal security. The manner in which they are managed will determine whether these outcomes are beneficial or adverse. To this end, the indirect socio-economic effects of the Project can be effectively managed through adaptive approaches and collaborative problem solving such that the desired outcome is achieved. The

Project Proposal discusses the key potential effects of the Project on the socio-economic environment, and MMG's proposed approach to managing these effects.

Human Health and Ecological Risk Assessment

A Human Health and Ecological Risk Assessment (HHERA) will be conducted for the Izok Corridor Project to evaluate the potential for health effects on local people and off-work staff, and wildlife resources in the study area. The assessment will include a human health risk assessment (HHRA) and an ecological risk assessment (ERA) to evaluate potential effects on the atmospheric and aquatic environments and key wildlife species.

The HHERA program will incorporate available traditional knowledge (TK) and land use information to identify human and key ecological receptor locations, develop site-specific exposure scenarios in relation to air, soil, water and foods, and obtain information on the terrestrial and aquatic environments.

Cumulative and Transboundary Effects Assessment

The potential contribution of the Izok Corridor Project to regional cumulative effects will be assessed in accordance with NIRB requirements, and will follow the latest guidance and precedence of best practice for such assessments in various administrative jurisdictions in Canada. The cumulative effects assessment will consider the most likely cause-effect pathways through which residual Project effects could interact with other past, existing and reasonably foreseeable projects and activities both in time and space (i.e., long-range transport of a residual Project effect, residual Project effects on a broad ranging VEC, and synergistic effects of the Project that could result in a disturbance on a natural feature within a larger region under land and resource management).

Possible residual Project effects that could overlap with effects of other projects and activities to cause more regional cumulative effects includes changes in air quality, soils and vegetation from airborne dust and combustion emissions, and changes in wildlife habitat, movement patterns or mortality risk, particularly for those species that have large seasonal migration patterns or ranges (e.g., caribou, marine birds).

Cumulative effects on the socio-economic environment are anticipated to be both adverse and beneficial with overall positive outcomes on individual, family and community well-being. Any cumulative effects that occur will be the result of a complex interaction between the various effects of the Project with those of other developments, and their collective contributions to the social, cultural and economic changes or shifts occurring across Nunavut.

Applicable government plans (e.g., regional land use plans), programs and other initiatives will be identified and discussed in relation to contribution to mitigation and monitoring of cumulative biophysical and socio-economic effects.

While most residual Project effects on the biophysical environment are expected to be localized (i.e., within close proximity to the Project footprint) and therefore within Nunavut boundaries, there is the potential for some effects to be transboundary in nature (e.g., changes in air quality, effects on surface water and freshwater aquatic organisms, effects on wide-ranging wildlife species, and effects on marine mammals along the western shipping route in the NWT).

The Izok Corridor Project also has the potential to result in transboundary effects on traditional use of lands and waters for wildlife harvesting. This is due, in part, to the proximity of the Izok Mine site to the NWT border, use of a western shipping route through the Northwest Passage, and the potential for the Project to generate economic opportunities outside of Nunavut.

Accidents and Malfunctions

As part of the DEIS for the Izok Corridor Project, MMG will assess possible accidents and malfunctions that could occur during each phase of the Project, with a focus on those scenarios that have a reasonable probability of occurring. The assessment will involve a Project-wide risk assessment including the Izok and High Lake mines, the Izok Mill, Izok Road, Grays Bay Port and marine shipping.

More detailed assessments will be conducted to address the risk of transporting concentrate, fuel and reagents through the various transportation modes (i.e., via haul truck on Izok Road, via ocean-going vessels along the eastern and western shipping routes) to workers, the public and the environment.

Environmental Management Programs

Detailed management programs and plans will be developed during the Project licensing and permitting stage based on the feasibility study, further environmental studies, and consultation with federal and territorial agencies and other stakeholders. MMG has considerable management and organizational experience from its operational mines, and will be adapting this experience to arctic conditions of Nunavut for operation of the Izok Corridor Project.

MMG will prepare the following environmental management programs and plans in accordance with its Safety, Health, Environment and Community (SHEC) Management System. Inuit organizations, federal and territorial regulatory agencies and communities will be consulted during development of these plans.

- Waste Management Program
- Site Water Management Program
- Risk Management Program
- Shipping Management Program
- Roads Management Program
- Aquatic Effects Monitoring and Management Program
- Wildlife Mitigation and Monitoring Program
- Borrow Pit and Quarry Management Plan
- Explosives Management Plan
- Air Quality Monitoring and Management Plan
- Noise Abatement Plan
- No Net Loss Plan
- Closure Reclamation Plan

Adaptive strategies will be integrated into these environmental management programs and plans to assess the effectiveness of associated mitigation and management measures, and enable improvements to be made throughout the life of the Project. This will include identification of thresholds/criteria and indicators that will be used to trigger management actions based on data collection and review of analytical results, and feedback from government, public and other stakeholders.

ACRONYMS AND ABBREVIATIONS

ANFO	Ammonium Nitrate-Fuel Oil
ARD	Acid Rock Drainage
BMP	Best Management Practices
COPC	Chemicals of potential concern
EA	Environmental Assessment
EEM	Environmental Effects Monitoring
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
FIFO	Fly-in and fly-out operation
GHG	Greenhouse Gases
HADD	Harmful Alteration, Disruption or Destruction
HTO	Hunters and Trappers Organization
IIBA	Inuit Impact Benefit Agreement
IOL	Inuit Owned Lands
KI	Key Indicator
KIA	Kitikmeot Inuit Association
LSA	Local Study Area
ML	Metal Leaching
MMER	Metal Mining Effluent Regulations
NAG	Non-acid Generating
NLCA	Nunavut Land Claim Agreement
NIRB	Nunavut Impact Review Board
NPC	Nunavut Planning Commission
NRLUP	North Baffin Regional Land Use Plan
PAI	Potential Acid Inputs

PAG	Potentially Acid Generating
PM	Particulate Matter
PMF	Probable Maximum Flood
RSA	Regional Study Area
SAG	Semi Autogenous Grinding
TDS	Total Dissolved Sediments
TK	Traditional Knowledge
TSP	Total Suspended Particulates
VC	Valued Component
VEC	Valued Ecosystem Component
VOC	Volatile Organic Components
VSEC	Valued Socio-economic Component
WKRLUP	West Kitikmeot Regional Land Use Plan

GLOSSARY

Acid Base Accounting	A procedure used to measures the acid- and alkaline-producing potential of soil and rock in order to determine if, after disturbance, the waste material will produce acid and subsequently leach metals
Acid Rock Drainage	A natural process in which sulphuric acid is produced when sulphides minerals in rocks are exposed to air and water. When the acidic water seeps from the rock, the resultant seepage is called ARD.
Aggradation	To fill and raise the level of (the bed of a stream) by deposition of sediment, OR the process by which the upper surface of permafrost may be raised within an embankment fill
Aggregate	Composed of mineral crystals of one or more kinds of mineral rock fragments
Ammonium Nitrate-Fuel Oil	A widely used bulk industrial explosive mixture
Alternatives Assessment	Assessments used to compare development options based on technical, economic and environmental feasibility
Archaeology	The scientific study of the material remains of the cultures of historical or pre-historical peoples
Baseline	Describes the current environmental setting, against which changes in the environment from a proposed Project can be assessed
Biodiversity	A measure of the variety of plants and animals in a particular habitat or ecosystem
Biophysical	All living organisms and the natural physical environment that sustains them (terrestrial, aquatic and atmospheric)
Block Model	A block model is a simplified representation of an ore deposit, that can be thought of as a stack of computer-generated cubes that represent small volumes of rock in a deposit. The blocks are assigned a grade by a number of different estimation methods. The mining engineer uses this model to develop mine plans and production schedules.
Borrow pit	An area from which material (usually soil, gravel or sand) is taken for use at another location
Catchment	A sub-division of terrain within which surface water collects and concentrates into streams and rivers.
Colluvium	Surficial soils and rocks that are loosened and transported down slopes by weathering and erosional processes.

Contingency	A planned allowance for unexpected events (such as an emergency) that may, but are not certain to, occur
Cumulative Environmental Effects	The residual environmental effects of the Project, plus the anticipated residual effects of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions
Ecosystem	The complexity of a natural community of living organisms and its environment functioning as an ecological unit in nature
Environmental Impact Assessment	A process to predict the potential adverse and beneficial effects of proposed initiatives on the biophysical and socio-economic environments.
Environmental Adaptive Management	A process for improving environmental management policies and practices through a structured, iterative process of decision, with an aim to reducing uncertainty over time through system monitoring.
Esker	A ridge of sand, gravel or cobbles deposited by running water in streams within glaciers, that when melted leave an elongated mound of outwash material
Fines	Silt and clay sized particles
Flotation Circuit	An ore processing device that separates finely crushed minerals from one another by causing some to float in a froth and others to remain in suspension in the pulp
Fluvial	Produced by the action of a stream or river (e.g., sand and gravel deposits)
Freeboard	A factor of safety usually expressed as a height above the adopted flood level thus determining the actual planning level. Free board tends to compensate for factors such as wave action, localised hydraulic effects and uncertainties in the design flood levels.
Freshet	A major rise in, or a sudden overflowing of, a small stream, usually caused by heavy rains or rapidly melting snow
Geochemistry	The study of chemical composition of the earth and the physical and chemical processes responsible for it
Geographic extent	The geographic area within which an environmental effect of a defined magnitude occurs (e.g., site specific, local, regional, territorial, national)
Geology	The study of earth in the terms of its development as a planet
Geomorphology	The scientific discipline that studies the surface features of the earth, including land forms
Geotechnical	Relating to the application of engineering of soil and rock materials
Grout	A thin mortar used for filling spaces; any of various other materials (as a mixture

	of cement and water or chemicals that solidify) used for a similar purpose
Hydraulic Conductivity	Describes the ease with which water can move through soil pore spaces or rock fractures; and relates to the amount of water that will flow through a unit cross-section area of aquifer under a unit gradient of hydraulic head
Hydrocarbons	Any substance containing carbon and hydrogen in various combinations (e.g. gasoline and oil)
Hydrology	The science that deals with the occurrence, circulation, distribution, and properties of the waters of the earth, including their reactions with the environment
Inert	Gases or material that are not readily reactive with other elements
Key Indicators	Species, species groups, resources or ecosystem functions that represent components of the broader Valued Components. For practical reasons, KIs are often selected where sufficient information is available to assess potential project residual environmental effects and cumulative effects.
Lay-down Area	An area used for storage of construction materials and supplies
Leaching	The process by which a liquid (e.g., water) passes through a substance, picking up some of the material and carrying it to other places. Can occur underground in soil and rock, or above ground through piles of material.
Local Study Area	The spatial boundary established for baseline data collection to support the assessment of potential environmental effects of a project
Magnitude	A measure of the intensity or severity of an environmental effect
Metal Leaching	A naturally occurring process that is caused when minerals containing metals come in contact with both air and water
Mitigation	Technically feasible and cost-effective measures or strategies employed to minimize or avoid project environmental effects or cumulative effects, including project design features, project policies, specialized mitigation, environmental protection measures and protocols, social or community programs, benefits agreements, and compensation (e.g., habitat compensation, habitat replacement or financial compensation)
Nameplate Capacity	Refers to the intended technical full-load sustained output of a facility
Nitrate	A compound containing nitrogen that can exist in the atmosphere or as a dissolved gas in water and that can have harmful effects on humans and animals
Non-acid Generating	Classification of excavated rock, assessed based on various tests and sulphur content, as negligible potential for acidic drainage and associated metals leaching

Nunavummiut	The indigenous inhabitants of Nunavut
Ore	A rock or mineral that contains a valuable constituent, such as diamonds or a metal, for which it is mined and processed
Ore body	The occurrence of mineralization from which the metal is economically recoverable
Overburden	The waste rock or materials overlying an ore or mineral body that are displaced during mining without being processed
Permafrost	A permanently frozen layer of soil or subsoil, or even bedrock. Permafrost is ground (soil or rock) that remains at or below 0°C for two or more years, and which occurs to variable depths below the earth's surface in arctic and subarctic regions
Piezometer	An instrument for measuring pressure head, ranging from simple standpipe to devices using electrical or pneumatic transducers, and typically installed within boreholes or during construction of major geochemical structures such as dams
Plume	A visible or measureable discharge of effluent in water or emissions in air
Post-closure	The period of time, considered to be up to 30 years, following the shutdown of a mine or other facility, during which monitoring of its effects occurs
Potentially Acid Generating	Classification of excavated rock, assessed based on various tests and sulphur content, as having significant potential for acidic drainage and associated metals leaching
Prills	The coarse, porous, and hardened spherical particles of Ammonium Nitrate (AN), a raw material used in the manufacture of explosives. By using porous AN prills, fuel oil can be absorbed into the prill micropores to produce an efficient explosive
Probable Maximum Flood	The maximum runoff condition resulting from the most severe combination of hydrologic and meteorological conditions that is considered reasonably possible for a watershed
Project-Environment Interaction	A term used to describe the way in which a project action or activity acts on an environmental component spatially and temporally to cause an environmental effect
Project Footprint	The most immediate area of a development project, including the area of direct physical disturbance
Project Inclusion List	A list of all past, present and reasonable foreseeable projects, activities and actions that overlap spatially and temporally with residual environmental effects of a proposed project
Proponent	The individual or organization that wishes to carry out a development project

Quarry	A type of open-pit mine from which rock or minerals are extracted, and generally used as building materials
Raise	Steeply inclined or vertical excavation that connects multiple horizontal mining levels
Reagent	A substance used in a chemical reaction to bring about a chemical change
Reclamation	The process of restoring disturbed land to its former (or other) productive use or form
Regional Study Area	The spatial boundary established for baseline data collection to support the assessment of potential cumulative effects or indirect effects of a development project
Riparian Area/Zone	The interface between land and a river or stream, which is ecologically important because of its role in soil conservation, habitat biodiversity and aquatic ecosystems
Seepage	The slow escape of a liquid or gas through porous material
Semi Autogenous Grinding Mill	The mill responsible for grinding materials from large chunks into small, usable pieces for processingt using steel balls and big rocks for grinding
Scoping	A process that focuses study and analysis on those project-environment interactions with the greatest potential to result in environmental effects
Slurry	A thin mud or any fluid mixture of a pulverized solid with liquid
Stope	An excavation in the form of steps made by the mining of ore from steeply inclined or vertical veins
Sump	A pit or reservoir serving as a drain or receptacle for liquids
Sustainability	An economic, social and environmental concept that involves meeting the needs of the present without compromising the ability of future generations to meet their own needs
Tailings	Materials left over after the process of separating the valuable fraction from the uneconomic fraction of an ore
Tailings Impoundment	An engineered containment facility for storing tailings
Talik	A layer of year-round unfrozen ground that lies within permafrost areas. In regions of continuous permafrost, taliks often occur underneath shallow lakes and rivers, where the deep water does not freeze in winter, and thus the soil underneath will not freeze. Closed, open and through talik are terms used to refer to whether the talik is completely surrounded by permafrost, is open to the top, or open to both top and unfrozen layers beneath the permafrost

Transboundary Effect	Any effect within an area under the jurisdiction of a Party caused by a proposed activity, the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party
Utilidor	A tunnel for housing utility services such as water and sewerage pipes, electrical cabling, and also providing pedestrian access, affording all of these items protection from severe winter weather conditions
Valued Ecosystem Component	Attributes or aspects of the biophysical environment considered to be of vital importance to a particular region or community for ecological, social, cultural and/or ecologic reasons
Valued Socio-Economic Component	Attributes or aspects of the socio-economic environment that are considered to be of vital importance to a particular region or community, including components relating to the local economy, health, demographics, traditional way of life, cultural well-being, social life, archaeological resources, existing services and infrastructure, and community and local government organizations
Waste Rock	A term used for rock that contains metals in such low concentrations that it cannot be economically processed

Izok Corridor Project Proposal

Table of Contents Page

List of Tables

List of Figures

List of Appendices