

Project Dashboard

Chidliak Diamond Mine (149747)

Proposal Status: Conformity Determination Issued

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Project Overview

Type of application: **New**

Proponent name:	Sarah McLean
Company:	De Beers

Schedule:

Start Date:	2030-01-02
End Date:	2045-12-31
Operation Type:	Annual

Project Description:

De Beers Canada Inc. (De Beers), an experienced mining company in Northern Canada, is proposing to construct a diamond mine (the Project) at the Chidliak exploration site located on the Hall Peninsula of Baffin Island in the Canadian Territory of Nunavut. The mine is envisioned as a series of relatively small cylindrical pits or underground mines, likely mined in sequence. Each cluster would have an adjacent rock pile and processed kimberlite area with supporting infrastructure. The process plant is envisioned to be a mobile, modular facility which could be relocated to each cluster of kimberlites as required. The camp is anticipated to be small and modular, housing only those personnel that must be on site to perform their roles. Additional support personnel will be located off-site and may operate equipment remotely. De Beers is investigating low-carbon energy systems for use at the site, including synthetic diesel, micro-reactors, hydro-electricity, wind, and solar. To realize this vision however, many factors must come together. The site must be supported by adequate satellite or fiber optic line to ensure adequate connectivity. The mining technology must be developed sufficiently to minimize rock waste and to effectively mine the kimberlite at the site. Most importantly, the people of Nunavut must see the value in the Project and must be partners in the development of this FutureSmart Mine.

Personnel:

Persons:	200
Days:	6570

Project Map

List of all project geometries:

ID	Geometry	Location Name
8655	polyline	Potential All Weather Access Road to Chidliak
8656	polyline	Potential Transmission Line to Chidliak
8657	polyline	Potential Winter Trail Route to Chidliak
8658	polygon	Chidliak Leases

Planning Regions:

Qikiqtani

Affected Areas and Land Types

Municipal

Settlement Area

Project Land Use and Authorizations

Project Land Use

Mine Development

Advanced Mineral Exploration

Airport

All-Weather Road Access

Bulk Sample

Hydro Development

Mine Development

Mineral Exploration

Pits and quarries

Scientific Research

Site Cleanup/Remediation

Temporary Structures

Transportation and/or Communications Corridor

Trenching

Winter Access

Licensing Agencies

INAC: Class A Land Use Permit

NWB: Type B Licence

INAC: Surface Leases/Licences

Other Licensing Requirements

No data found.

Material Use

Equipment

Type	Quantity	Size	Use
Mining Equipment	TBD	TBD	Drills, Haul Trucks, Conveyors, Light Vehicles, Large front-end Loaders, Dozers, Shovels, Processing Plant, Monitoring equipment, Drill and Blast equipment, Graders, pumps, pipelines, cutters and multiple other types of heavy machinery required for mining operations. Transportation to site will require an aerodrome as well as potentially an all-weather road and/or winter trail and

potentially a transmission line. Monitoring will require several meteorological towers and various instrumentation.

Fuel Use

Type	Container(s)	Capacity	UOM	Use
Diesel	5	12000000	Liters	<p>The mine will require diesel, aviation fuel, gasoline and/or propane. Volumes have not yet been determined. It is also anticipated that energy will be supplied by low carbon sources such as solar panels, a wind farm, hydro-electric, bio-gas, liquified natural gas, batteries, hydrogen cells, synthetic diesel, and/or a micro nuclear reactor. Options for energy supply are</p>

discussed in
the Project
Proposal .

Hazardous Material and Chemical Use

Type	Container(s)	Capacity	UOM	Use
Ammonium Nitrate	1	16000	Metric Tons	<p>Ammonium Nitrate-fuel oil (emulsion/ANFO blend) will be utilized in drill and blast operations. Sodium nitrate, sulfamic acid, mineral oil, detonator caps and delays, and pentex boosters will also be utilized. Smaller quantities of a wide variety of other chemicals, including propylene glycol and ethylene glycol, may also be utilized. Material Data Sheets will be maintained for all chemicals stored on site. No. Containers and volumes of each expected is TBD.</p>
Small modular nuclear reactor	1	10	Lbs	<p>A small or micro modular nuclear reactor is under consideration for use at the Project. Nuclear waste associated with the reactor would be</p>

transported off site for disposal at an approved facility. No. Containers and capacity are not yet determined.

Water Consumption

Daily Amount (m ³)	Retrieval Method	Retrieval Location
0	TBD	Qamaniruluk Lake, Qamanialuk Lake, Sunrise Lake, Glacier Lake, McKeand River and other water bodies

Waste and Impacts

Environmental Impacts

A mine development has the potential to affect the biophysical and human environment through activities in all phases of the Project. The full list of interactions will be developed once the Alternatives Investigation is completed and the proposed Mine plan is developed. Potential effects to the biophysical and human environment may include:

- Releases to the environment (air, land, and water) of various substances (e.g., nutrients, metals, carbon) with concomitant increases in concentrations of various constituents in the environmental media (air, soils, water) and biota (vegetation, fish, birds, mammals, humans).
- Changes to the land and terrestrial habitat through clearing, blasting, excavating, waste and process residue deposits and release of emissions
- Changes in connectivity between shallow and deep groundwater and surface water
- Changes to aquatic habitat through clearing, blasting, excavating and release of emissions
- Changes to wildlife harvesting ability
- Changes to socio-economic opportunities (e.g., employment, compensation, or other human activities on the landscape)

Various mitigations will be utilized to minimize to the extent possible measurable effects. In pursuit of responsible environmental legacy and enduring community benefits, De Beers will:

- Ensure employees, contractors, and agents are aware of our sustainable development commitments and foster a culture of personal accountability based on mutual caring and respect for the environment, our employees and communities in which we operate.
- Responsibly operate our exploration sites and mines and maximize local community capacity by encouraging communities to participate in opportunities provided by our business.
- Provide a safe, secure, and healthy work environment.
- Be responsible and vigilant stewards of the lands and water we occupy through a precautionary approach, pollution prevention, and adaptive management.
- Seek to reduce the environmental footprint of our operations and related activities.
- Maintain compliance with all legal requirements and commitments.
- Set objectives for continuous improvement.
- Develop closure and rehabilitation plans to reduce long-term environmental and community impacts.
- Demonstrate honesty and integrity.

De Beers will develop the Project with mitigations and environmental design features to reduce effects to the environment. Mitigations will include, but will not be limited to, the following:

- Minimize extent of the mine footprint.
- Minimize the extent of permanent alteration or destruction of fish habitat.
- Obtain authorizations if required under the Fisheries Act.
- Develop an offsetting plan in consultation with the local communities and with Fisheries and Oceans Canada.
- Complete archaeological surveys of the footprint area.
- Avoid or preserve archaeological and/or heritage materials discovered during mine activities.
- Minimize land disturbance and potential for effects on permafrost.
- Water roads, airstrip, and laydown areas to suppress dust as required.
- Enforce speed limits (to reduce dust and vehicle emissions).
- Use of low-sulphur diesel or alternative energy sources for vehicles.
- Alternative primary power generation.
- Use autonomous vehicles.
- Monitor noise, air quality, water quality, soil quality, wildlife against standards and adaptively manage.

De Beers will develop the Project using standard and site-specific mitigation. The effectiveness of the mitigations will be evaluated through a series of management and monitoring plans that incorporate adaptive management principles. Adaptive management is a structured, pre-defined response strategy to changes in regulatory, environmental, or operational conditions. It is an iterative approach to environmental management that involves the timely evaluation of monitoring results, followed by assessment of, and if necessary, adjustments to management practices to implement solutions.

Waste Management

Waste Type	Quantity Generated	Treatment Method	Disposal Method
Overburden (organic soil, waste material, tailings)	TBD	<p>Options being considered in the design of the processing plant include:</p> <p>1) combining or separating the coarse and fine kimberlite, 2) adjusting the grain size of the coarse and fine kimberlite, and 3) adjusting the moisture content of the fine kimberlite (or combined coarse and fine kimberlite). Options are also being explored for accelerating the natural carbon sequestration properties of processed kimberlite through physical, chemical, or biological mechanisms.</p>	<p>It is envisioned that there will be one mine rock pile associated with each of the kimberlites that are mined. Mine rock will be placed on land in close proximity to each of the kimberlites after or during mining.</p> <p>Little to no organic soil exists in the Project area. Options for placement of processed kimberlite include on the land within a containment facility, over land through diffuse spreading, or deposit in the pits or within the mined-out underground.</p>

Non-Combustible wastes	TBD	Some non-hazardous waste materials may be transported off-site for re-use and/or disposal	Non-combustible non-hazardous waste will be disposed of on-site in an on-site landfill.
Sewage (human waste)	TBD	Sewage wastes may be mixed with soil to improve growing conditions.	Sewage will be treated on-site at a small modular treatment facility. Solid wastes will be disposed of on-site either to the on-site landfill, incinerated, or other method as approved by the Inspector.
Greywater	TBD	Greywater may be recycled to the extent possible prior to discharge.	Greywater will be discharged to an on-land sump, mixed with fine processed kimberlite for co-disposal, or otherwise discharged to the environment as approved by the Inspector
Combustible wastes	TBD	Some combustible wastes may be transported off-site for re-use/disposal.	Combustible wastes will be burned on site in an open burn pit and/or an incinerator.
Hazardous waste	TBD	Contaminated soil will either be treated in-	Hazardous wastes will be stored on site until such time as they can

situ, treated be safely
within an on- transported to an
site landfarm, off-site
or transported treatment/disposal
off-site for facility.
treatment and
disposal.
Contaminated
rock will be
placed within
the mine rock
piles.