



RAGLAN MINE

A GLENCORE COMPANY

Sivumut PROJECT

THE RAGLAN MINE
PROPERTY BEYOND 2020
(PHASES II AND III):

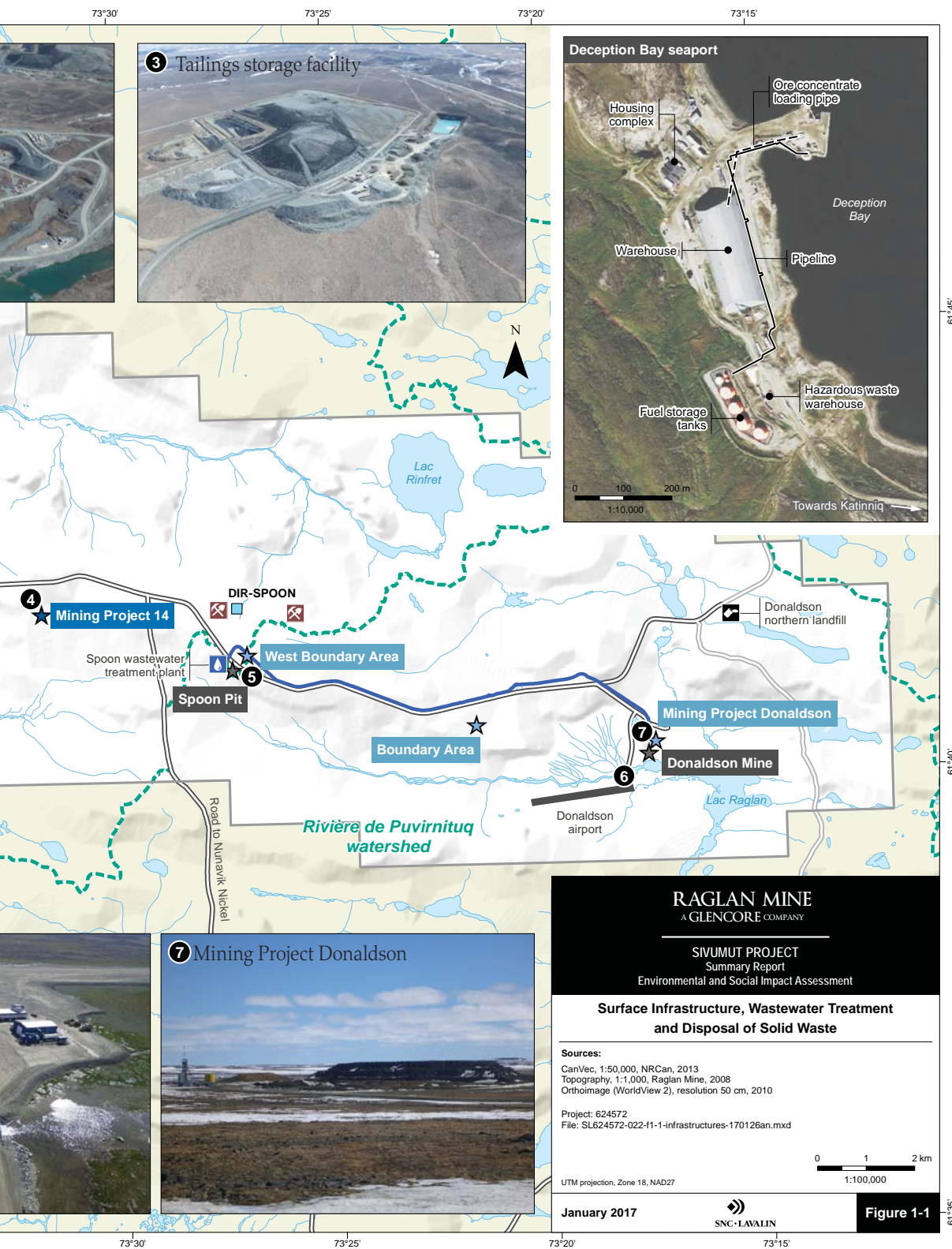
CONTINUATION OF
MINING OPERATIONS EAST
OF KATINNIQ



Raglan Mine's current operations (Phase I), which began in 1997, are expected to gradually cease from 2020 onwards.

In order to ensure the continuation of Raglan Mine's operations to 2040 and beyond, we launched the Sivumut Project.

We consider the Sivumut Project as an opportunity to maintain and increase partnerships with Nunavimmiut and, more specifically, with Salluit and Kangiqsujuaq. This project will contribute to providing economic benefits for Nunavik through profit sharing, jobs and contracts. The experience gained and the various studies and improvements achieved during Phase I have allowed Raglan Mine to minimize the environmental impacts of its operations while maximizing benefits for the local communities.



The Sivumut Project will...

- Remain on Raglan Mine's property (business as usual);
- Occupy a small surface area (underground mines), which will limit environmental disturbance;
- Use current facilities (i.e. ore processing plant, accommodation complex, Deception Bay installations, airport, roads, etc.);
- Continue to treat waste water with the same proven system;
- Maintain the same location for water effluent;
- Not affect other permanent water courses.



Project Description

The Sivumut Project aims to continue Raglan Mine's day-to-day operations until 2040 and beyond. This Project was designed in a way to continue using existing infrastructure, including the housing complexes in Katinniq and Deception Bay, the ore processing plant, power plants, workshops, water treatment plants, tailings storage facility (TSF), waste rock piles, road network, port, airport and warehouses.



PHASE II

Phase II of the Project will see the opening of two new underground mines, namely Mining Project 14 (MP 14) and Mining Project 8 (MP 8), both of which are expected to be in operation from approximately 2020 to 2035.

Mining Project 14

MP 14 will operate at a yearly production rate in excess of 850,000 tonnes per year of ore, for an assumed 8-10 year period. The temporary surface infrastructure will include pads for various buildings such as shelters, garages and warehouses, ore and waste rock storage pads, and an access road to connect the mine site's facilities to the main road. Water in contact with the ore and waste rock pads will be routed to a collection basin, via a network of ditches, and pumped to the Spoon pit for water treatment prior to being released into the environment. All waste rock extracted during the operations of MP 14 will be returned underground at the closure of the Raglan site.

Mining Project 8

MP 8 will operate at a yearly production rate in excess of 500,000 tonnes per year of ore, for an assumed 10-15 year period. The extraction of the ore production from this mine will partially use the same underground workings as the current mining operation, Qakimajurq. Surface infrastructures will be limited to ventilation raises (plus access routes) and a waste rock pad at Qakimajurq (if required).

PHASE III

Phase III of the Sivumut Project, whose total ore production will be similar to that of Phase II, will include three new underground mines (Mining Project Donaldson, Boundary Area and West Boundary Area).

Mining Project Donaldson, with a five year production life, will allow for an extraction rate of 450,000 tonnes of ore per year. Donaldson's current infrastructure will be reused to limit the project's environmental footprint. All waste rock to be extracted from the underground mine

will be deposited in the current pit, constituting the first step towards this pit's restoration. Water in contact with ore and waste rock will be routed to the existing catch basin through the existing ditch system and pumped to the Spoon pit for water treatment prior to being released into the environment.

The Boundary and West Boundary Areas will operate in a similar way to the Phase II mines and will therefore require comparable surface infrastructure.

TAILINGS STORAGE FACILITY (TSF)

To meet the needs for Phases II and III, the surface area of the TSF will be increased from 93 to 133 hectares. The water treatment capacity at Katinniq will need to be increased to allow for the treatment of additional runoff from the extension of the TSF.

SITE RESTORATION AND REHABILITATION

Raglan Mine will continue to conduct progressive reclamation activities during the course of Phases II and III, whereby waste rock will be returned to exhausted open pits or underground. At the end of Raglan Mine's activities, the final reclamation of the accumulation areas (TSF and waste rock piles) will begin. The site rehabilitation will take place over an estimated five year period. The financial guarantees for the final restoration work will be paid according to the requirements of the Mining Act.



Consultations in Nunavik

We understand that working in close partnership with Nunavimmiut is key for Raglan Mine's future. In order to ensure that the beneficiaries of the Raglan Agreement and regional stakeholders were properly consulted, and to respond to regulatory requirements pertaining to public consultation, a participatory consultation approach was implemented as part of the Sivumut Project ESIA.



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

The Sivumut Project is subject to an environmental impact assessment under the Environment Quality Act (EQA) of Québec and Chapter 23 of the James Bay and Northern Québec Agreement (JBNQA). As part of the planning process for the Sivumut Project, Raglan Mine is required to present the project and assess how it might impact communities and the environment in Nunavik. The Environmental and Social Impact Assessment (ESIA) report is publicly available online at: www.keqc-cqek.ca

The Kativik Environmental Quality Commission (KEQC) is the body responsible for reviewing projects located north of the 55th parallel. The KEQC has the mandate to analyze the ESIA submitted for its consideration, to hold public consultations, if required, with communities affected by the projects being assessed, and to make a determination about whether or not to approve these projects.

OPEN DIALOGUE PRE-CONSULTATIONS

Raglan Mine site

NOVEMBER 2014

CONSULTATIONS

Presentations of the Sivumut Project were given to the communities of Salluit and Kangiqsujuaq, as well as to regional organizations;
MARCH – JULY 2015

Two extra meetings of the Raglan Committee in
APRIL & JULY 2015

Nunavimmiut employees were consulted on the impacts of employment at the mine site in **JUNE 2015**

SIVUMUT SUB-COMMITTEE

The Sivumut Sub-Committee was formed by the Raglan Committee in **APRIL 2016** to ensure that Inuit parties and Raglan Mine could work together on reviewing the Sivumut Project. The Sub-Committee is composed of representatives from Salluit, Kangiqsujuaq, Makivik Corporation and Raglan Mine.

PRESENTATION OF THE FINDINGS OF THE SIVUMUT SUB-COMMITTEE

Presentation to the Raglan Committee members and elected officials from Salluit and Kangiqsujuaq (**DECEMBER 2016**)



Summary

of the main concerns raised during
the consultation for the Sivumut
Project ESIA

During the ESIA consultation process, the communities of Salluit and Kangiqsujaq, as well as Nunavik's regional organizations, have expressed a range of concerns along with potential mitigation actions. The main concerns may be summarized as follows:

Employment and training

- ▶ Concerns regarding Inuit employees' access to technical and high ranking job opportunities.
- ▶ Perception that there could be more coaching and support for the mine's Inuit workers, in particular to facilitate their integration into the work environment.

Inuit businesses

- ▶ Concerns that Raglan Mine should provide greater support for the hiring of Inuit employees by Inuit businesses through training programs.
- ▶ Requested greater clarity to explain the bidding and contracting procedures.
- ▶ Suggestion to work alongside Inuit businesses to build capacity.

Health and safety and socioeconomic impacts

- ▶ Suggestion to implement an assistance program for Inuit employees (drugs, tobacco, family problems) and a complaint management mechanism.
- ▶ Suggestion that there should be monitoring of socioeconomic impacts related to mining activities within the communities.
- ▶ Concerns that there is not enough collaboration between the mine and the land users to ensure the safety of all in Deception Bay.

Financial guarantees and profit sharing

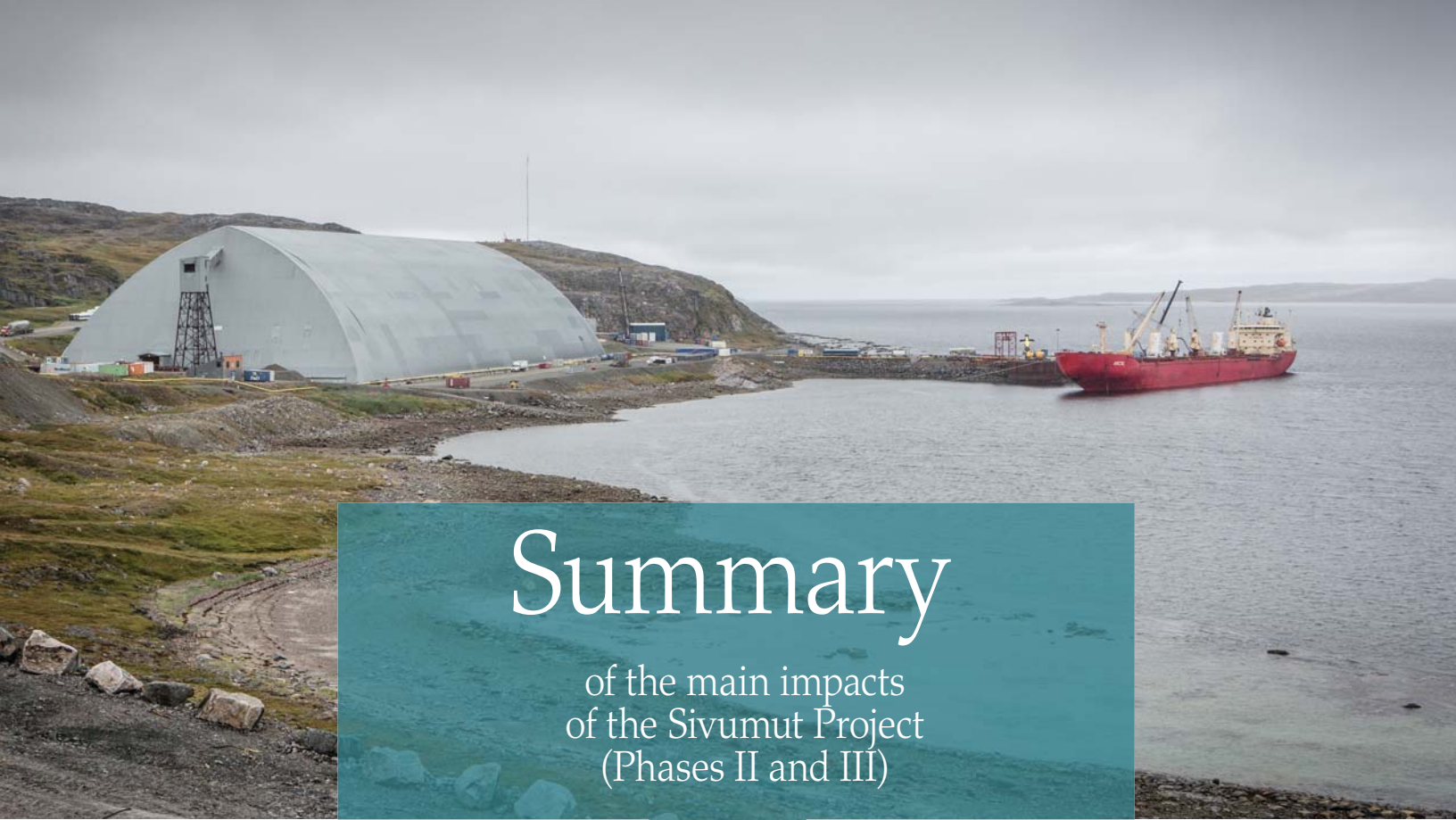
- ▶ Concerns that there is a lack of support in the use of resources allocated at both the household and community levels.
- ▶ Compliance with and negotiate updates of the Raglan Agreement for continued mining operations (20 years).

Environment and Land use

- ▶ Perception that mining activities affect the quantity and quality of fish due to the contamination of major rivers. Changes in fish morphology (different shape, colour and taste) and habitat have been noted. Belief that dust related to mining activities has an impact on human health, wildlife and flora.
- ▶ Suggestion that the ice and permafrost quality should be monitored.
- ▶ Suggestion that there should be independent environmental monitoring at Raglan Mine.
- ▶ Perception that there are impacts to caribou due to mining activities (food, migration route).
- ▶ Concerns regarding the risks of large-scale contamination of rivers due to the water system in place, including spills from the mine site.
- ▶ Suggestion that Raglan Mine should establish a network of contacts in the event of land users observing environmental impacts.
- ▶ Suggestion to increase large-scale sharing of information about environmental monitoring and Inuit should be involved in environmental monitoring.

Closure of the mine

- ▶ Concerns regarding Raglan Mine's capacity to pay for a full restoration of the mine site.



Summary

of the main impacts
of the Sivumut Project
(Phases II and III)

Sources of environmental impacts that are generated by the Raglan Mine operation include, among others: vehicle circulation at the mine site and to/from Deception Bay; electricity production by means of diesel-powered generators; surface terracing and excavation activities (including drilling and blasting); generation of wastewater (domestic and runoff); operation of the TSF; the use of the landfill; and road maintenance activities.



Sources of socioeconomic impacts that are generated by the Raglan Mine operation include employment and training of Inuit and contracts allocated to Inuit business, as well as the payment of financial guarantees and profit sharing to Inuit communities, in compliance with the Raglan Agreement. These generate both positive and negative effects. Land-users are also affected at various degrees by maritime transportation, vehicular traffic, waste management activities, as well as by the presence and use of platforms and access roads.



In the context of Phase II, construction activities will generate their own sources of impact, such as the building of new infrastructures (platforms, service buildings, quarries, power line and water pipeline); site preparation and excavation, and the construction of access roads.



Given that Raglan Mine has been in operation since 1997, a range of effective mitigation measures are in place to minimize environmental and social impacts; they will be maintained. Additional measures will be implemented in the context of the Sivumut Project, such as those summarized in the following pages. The complete and detailed information on impacts, additional measures and applicable environmental and social monitoring is available to all on the KEQC's website. Please consult the following : www.keqc-cqek.ca



Examples

of the impacts and the principle mitigation or improvement measures

Air and surface water quality

To minimize dust and air contaminant emissions, Raglan Mine will optimize the use of dust abatement on roads, mine sites, the Katinniq complex and on the road between the concentrator and the tailings storage facility. Raglan Mine will continue with the dust control program – based on dust abatement – near the Pangaligiak and Tasialurjuaq lakes, a measure that will also help protect the water quality in the Deception Bay area.

Surface Water Quality

To respect the current environmental legislation for water quality, Raglan Mine will construct permanent basins during the initial phase of the construction of new mines and will restore mines, pits and pad areas that are no longer used for operational activities.

Rivière-aux-Feuilles Caribou Herd

To avoid caribou habitat loss or any further impact on this species, Raglan Mine will control traffic through convoys in the presence of high number of caribou, and will adopt specific measures between June 1st and July 15th, such as minimum flying heights and will avoid activities west of the Kikialik Mine.

Fish Fauna

Fish and fish habitat are highly valued by the Nunavimmiut, and to avoid deterioration of the aquatic environment, Raglan Mine will use dust suppressants in relevant sections of the road from Deception Bay to Katinniq and will also reduce the vehicle speed limit in the summer. In addition, Raglan Mine will participate in the working group recently set up at the request of the Hunting, Fishing and Trapping Coordinating Committee (HFTCC) and will take into account its recommendations regarding the monitoring of the evolution of the Arctic char.

Socioeconomic Benefits

Raglan Mine will implement a comprehensive communication strategy targeting training, employment, the creation of local businesses, and the tendering process, as well as a strategic recruitment plan. In addition, Raglan Mine will perform a review of the Tamatumani Program's performance (which is Raglan Mine's training program dedicated to Inuit workers) with the regional partners to increase the employability and the number of skilled jobs held by Sallumiut, Kangirsujuammiut, and Nunavimmiut. Raglan Mine will work in collaboration with the local organizations to establish a strategic plan for annual meetings with suppliers and contractors and assess the possibilities to encourage the participation of smaller Inuit enterprises.



Quality of Life and Cultural Context

In terms of quality of life, the payment of financial guarantees, profit sharing, employment, local businesses, and contracts generated by Raglan Mine affect the Sallumiut, Kangirsujuammiut, and Nunavimmiut both positively and negatively. To enhance the positive benefits on the quality of life, Raglan Mine is prepared to work with its local and regional partners to expand the possibilities of supporting cultural, socioeconomic projects and family initiatives.

To further support families and employees, Raglan Mine will make psychological and social services available to employees in training to facilitate their adaptation to the work environment, and will assess the possibility of collaborating with projects in Nunavik in relation to alcohol and drug consumption, among many other measures. In addition, Raglan Mine will maintain the mandatory intercultural training for every new employee and intends to collaborate with regional initiatives aimed at preserving the Inuit culture.

Land Use

The presence of Raglan Mine and its operations affect land use activities in several ways, especially in the Deception Bay area. The Sallumiut and Kangirsujuammiut have voiced their concerns and their desire to be further involved in environmental monitoring activities. Consequently, Raglan Mine will hold two annual Environmental Forums in Salluit and in Kangirsujuaq, and will hire an Inuk from each community as liaison officers for activities related to environmental monitoring.

Several measures are also aimed at ensuring a safe environment, such as the application of dust suppressants and by conducting a regular analysis of water quality and of the quality of the Arctic char flesh in the Pangaligiak and Tasialurjuaq lakes. In addition, there will be annual discussions with Raglan Committee members regarding the planning of an ice bridge or the use of the aluminum bridge, and Raglan Mine will consider the recommendations that will come from the ice monitoring program in Deception Bay.

Archaeological Heritage

Several measures will be put in place by Raglan Mine in case of an unexpected discovery during construction works but also to ensure the integrity of archaeological sites. Careful monitoring will take place during surface construction works, including for access roads. Furthermore, a procedure was prepared in the event of a fortuitous discovery, whereby the Avataq Cultural Institute will be notified. In the case of existing sites, a competent firm will verify their integrity and validate that sign posts are still in place and are effective.

Sivumut PROJECT

MAIN FEATURES

OPERATIONAL FACILITIES

- Mine 3
- Tailings storage facility
- Donaldson Airport
- Accomodation Complex
- Ore Processing Plant

PHASE II (2020 TO 2035)

- Two new underground mines (Mining Projects 8 and 14)
- Use of current facilities (surface and underground) & road network
- Same tailings storage facility as Phase I

PHASE III (2032 TO 2038)

- Three new underground mines (Mining Project Donaldson, and Areas Boundary and West Boundary)
- Use of current facilities & road network
- Extension of the current tailings storage facility

CURRENT MINES (PHASE I)

- Kikialik
- Mine 2
- Katinniq
- Qakimajurq

HIGHLIGHTS OF FUTURE MITIGATION MEASURES

Increase involvement of Sallumiut and Kangirsujuammiut in environmental monitoring.



General improvement in collaboration / relations with Sallumiut, Kangirsujuammiut, and Nunavimmiut regarding issues including land use, family support, employment and training and contracts to Inuit businesses.



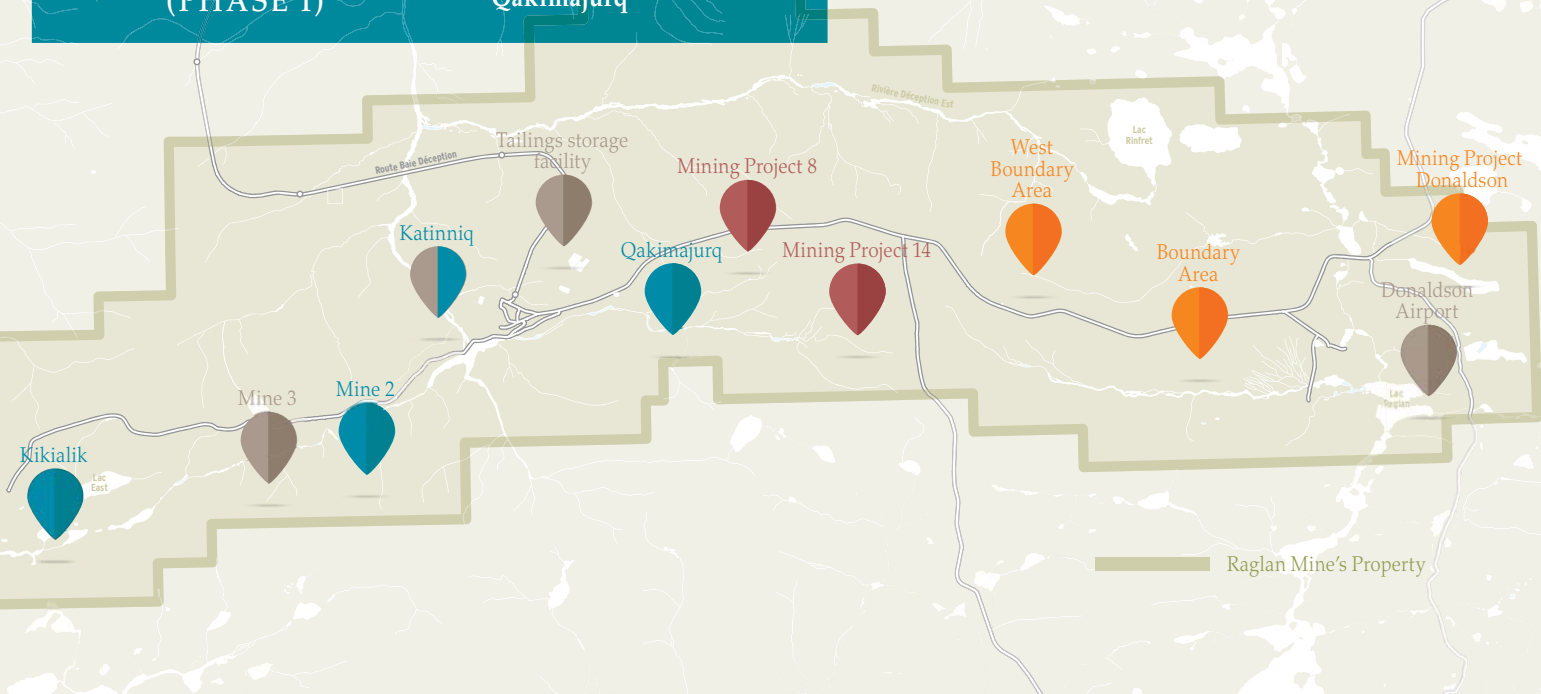
Pursue the dust control program – through the use of dust abatement on roads – and optimize it near Pangaligiak and Tasialurjuaq lakes, a measure that will help protect the air and water quality in the Deception Bay area.



Optimize environmental monitoring and put in place a social monitoring program.



Continue to apply mitigation measures, which have been developed during the past 20 years of operational experience.



Contact us

We welcome your questions and comments about our activities.

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