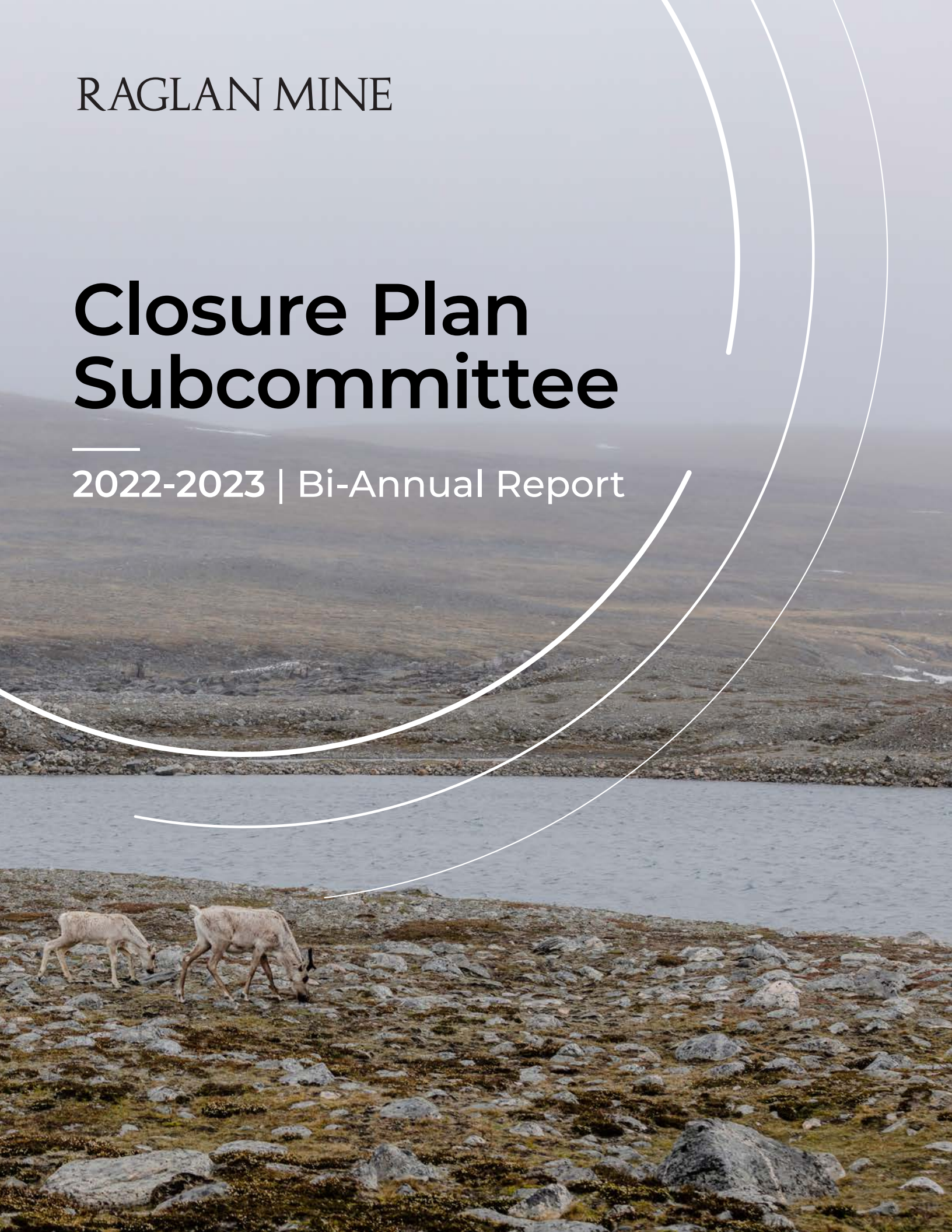


RAGLAN MINE

# Closure Plan Subcommittee

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2022-2023 | Bi-Annual Report

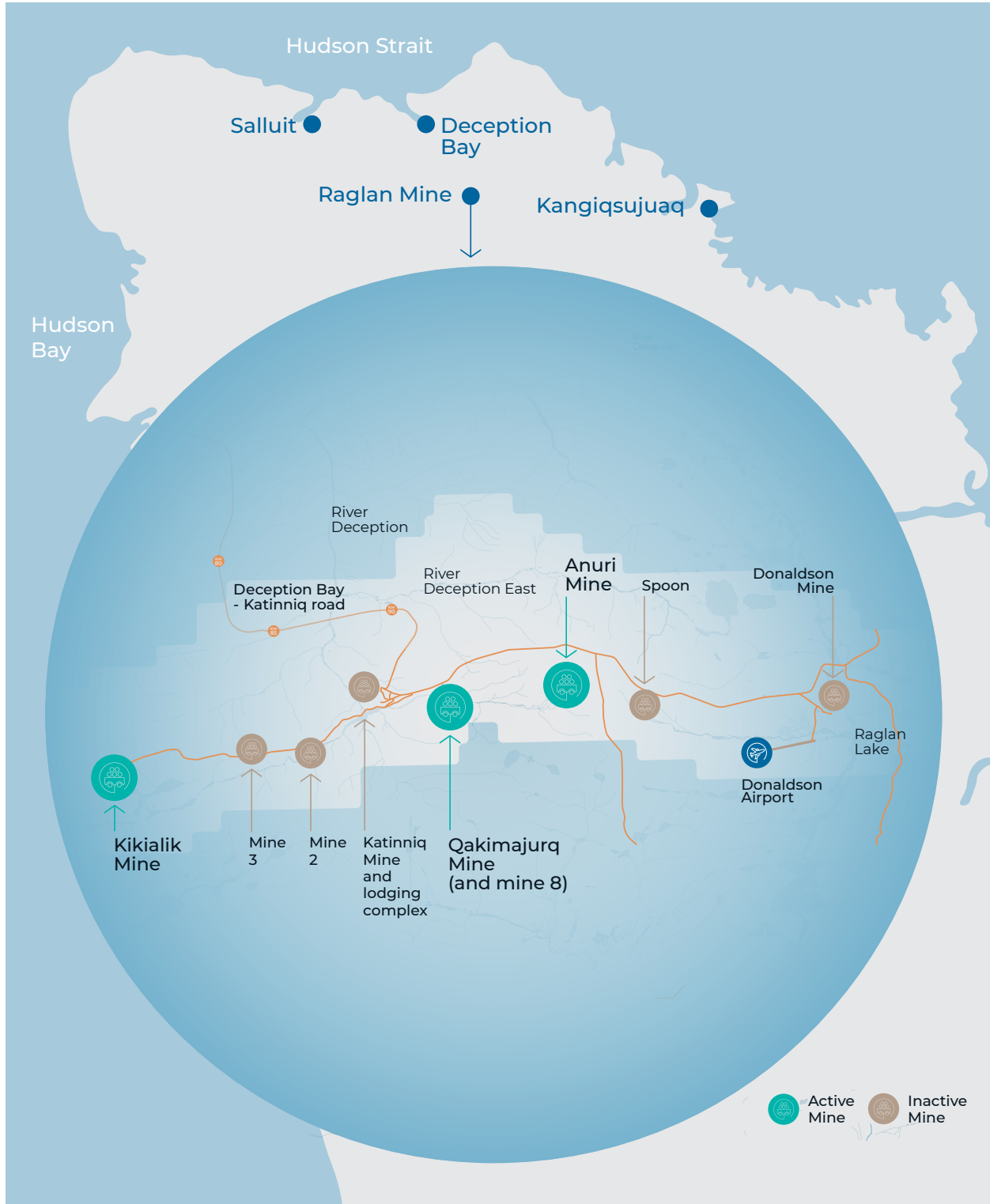


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# Location of Raglan Mine





# About the Subcommittee

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## Working Together Towards Closure

**T**hrough discussions with Inuit partners from Salluit and Kangiqsujaq, Raglan Mine came to realize that some of the communities' key concerns about the activities centered around mine closure practices, including tailings management.

In response, Raglan Mine committed to involving its host communities in the review process of the closure plan. Every five years, Raglan Mine submits a closure plan to the Quebec government, as mandated by mining regulations. This plan delineates the environmental remediation strategies intended for the eventual closure of the mine, encompassing aspects such as water and tailings management, the future of on-site infrastructure, and environmental monitoring.

The Natural Resources and Forestry Ministry of Quebec issues a Mining Site Rehabilitation and Restoration Plan Preparation Guide, which Raglan Mine complies with under the Quebec Mining Act.

The Subcommittee provides Raglan Mine with an avenue to refine closure strategies in collaboration with the Inuit partners, fostering the development of an integrated closure plan that satisfies both environmental and social considerations.



→ Raglan Mine's industrial complex

## Closure Plan Subcommittee

**A**lthough Raglan Mine is expected to remain operational for at least another 20 years, the Raglan Mine Closure Plan Subcommittee was launched in March 2018 to establish and maintain a dialogue with the Mine's Inuit partners about mine closure and to integrate the traditional knowledge of the communities of Salluit and Kangiqsujuaq into the closure plan for Raglan Mine.

The first meeting of the Closure Plan Subcommittee occurred in March 2018. Throughout 2018-2019 we held five meetings across 11 days. Between 2018 and 2023, we held 24 meetings. Through these meetings, Raglan Mine employees, community and regional representatives and university researchers are collaboratively developing a plan for the eventual closure and remediation of Raglan Mine.

Distinguished by its multi-stakeholder composition and early formation ahead of closure, the Subcommittee comprises members committed to achieving predefined objectives. Through the work of the Subcommittee, there are consistent opportunities to learn from one another, apply a wide variety of expertise (Inuit, industry and academia), and maximize the strengths and capacities of Inuit communities.

The members of the Closure Plan Subcommittee include Inuit partners from both Salluit and Kangiqsujuaq, representatives of Makivvik Corporation and Raglan Mine, and researchers from UQAT (Université du Québec en Abitibi-Témiscamingue) and TERRE-Net (Towards Environmentally Responsible Resource Extraction Network).





# Vision and Mission Statement

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## Vision Statement

We will strive for a mine closure outcome that will safeguard Inuit land use, resources, and ecological integrity, create benefits and build capacities in Salluit and Kangiqsujuaq, and ensure the transfer of skills, knowledge, and values between Inuit and industry to ensure efficient, safe and long-term solutions to closure and remediation at Raglan Mine.

## Mission Statement

The Raglan Mine Closure Subcommittee supports the objectives of the Raglan Agreement and aims to provide assurances for safe water, land and food resources, maximize community benefits, and contribute to a sustainable future for Salluit and Kangiqsujuaq by helping to mitigate the negative social, economic and ecological impacts of mine closure. This can be realized through the creation of culturally relevant closure goals and criteria and the integration of Inuit knowledge, enterprise, and values, scientific expertise, and industry know-how.





# Roles and Responsibilities of the Subcommittee Parties

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## Inuit Partners

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Ensuring compliance with the Raglan and Sivumut Agreements

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Ensuring that Inuit have a voice at the Mine Closure Plan Subcommittee level

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Ensuring that Inuit voices are reflected and addressed in the Raglan Mine Closure Plan

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Reporting back to the communities to ensure they are informed and have up to date information on mine closure planning

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Actively participating in workshops and visits to other mine sites

---

Participating in university level training to become familiar with mining laws and regulations

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Lobbying the industry and government (including universities) for support for Inuit concerns related to mine closure and monitoring on the site after mine closure

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Acting as co-chair for meetings

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## Makivvik Corporation

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Providing input and recommendations to the review, update and amendment of the Raglan Mine Closure Plan

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Ensuring that Raglan Mine Closure Plan and post-closure programs are as efficient, environmentally sound, and socially adequate as possible

---

Ensuring that local environmental laws and regulations are respected and implemented

---

Validating that all available technical advances and innovations are being executed to minimize environmental impacts and to restore the land to its original state as much as possible

---

Bringing awareness about the Raglan Mine Closure Plan Subcommittee and communicating relevant proceedings and findings to Nunavik Inuit

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## Raglan Mine (Glencore)

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Monitoring compliance with the Quebec government regulations and with the Raglan Agreement

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Ensuring a closure plan is submitted on time every 5 years

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Ensuring budgetary approval for Subcommittee meetings and activities

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Managing the logistics of Subcommittee meetings and activities for members and guests (travel, lodging, meal, etc.)

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Acting as co-chair for meetings

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## Social Expert

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The social reclamation expert on the Subcommittee is responsible for:

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Participating in Subcommittee meetings

---

Contributing expertise and input on closure and reclamation policy, especially as it relates to social and community aspects

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Coordinating research activities and communications related Raglan Mine closure

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Supervising graduate student participation and contributions to the Subcommittee

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## Technical Expert

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The technical reclamation expert on the Subcommittee is responsible for:

---

Providing independent technical expertise on the science of mine site reclamation

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Increasing the technical capacity of the Subcommittee members in relation to the reclamation of mine sites

---

Monitoring and reporting on technological advancements in the field of mine site reclamation

---

Finding relevant references where necessary

---

Preparing materials to help better understand the technical aspects of mine reclamation

---

Finding experts to explain phenomena related to mine reclamation when the subject is outside their field of expertise

---

↑ Charlie Ikey, Salluit representative, and Amélie Rouleau, Raglan Mine representative and co-chair of the Closure Plan Subcommittee

# Subcommittee Members in 2022-2023

<b>Kangiqsujuaq Representatives</b>	<b>Lukasi Pilurтуut</b> <b>George Pilurтуut</b>
<b>Salluit Representatives</b>	<b>Ealla Kaitak</b> (starting 2023) <b>Charlie Ikey</b> (starting 2023)
<b>Makivvik Representative</b>	<b>Jean-Marc Séguin</b> (2018-2023, co-chair 2022-2023) replaced by <b>Siasi Kanarjuak</b> (starting 2023)
<b>Raglan Mine Representatives</b>	<b>Amélie Rouleau</b> (Co-chair) <b>Joël Thériault</b> Engineer - Restoration and Closure (Environment) <b>Belinda Ikey</b> (2022-2023) previously Community Mining Liaison Officer, Salluit <b>Alasie Arngak</b> (2018-2023) previously Community Mining Liaison Officer, Kangiqsujuaq
<b>Social Expert</b>	<b>Dr. Arn Keeling</b> Social reclamation expert, Memorial University
<b>Technical expert</b>	<b>Dr. Bruno Bussière</b> Technical reclamation expert, Université du Québec en Abitibi-Témiscamingue
<b>Secretary and Onboarding Trainer</b>	<b>Charles Levac</b>

## Subcommittee observers

The Subcommittee can invite observers to assist with technical, administrative and research support. To date, the Subcommittee has invited graduate students, technical advisors, government observers and administrative support to attend meetings and to provide additional research, informational and organizational capacity to further the goals of the committee.





**FROM TOP LEFT TO RIGHT** → Charles Levac, Amélie Rouleau, Charlie Ikey, Arn Keeling, Joël Thériault, Bruno Buisnière. **FRONT FROM LEFT TO RIGHT** → Belinda Ikey, Ealla Kaitak, George Pilurttut and Lukasi Pilurttut.

## Nakurmiik to past and current members

We acknowledge the significant contributions of all current and former members of the subcommittee, whose insights and efforts have greatly enriched our discussions and advanced our collective goals. Their dedication has been instrumental in shaping the progress and impact of our endeavors.

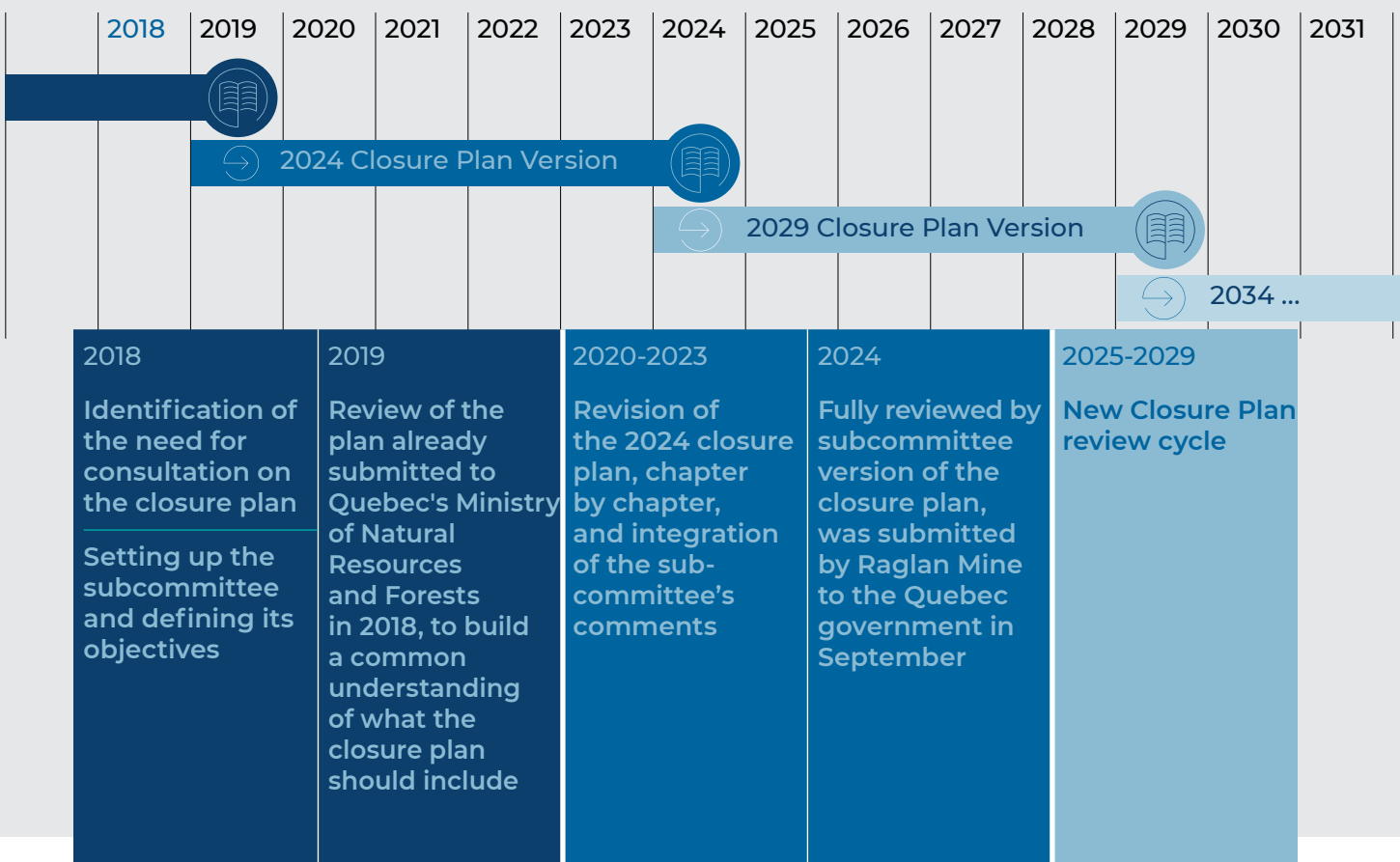
# Accomplishments in 2022-2023

**F**our main objectives have been set for the Raglan Mine Closure Plan Subcommittee. Each objective has a set of actions to be completed by specific Subcommittee members by specified dates. All these actions have been compiled into a working document to track our movements towards each objective. This working document is reviewed in preparation for each meeting.

## Four key objectives

- |                                    |   |  |  |
|------------------------------------|---|--|--|
| 1.                                 | 2.  | 3.   | 4.   |
| Keep the communities well informed | Develop the expertise of the Subcommittee | Establish clear governance structures for the Subcommittee | Review the full closure plan for Raglan Mine |

**FIGURE 1**  
Timetable of the Subcommittee’s Work Over the Years





## Community Engagement

Our foremost objective has been to keep communities well informed about our activities and progress. To achieve this, we have translated official meeting minutes into Inuktitut, ensuring accessibility and inclusivity. This also included presentations at Raglan Committee meetings and inclusion of the subcommittee work in the 2022 Annual Report of the Raglan Committee. Additionally, major accomplishments since 2018 were presented at the Nunavik Mining Workshop in March 2023.

## Subcommittee Expertise Development

- **We have prioritized the enhancement of Subcommittee members' expertise through comprehensive onboarding activities for new members and the establishment of transition documents.**
- **Several workshops were organized with Subcommittee and community members to define Inuit terms for mining-related concepts. These efforts led to the development of an Inuit Mining Lexicon, fostering cultural adaptation and understanding of mining terms.**
- **Microprogram Implementation: Significant strides have been made in implementing the microprogram, with courses conducted in person at each meeting. This program aims to deepen understanding and expertise in mine closure and reclamation efforts.**
- **Practical Learning Experiences: The Subcommittee engaged in practical learning experiences, including visits to the Université du Québec en Abitibi-Témiscamingue (UQAT) and discussions on restoration projects. Additionally, insights were gleaned from discussions with Glencore representatives about key lessons from other sites, such as Matagami and visiting a Goldex Manitou, a site with restoration in progress and portion completely restored.**

## Integral Closure Plan Review

In 2022, we successfully concluded the integral previous Closure Plan review (2019), marking a significant milestone in our progress.

## Participation in Research and Exchange

We participated in various forums and conferences, including the TERRE-Net Research Exchange Forum and the Mining Connection International Conference and the Australia Exchange Forum. These engagements facilitated discussions on mining developments and impacts, fostering valuable exchange of ideas and insights.

TERRE-Net, a network of university researchers working to develop and promote knowledge about the technical and social challenges associated with mine closure and reclamation, concluded its research activities in June 2023. TERRE-Net members of the Subcommittee included Arn Keeling and Bruno Bussière, respectively social and technical reclamation experts. A final report of TERRE-NET research activities is to be published in 2024.

Social expert Arn Keeling wrote a book chapter, co-edited with Sarah Holcombe and Sandy Worden (University of Queensland) and published in 2024: "Comparative perspectives on the social aspects of mine closure and mine site transition in Canada and Australia," which included research on closure planning and regulations in Quebec. Work continued on a joint special issue of a scientific journal, *Journal of Political Ecology*, building on the Indigenous Exchange Forum held in 2021.

## Recognition

Our efforts were recognized with the 2022 Research Partner Dean's Award from Memorial University, underscoring our commitment to research and supporting graduate students.

## Strategic Planning

Discussions were initiated to develop a 5-year plan spanning 2024-2029, focusing on integrating socio-economic objectives into mine closure and remediation efforts, to support a sustainable and impactful approach moving forward.

## Continued Plan Review

Throughout this period, we have continued to diligently review chapters of the future Closure Plan, with completion reached in September 2024. Original objectives of the subcommittee creation were revisited, emphasizing the integration of traditional knowledge, and understanding the social and economic aspects of mine closure.



## Sharing Through Common Technical and Linguistic Skills

Recognizing the need for effective collaboration on revising the closure plan with community members, it became evident that a shared comprehension of technical mining terminology was paramount and that training was needed.

Objectives	Mine closure aspects	Progress
<p>Ensure that all the Subcommittee members have a strong understanding of the basics of mine closure</p>	<ul style="list-style-type: none"> <li>• law</li> <li>• regulation</li> <li>• engineering</li> <li>• geology</li> <li>• water treatment</li> <li>• waste management</li> <li>• etc.</li> </ul>	<p>7 classes given by the end of 2023</p>
<p>Empower participants to engage in discussions with mining companies</p>		

Furthermore, with the introduction of new members commencing their tenure in 2022-2023, the subcommittee's secretary facilitated onboarding training, providing essential transitional materials for their integration.

Language posed another obstacle. Despite explanations of technical terms in English or French, these terms often lacked equivalents in the members' mother tongue, Inuktitut. To overcome this challenge, terminology workshops were developed, and will continue to be conducted. These workshops facilitate the creation of new Inuktitut terms that enables the Inuit Partners to articulate their perspectives on the mining industry directly through their mother tongue.

Closure Plan chapters revision status As of December 2023	Status
1.0 Introduction	—
2.0 General Information	—
2.1 Applicant identification	—
2.2 Site location and description	1 <sup>st</sup> revision
2.3 Property description	1 <sup>st</sup> revision
2.4 Geology and mineralogy	1 <sup>st</sup> revision
2.5 Description of current and future activities	Integrated in all chapters
2.6 Nature of mining operations	Integrated in all chapters
2.7 Geochemical characteristics of mine tailings	1 <sup>st</sup> revision
2.8 Characterization of surface water quality	—
2.9 Characterization of groundwater quality	—
2.10 Climate change	—
2.11 Storage and disposal sites	1 <sup>st</sup> revision
2.12 Non-hazardous residual materials	1 <sup>st</sup> revision
2.13 Petroleum products, hazardous materials and hazardous residual materials	1 <sup>st</sup> revision
3.0 General protection, Redevelopment and Restoration measures	—
4.0 Zone Katinniq	—
5.0 Zone 5-8	1 <sup>st</sup> revision
6.0 Zone 2 et mine souterraine 2	—
7.0 Zone 3	—
8.0 Zone East Lake (Kikialik)	—
9.0 Zone Westboundary	—
10.0 Zone projet minier 14	1 <sup>st</sup> revision
11.0 Zone Donaldson	—
12.0 Zone Baie Déception	—
13.0 Social aspects	Done
14.0 Post-remediation care and maintenance program	—
15.0 Economic and temporal considerations	—
16.0 Schedule for restoration and progressive reclamation work	—
17.0 Temporary cessation of activities	—
18.0 Emergency plan	—

## UQAT Microprogram Completion as of 2023

1 Introduction	Done
2 General information (Chapter 1 of the Guide)	Done
3 Closure requirement (Chapter 2 of the Guide)	Done
4 Closure plan content (Chapter 3 of the Guide)	Done
5 Acid mine drainage phenomenon	Done
6 Main reclamation methods for TSA and WRSA – Insulation covers	Done
7 Main reclamation methods for TSA and WRSA – Water infiltration barrier	Done
8 Main reclamation methods for TSA and WRSA – oxygen barriers	—
9 Climate change influence on mine site reclamation methods	—
10 Final exam (Multiple choice questions and oral exam)	—



## Terminology Workshops

The overall objective of these workshops was for participants to reach a common understanding of how to describe common mining terms in both plain language English and Inuktitut. It was also understood that this work would support both Raglan Mine and subcommittee members in future community engagements on closure planning and mining by providing interpreters with direction on how to interpret content presented to community members.

The main focus of the community workshops was to test the translations decided upon at the Laval workshop and to create a starting place from which to discuss them. Attendees consisted mostly of Elders. Generally speaking, participants agreed with proposed translations and changes were relatively minor (e.g., spelling or one preferred translation when two were provided).



The glossary is [available in Appendix C of this report](#)



→ Workshops | 2022 | Salluit

TABLE 1.

# Summary of Raglan Mine Closure Plan Subcommittee Accomplishments in 2022-2023

(as of December 31<sup>st</sup>, 2023)

Key Committee Objectives	Subcommittee Activities 2022-2023	Key Performance Indicators	2022-2023 Performance
<b>1.</b> Keep the Community Informed	Purchase of models of tailings facility and tailings permanently available in the communities. Included community members in the Terminology exercises. Translated official meeting minutes into Inuktitut, to promote accessibility and inclusivity.	Number of information activities held annually with community members	3 terminology meetings with the communities 1 presentation at the Nunavik Mining Workshop
	Presentations at Raglan Committee meetings and inclusion of the subcommittee work in the 2022 Annual Report of the Raglan Committee. Additionally, major accomplishments since 2018 were presented at the Nunavik Mining Workshop in March 2023.	Information for communities	6 Facebook posts on closure 1 annual Raglan committee report 1 website blog post on subcommittee
<b>2.</b> Develop the Expertise of the Subcommittee	Onboarding activities for new members and the establishment of transition documents. All members of the Closure Plan Subcommittee have participated to 7 sessions of the UQAT microprogram for community members "Arctic Mines and the Environment". The first course is MEIE1004 Mine Closure Plan.	Number of hours dedicated to the UQAT "Arctic Mines and the Environment" microprogram for community members. The first course in this microprogram is MEIE1004 Mine Closure Plan.	14 hours dedicated to the microprogram (7 sessions)
	Participation in Terminology exercises to define Inuit words for mining. Exchanges of experiences with Québec's Ministry of Natural Resources and Forests representatives.	Number of graduates from microprogram	0
	Participated in multiple forums, virtual conferences and at an international workshop for Indigenous communities. Visits to the Université du Québec de l'Abitibi-Témiscamingue (UQAT) and discussions on restoration projects.	Number of site visits with Subcommittee members	1 UQAT visit 1 discussion on Matagami 1 Forum Indigenous communities 1 Manitou closed site visit
	Exchanges of experiences about Matagami (Glencore) closure.		
<b>3.</b> Establish clear governance structures	Original objectives of the subcommittee creation were revisited, emphasizing the integration of traditional knowledge, and understanding the social and economic aspects of mine closure. Discussions were initiated to develop a 5-year plan spanning 2024-2029.	Written records of the Subcommittee's work throughout the year	9 meetings with minutes
	Minutes of all 9 meetings were duly validated by members		
<b>4.</b> Review the full Closure Plan	Completed review of the 2019 Raglan Mine Closure Plan and provided these comments to the Engineering firm working on the next Closure Plan. Review chapters of the future Closure Plan, with completion targeted by September 2024.	Number of chapters revised during the year at closure subcommittee meetings	2024 Closure Plan 1 revised chapter out of 27 chapters
	Participate to develop chapter on social economic aspects.		

# Priorities for 2024-2025

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## Review of the 2024 Closure Plan

This objective is the central priority by September 2024.

## Presentation of the 2024 Closure Plan

Intention is to meet Deputy Minister from Québec's Ministry of Natural Resources and Forests (MNR) to submit Raglan Closure Plan and present our subcommittee work. This will be the first time that our closure plan was reviewed by Inuit Parties including a social aspect chapter.

## Completing UQAT's Arctic Mines and the Environment Microprogram first course : Mine Closure Plan

The Subcommittee members will continue to follow the microprogram, designed by Dr. Bruno Bussière and obtain official certification. This will be a valuable tool for expanding the knowledge of the Subcommittee and for providing educational and training opportunities for community members going forward.

## Communication

Continuation of used of different communication media to inform communities of subcommittee works and deliverables.

Plan with communities an event to rename and brand Subcommittee with Inuit cultural reference.

Develop communication plan to promote awareness of mine closure.

## Terminology Exercise

Continue terminology workshop and seek partnerships.

## Governance Structure for Subcommittee

Assessment of 2018-2024 subcommittee mandate and establish a succession plan.



# Summary of Meetings

The 16th meeting occurred virtually due to COVID-19 travel restrictions. During the meeting, discussions centered on recommendations for research and development (R&D) communication to communities, leading to plans for a subsequent meeting. Additionally, decisions were made regarding the format of the mine closure and reclamation microprogram, which will now be conducted in person at each meeting.



→ **In front**  
 Charles Levac  
 Belinda Ikey  
 Arn Keeling  
 Jean-Marc Séguin

→ **In the back**  
 Amélie Rouleau  
 Alasie Arrgak  
 Caitlynn Beckett  
 Bruno Bussière

The 17th meeting focused on initiating the first course of the microprogram. In planning for the future, it is suggested that the 'Mining 101 Module' precede Class 1, and the Glossary section of Class 1 should be revised following a terminology. Closure Plan revisions were also discussed, emphasizing the need for a comprehensive summary at the end of the review process. Original objectives of the subcommittee creation were reviewed, emphasizing the integration of traditional knowledge, and understanding mine closure's social and economic aspects.

Due to travel restrictions, the 19th meeting was shortened to cover governance updates and meet with representatives from the Québec's Ministry of Natural Resources and Forests (MNRFF).



The 18th meeting. Key highlights included progress in the microprogram, two terminology sessions, and a discussion on integrating social aspects into the Closure Plan. The terminology sessions involved both subcommittee members and external guests, with over 20 participants engaging in discussions on Inuit terminology related to mining. A total of 24 words were reviewed during these sessions. Additionally, an external consultant led a session focusing on incorporating social considerations into the Closure Plan. This session featured a role play led by Amélie Rouleau and Arn Keeling, encouraging community members to share insights on closure scenarios and discussing various aspects such as social-economic benefits, quality of life, land use, and infrastructure.



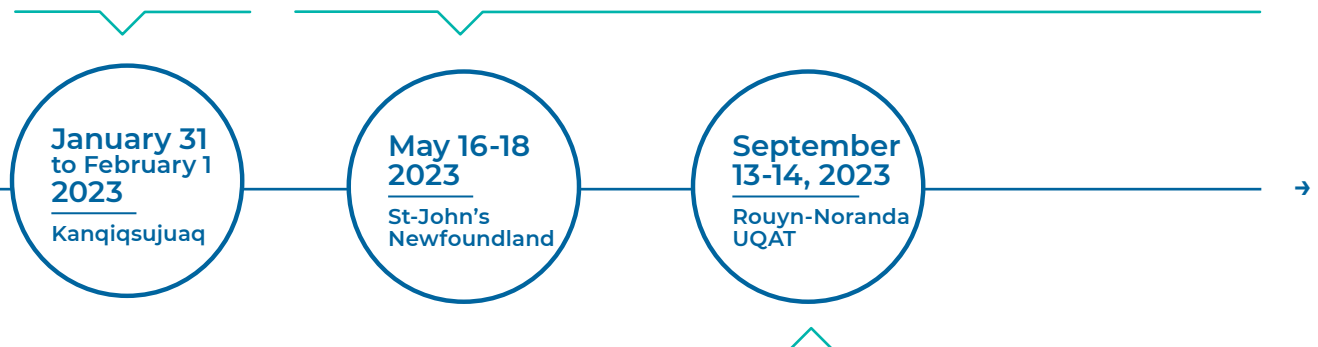
→ The Closure Subcommittee has won 2022 Research Partner Dean's Award of Memorial University recognizing the contribution to research and by supporting graduated students.

Arn Keeling, a longstanding member specializing in social aspects, hosted the group of the 21<sup>st</sup> meeting for the week at Memorial University of Newfoundland. The primary objectives of the meeting were to continue advancing the future Rehabilitation and Restoration Plan review process and to progress with the microprogram. Two chapters, Geology and Geochemical, were reviewed during the meeting, with numerous comments aimed at ensuring clarity for all readers.



The 20th meeting focused starting reviewing Closure Plan chapters, including the Rehabilitation and Restoration Plan review process, with discussions on socio-economic and Mine 14 chapters.

Discussion centered on preparing for the future of the Subcommittee once its initial mandate concludes, emphasizing the need for a transition mindset to facilitate succession planning. Strategic planning for community communications and engagement emerged as a key topic, recognizing the forthcoming heavy consultation by Raglan Mine and other entities with the communities. Attention was drawn to the risk of consultation fatigue and the importance of addressing this issue proactively.



The 22nd meeting of the Closure Plan Subcommittee took place on September 13th and 14th, 2023, in Rouyn-Noranda. Long term member Bruno Bussière's team (Technical experts) associated with the Université du Québec en Abitibi-Témiscamingue (UQAT) hosted our group for the week. The main objectives of the meeting and visits at the UQAT were to help better understand the different research related to tailings and closing sites. This by visiting the laboratories at the UQAT and visiting a Goldex Manitou, a site with restoration in progress and portion completely restored. Alexis Segal, a colleague from Glencore Canada, shared insights from the closure of Matagami Mines in 2022. Key lessons included the importance of early stakeholder engagement, financial provisions for community social plans post-mine, empowering local communities, and maintaining stakeholder engagement throughout the closure process. The Subcommittee initiated discussions to develop a 5-year plan spanning 2024-2029. They also explored key governance activities to integrate socio-economic objectives into mine closure and remediation efforts.



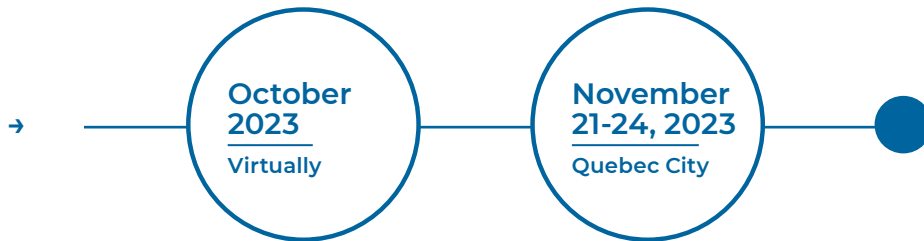
↓ Talking stick workshop at Wendake Museum



The 24th meeting of the Closure Plan Subcommittee occurred from November 21st to 24th, 2023, in Quebec City. Highlights included a visit to the Wendake museum, presentations on climate change and the primary objectives of the meeting were to continue advancing the future Rehabilitation and Restoration Plan review process and to progress with the microprogram. Continuation of the micro-program covering topics such as Acid Mine Drainage Phenomenon and reclamation methods.

There was also an update on the Asbestos Hill reclamation project by the Ministry of Natural Resources and Forestry (MNR). In 2023, a committee comprising representatives from Salluit and Kangiqsujuaq communities, along with various organizations, was established to address concerns related to Asbestos Hill. Their proposed next steps include continued data acquisition and identifying landfill locations for site mapping.

Questions arose regarding the ownership of Asbestos Hill, as certain Inuit parties erroneously linked it with Raglan Mine. In the next Addendum is a recap of the restoration timeline for Asbestos Hill.



The 23<sup>rd</sup> meeting of the Closure Plan Subcommittee was held on a virtual format for the first time since Covid-19 period. Members reviewed the following Closure Plan chapter: Hazardous and non hazardous material storage and disposal location.



# Asbestos Hill, Overview of Restoration History

---

In the 1970s and 1980s, Société Asbestos ltée operated the Asbestos Hill mine in Purtunig, near the current Raglan Mine Property. The Asbestos Hill infrastructure included a port at Salluit Aippangat (Deception Bay) and a road connecting Purtunig to the port. In 1984, Asbestos Hill ceased its operations, and the site was closed. Most of the facilities, equipment and infrastructure were left in place at the time.

Although the names may appear similar, “Société Asbestos Ltée” and “Société Minière Raglan du Québec Ltée” (Raglan Mine) are separate entities.

“Société Asbestos Ltée” is not related to Raglan Mine or Glencore.

As part of its Raglan project, the Quebec-based mining company, Société Minière Raglan du Québec Ltée (Raglan Mine) agreed to carry out, on behalf of Société Asbestos ltée, specific demolition work and associated restoration work in connection with the Asbestos Hill mining facilities at Purtunig, in accordance with an agreement entered into in 1995 with Société Asbestos ltée and the Québec Ministry of Natural Resources (now the MNRF).

This undertaking was made in connection with the acquisition by Raglan Mine of certain Deception Bay property, which did not include the Asbestos Hill’s facilities in Purtunig. The Asbestos Hill facilities were never owned or operated by Raglan Mine.

The contamination at Asbestos Hill is a major concern for the Inuit parties of the Subcommittee. Due to this, the subcommittee has yearly update with MNRF (Québec’s Ministry of Natural Resources and Forests) that assisted to one of meeting. MNRF has established a multistakeholder working group of Inuit communities and governments based on subcommittee experiences.

The restoration work carried out by Raglan Mine at the site was also in response to a request from Inuit in neighboring communities to restore the site’s aesthetic appeal and improve environmental quality.

# RAGLAN MINE

## Glossary of Mining Terms in Inuktitut

Tukisiniarutiit ujararnianirmuulingajut uqartaugusingit Inuktitut

ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ



In 2022, Raglan Mine facilitated a multi-stakeholder workshops to translate or find appropriate terms and descriptions in Inuktitut for key terms used in mining. The overall objective of these workshops was for participants to reach a common understanding of how to describe common mining terms in both plain language English and Inuktitut.

The three Terminology workshops produced and validated Inuktitut terms and descriptions for twenty-four (24) mining terms. Please note that the words are not yet formalized by Inuktitut linguists, our intent to share is to help gaining a common understanding about our communications.

**Disclaimer** - As the Inuktitut language has many dialects, there may be other ways of writing the words in this glossary. We reserve the right to modify this guide to accommodate other translations and to facilitate the understanding of mining terms by as many Nunavimmiut as possible.

## Inuktitut Terms and Descriptions

English term	Definition	Inuktitut translation	Inuktitut translation (in syllabic)	Description of the Inuktitut translation
<b>Acid mine drainage</b> (also known as acid rock drainage)	<p>Acid mine drainage is the runoff produced when water comes in contact with exposed rocks containing sulfur-bearing minerals.</p> <p>The reaction that occurs between the sulfur-bearing minerals, water and air forms sulfuric acid and dissolved iron. This acidic run-off then dissolves heavy metals including copper, lead, and mercury which pollute ground and surface water.</p> <p>* No acid mine drainage comes out of the site at the final effluents.</p>	Kinaanirluku Tuqannatu Ujarami Piju	ᑭᑎᑎᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ	Waste poison leaching from rock
<b>Closure</b>	Process of closing something	Isulittuq	ᑕᑭᑭᑦᑎᑦᑎᑦ	Closure
<b>Closure plan</b>	Mine operation to return the site to a satisfactory state.	Isulinnisanganut Parnasimauti	ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ ᑕᑭᑭᑦᑎᑦᑎᑦ	The plan to close

English term	Definition	Inuktitut translation	Inuktitut translation (in syllabic)	Description of the Inuktitut translation
<b>Concentrate</b>	A product containing a valuable mineral or metal (19-20% nickel) and from which the bulk of the non-valuable material has been removed. It is a valuable product that results from the mill processing (i.e. from the concentrator) and that is shipped to Raglan Mine's clients overseas.	Pissaq	ᐱᐘᐅ	Useful material
<b>Dry stack tailings</b>	Dry stack tailings is a method. Excess water is removed from the tailings in the process plant. The resulting tailings resembles a kind of moist sand. The tailings are then transported by truck to the tailings storage facility, stacked in lifts or layers, and compacted in place.	Ujararnianirlukunik Saluanganirsanik Qaliariitisiniq <i>Elder's variation:</i> Qaliariitisiniq <i>Youth's variation:</i> Ujararnianirlukimit saluanganirsunit	ᑯᑯᐅᑦᐅᑦᑯᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Mining waste that is as dry as possible, layer by layer
<b>Dust emissions</b>	Dust generated when wind blows on the dry-stacked tailings or by transportation (trucks, pickup, etc.) on roads.	Qaurtinirlukuit Pujuranga	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᐅᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Dust emissions
<b>Exploration</b>	Range of activities to help determine if there are minerals under the ground.	Ujarniaratsasiurniit	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Hunting for minerals, exploring for minerals
<b>Final effluent</b>	Mine wastewater requiring no further treatment before it is discharged into the receiving environment.	Salummasarsimajuq imaq	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᐅᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Clear/filtered waste water
<b>Geomembrane</b>	A low permeability plastic membrane that is used to cover tailings to avoid contact of tailings with air and water. The geomembrane is part of the tailings cover that aims at controlling water infiltration into the tailing storage facilities. It is placed between two layers of crushed material (gravel); it is not exposed to the sun.	Nunamut Asipagikkuti  <i>Variation:</i> Irpariikuti	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᐅᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ  ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	To contain   <i>Variation:</i> To contain
<b>Guarantee</b>	A guarantee is Raglan Mine's legal and financial obligation to provide the Quebec Government with proof that there is money available to carry out the closure work, should the company fail to honour its commitments. It is financial assurance.	Ukkuaturniup satuutingit	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Assurance of certainty for closure <sup>1</sup>
<b>Hazardous waste</b>	Hazardous waste is a material which, by reason of its properties, is a hazard to health or to the environment. It could be explosive, gaseous, flammable, poisonous, radioactive, corrosive, oxidizing or leachable.	Attanartutaliit Marlukuit	ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ ᑯᑯᑯᑦᐅᑦᐅᑦᑯᑦᐅᑦᑯᑦ	Leftover hazardous waste; something that is leftover that is not safe

1- Literal translation, with participants noting that a good explanation of the meaning behind this term would still be necessary.



English term	Definition	Inuktitut translation	Inuktitut translation (in syllabic)	Description of the Inuktitut translation
<b>Minerals dissolved in water</b>	When water (rain or snow) is in contact with tailings, the minerals can be dissolved by water (like salt in water). Part of water management and treatment is to reduce the minerals dissolved in the water to an acceptable level.	Imaluinnarulisimajuq  <i>Variation:</i> Imaq uarutsisimajurq kikiatsajanik	Δ L Δ Δ ~ a P c P L Δ ~  Δ c P Δ ~ P ~ σ ~ Δ ~ Δ L ~ Δ Δ P c P P L Δ ~ P P Δ c Δ b σ ~	Waters containing the minerals
<b>Mining life cycle</b>	The mining industry operates through a sequence of stages: exploration, discovery, development, production and reclamation.	Ujararnianiuq Piniarninga	Δ b Δ Δ ~ Δ σ Δ c Δ σ Δ ~	Mining life cycle
<b>Nickel</b>	Metallic element.	Kikiatsajaq	P P Δ c Δ b σ ~	Resource that becomes a metal
<b>Non-hazardous waste</b>	Any waste generated by a production, transformation or utilization process, or any substance, material, product that has been or will be abandoned and is non-hazardous.	Marlukuit	L ~ Δ Δ Δ c	Waste / garbage
<b>Ore</b>	Ore is the rock that contains enough valuable mineral that it can be profitably mined, processed and turned into concentrate. At Raglan Mine, rock is usually considered ore when it contains more than 1.5% nickel.	Pitsatalik Ujaraq	Δ c Δ C ~ Δ b Δ Δ ~	Rock that may contain something valuable
<b>Permafrost</b>	A permanently frozen layer of soil which occurs to variable depths below the Earth's surface.	Ajuittuq	Δ Δ Δ Δ Δ c ~	Permafrost
<b>Progressive restoration</b>	Progressive restoration, also known as rehabilitation, plans for post-closure activities during the entire mining process, from start-to-finish.	Utirtisivalliaugarniq Piusuvininganut	Δ Δ ~ Δ Δ ~ Δ c ~ Δ Δ Δ Δ Δ c ~ Δ Δ P Δ Δ σ ~ Δ Δ c	Slowly returning to the original state
<b>Social and environmental impact assessment</b>	A process that predicts the environmental and social consequences that a future project might cause and proposes measures to mitigate potential negative impacts.	Innusirmuulingajunik avatimuulingajunilu	Δ Δ P ~ Δ c ~ Δ Δ Δ Δ σ ~ Δ c Δ Δ Δ c ~ Δ Δ Δ Δ Δ c ~ Δ ~ Δ c Δ Δ Δ Δ Δ Δ Δ Δ Δ c P Δ ~ σ ~ / ~ Δ Δ Δ Δ Δ c ~	(no back translation was developed)
<b>Tailings</b>	A tailing is a fine-grained material by-product that is produced from the milling process. The milling process involves grinding the ore, and then separating the valuable minerals from other non-valuable minerals. The valuable minerals that contain nickel are in the concentrate. The non-valuable minerals are in the tailings.	Qaurtinirlukuit	~ Δ Δ ~ Δ Δ Δ c	What is left when you separate the valuable material

English term	Definition	Inuktitut translation	Inuktitut translation (in syllabic)	Description of the Inuktitut translation
<b>Tailings cover</b>	Technique used to cover tailings in order to control the generation of contaminant. Mine covers aim at controlling water infiltration, oxygen migration or mine waste temperature.	Katirsuaq Ulinga	ᑕᑎᑦᓱᑦ ᑭᑦᓴᑦ	Where you put what is left when you separate the valuable material, covered
<b>Tailings storage facility</b>	The tailings storage facility is a place. It is the specific boundary or physical location in which the tailings are deposited.	Katirsuaq	ᑕᑎᑦᓱᑦ	Where you put what is left when you separate the valuable material
<b>Waste rock</b>	Waste rock is mined rock that does not contain enough valuable minerals to make it economical to process. It may contain no valuable minerals or contain minerals at such low amounts that it is not profitable to process it.	Ujaraq Pitsataqangituq	ᑭᑦᓴᑦ ᑭᑦᓴᑦᑕᑦᓴᑦᑕᑦᓴᑦ	There's nothing in the rock where they dig to reach the valuable resource
<b>Water management</b>	Water management is the act of controlling water inside the boundary of the mine site.	Imaup Aulatauninga	ᑕᑎᑦᓴᑦ ᑕᑎᑦᓴᑦᑕᑎᑦᓴᑦ	Water management <sup>2</sup>

2- Participants had a hard time providing the back translation to English for this term. Participants noted that a good explanation of the meaning behind this term would still be necessary.



### Contact us

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*In this document, the words Inuk (singular), Inuit (plural), Nunavimmiuq (singular), and Nunavimmiut (plural) are used in accordance with the grammatical rules of Inuktitut. They are also used as adjectives.*

**RAGLAN MINE**  
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# Research Summaries

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## “Comparative perspectives on the social aspects of mine closure and mine site transition in Canada and Australia”, a chapter part of the book Mining and Indigenous Livelihoods: Rights, Revenues, and Resistance”

### SUMMARY

In response to the growing recognition of mine closure as a unique phase of the mining cycle, increasing scholarly, industry, and regulatory attention is being focused on the social and economic dimensions of mine site transitions.

Recent best practice statements and guideline documents promote “integrated closure planning” as an approach to mine closure that includes both environmental and socioeconomic objectives.

In spite of these commitments, in many jurisdictions the regulatory framework around closure planning neglects or overlooks the necessity for socioeconomic plans or lacks clear objectives for social outcomes. This gap inhibits the ability of industry and communities to adequately account for and mitigate the often devastating socioeconomic effects of mine closure, and integrate community objectives for mine site transitions.

In this chapter, we compare approaches to mine closure regulations in three jurisdictions—Queensland and the Northern Territory in Australia, and Nunavik (Northern Québec) in Canada—to assess whether and how regional authorities address the social aspects of mine closure and mine site transitions, including economic and cultural impacts and post-mining land use.

In particular, we focus on barriers and opportunities for local and Indigenous community participation and highlight emerging practices of community engagement in mine closure and transition planning. This comparison highlights the factors that shape the approach in these jurisdictions, including governance structures, Indigenous rights, negotiated agreements, and the scale and scope of mineral development activities.

### REFERENCE

Keeling, A., (to be published in 2024). “Comparative perspectives on the social aspects of mine closure and mine site transition in Canada and Australia”, a chapter part of the book Mining and Indigenous Livelihoods: Rights, Revenues, and Resistance” Keeling, A., Holcombe, S. and Worden, S. (Routledge – to be published, 2024)



## APPENDIX E

# Presentation and Publication Reference List

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Keeling, A., (to be published in 2024). "Comparative perspectives on the social aspects of mine closure and mine site transition in Canada and Australia", a chapter part of the book Mining and Indigenous Livelihoods: Rights, Revenues, and Resistance" Keeling, A., Holcombe, S. and Worden, S. (Routledge – to be published, 2024)

Holcombe, S., Elliott, V., Berryman, M., Keeling, A., Hall, R., Ngaamo, R., ... Ross River Dena Council Lands Office (2024). Indigenous Exchange Forum: Transition in mine closure. Research Directions: Mine Closure & Transitions. doi:10.33774/coe-2024-v86n9








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