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# About Nunavut: Mineral Exploration, Mining, and Geoscience Overview 2022

This publication is a combined effort of four partners: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), Government of Nunavut (GN), Nunavut Tunngavik Incorporated (NTI), and Canada-Nunavut Geoscience Office (CNGO). The intent is to capture information on exploration and mining activities in 2022 and to make this information available to the public and industry stakeholders.

We thank the many contributors who submitted data and photos for this edition. Prospectors and mining companies are welcome to submit information on their programs and photos for inclusion in next year's publication. Feedback and comments are always appreciated.

### **Note to Readers**

This document has been prepared based on information available at the time of writing. All resource and reserve figures quoted in this publication are derived from company news releases, websites, and technical reports filed with the Canadian Securities Administrators (CSA) through the System for Electronic Document Analysis and Retrieval (SEDAR) (www.sedar.com). Readers are directed to individual company websites for details on the reporting standards used. The authors make no guarantee of any kind with respect to the content and accept no liability, either incidental, consequential, financial or otherwise, arising from the use of this document.

All exploration information was gathered prior to December 2022. Exploration work was completed and reported during 2021 or 2022 for all projects with active status in this publication. Projects with inactive status had exploration work last completed on them in 2019 or 2020, have active mineral tenure, and may have valid land use permits and/or water licences as issued by CIRNAC and the Nunavut Water Board.

The term National Instrument 43-101 (NI 43-101) refers to a standard for the disclosure of scientific and technical information about mineral projects. This standard is supervised

by the Canadian Securities Administrators (CSA), the regulatory body which oversees stock market and investment practices, and is intended to ensure that misleading, erroneous, or fraudulent information relating to mineral properties is not published and promoted to investors on the stock exchanges overseen by the CSA. Resource estimates reported by mineral exploration companies that are listed on Canadian stock exchanges must be NI 43-101 compliant.

### Acknowledgements

This publication was written by the Mineral Resources Division at CIRNAC's Nunavut Regional Office (Matthew Senkow, Alia Bigio, Samuel de Beer, and Steve Sharpe, who provided cartography). Contributions were received from Linda Ham and colleagues at the CNGO, Jorgan Aitaok at NTI, and Paul Budkewitsch at the GN.

## Cover photo:

Front cover: Geologist on a gossan outcrop at SPC Nickel Corp.'s Muskox project. Courtesy of SPC Nickel Corp.

# Back cover photo:

Late afternoon traverse near Baker Lake. Courtesy of CIRNAC.

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This publication is also available in French under the title: Aperçu 2022: Nunavut Activités d'exploration minérale, d'exploitation minière et de géoscience

# Land Tenure in Nunavut

Spanning two million square kilometres (km²), Nunavut has 25 communities and an estimated population of 39,710. Inuit represent 84 per cent of the residents, creating the foundation of the territory's culture and values. With the exception of Baker Lake, communities are located on coasts, where hunting and fishing traditionally sustained Inuit. There is no road access to Nunavut, nor are there roads connecting communities within the territory. Access is mainly by air, with ships delivering supplies during the

open water season.

Heavily altered sulphide-rich outcrop at the West Zone target, on Canadian North Resources Inc.'s Ferguson Lake project, southwest of Baker Lake. Courtesy of CIRNAC

# Land Tenure in Nunavut



As a modern day treaty, the Nunavut Agreement provides certainty and clarity of rights to ownership and use of lands and resources within Nunavut. Under the Agreement, Inuit have fee simple title to 356,000 km<sup>2</sup> of land, making it the largest Indigenous land settlement in Canadian history. There are 944 parcels of Inuit Owned Land (IOL) where Inuit hold surface title only. The Crown retains the mineral rights to these lands. Inuit also hold fee simple title including mineral rights to 150 parcels of IOL, which totals 38,000 km² and represent approximately two per cent of the territory. Surface title to all IOL is held in each of the three regions (Kitikmeot, Kivallig, and Qikiqtani) by the respective Regional Inuit Association (RIA) while title to subsurface IOL is held and administered by Nunavut Tunngavik Incorporated (NTI). Exploration agreements and mineral production leases are negotiated by NTI on land where it owns the subsurface rights, while access permission and land use licences are granted by RIAs on all IOL.

The Government of Canada administers sub-surface rights for the remaining 98 per cent of Nunavut. Mineral claims, and mineral leases are issued pursuant to the Nunavut Mining Regulations by Crown-Indigenous Relations and Northern

Affairs Canada's (CIRNAC) Nunavut Regional Office. Surface rights for Crown land are administered according to the *Territorial Lands Act* and its regulations.

For more information on the location of IOL and Crown land in the territory, refer to the *Nunavut Mineral Exploration, Mining and Geoscience Projects 2022 Map.* For details on mineral tenure, visit the Nunavut Map Viewer at https://services.aadncandc.gc.ca/nms2-scn/gv/index.html. The table on page 5 displays the number of prospecting permits, mineral claims and mineral leases held in good standing as of November 2022 and the accompanying figure illustrates the location and extent of this mineral tenure.

The Nunavut Planning Commission (NPC) is responsible for land use planning in Nunavut and is the entry point to the regulatory system. There are two approved land use plans covering portions of Nunavut, the Keewatin Regional Land Use Plan and the North Baffin Region Land Use Plan. NPC is developing a territory-wide plan to guide and direct resource use and development in Nunavut; the most recent draft of the plan was released in June 2021. Once the Nunavut Land Use Plan is approved, it will replace both existing regional plans.

# Mineral Tenure in Good Standing in Nunavut

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Prospecting Permits	196	110	132	124	78	147	137	129	112	88
Claims	5,562	4,278	4,279	3,335	3,699	2,855	2,588	2,454	2,373	2,507
Leases	701	492	461	477	487	470	519	519	568	568

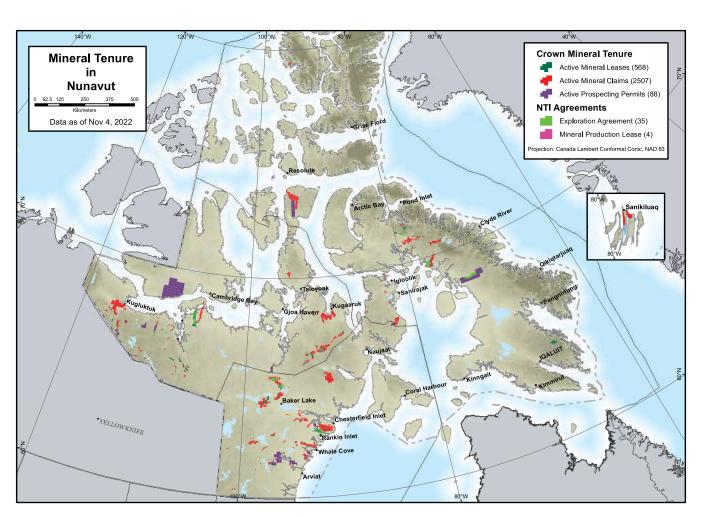
Source: CIRNAC

# **Exploration and Deposit Appraisal Expenditures in Nunavut**

<u> </u>										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Juniors (Millions \$)	111.0	73.6	42.5	35.6	61.0	60.1	20.0	31.4	44.0	129.7
Seniors (Millions \$)	146.6	84.4	172.5	168.9	116.0	95.5	96.4	39.3	75.2	102.7
Total	257.6	158.0	215.0	204.5	177.0	155.6	116.4	70.7	119.2	232.4

Source: Natural Resources Canada

<sup>\*</sup>Revised spending intentions current to September 2022



# Government of Canada



# **Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)**

Representing one-fifth of Canada's land mass, Nunavut has tremendous resource potential and is a place of significant opportunity for Inuit, Northerners, and all Canadians. In 2022, restrictions related to the COVID-19 pandemic were lifted, allowing more mineral exploration proponents to move ahead with programs. Statistics released by Natural Resources Canada indicate that \$232.4 million was spent on mineral exploration and deposit appraisal in the territory in 2022. This number almost doubled that spent exploring in 2021, and represents the highest spending by junior companies since 2012.

CIRNAC's mandate related to mineral resource development in Nunavut includes the implementation of the Nunavut Agreement, the administration of surface and subsurface rights on Crown land, and the stewardship of land and water resources.

# Implementation of the Nunavut Agreement

Signed in 1993, the Nunavut Agreement guarantees the right of Inuit to participate in decision-making concerning the use, management, and conservation of land, water, and resources. To support this, the Nunavut Agreement created five institutions of public government:

- Nunavut Planning Commission (NPC) prepares and assesses compliance with land use plans;
- Nunavut Impact Review Board (NIRB) conducts environmental impact assessments;
- Nunavut Water Board (NWB) manages fresh water resources;
- Nunavut Surface Rights Tribunal manages disputes related to surface rights; and
- · Nunavut Wildlife Management Board manages wildlife.

# **Administration of Surface and Subsurface Rights**

### **Nunavut Devolution of Lands and Resources Management**

Nunavut is the last jurisdiction in Canada where the Government of Canada, rather than the province or territory, administers federal Crown land. On August 15, 2019, the Minister of Crown-Indigenous Relations and Northern Affairs Canada, the Premier of Nunavut, and the President of Nunavut Tunngavik Incorporated (the Parties) signed an Agreement-in-Principle for the devolution of land, rights in respect of waters,

and natural resource management in Nunavut. Devolution in Nunavut is an essential step in the political and economic development of the territory. The signing of the Agreement-in-Principle was a significant milestone towards placing decision-making power over lands and resources into the hands of Nunavut residents, while ensuring that economic and other benefits of resource development in the region are shared with the people of Nunavut. The Parties are currently negotiating a Final Devolution Agreement, expected to be completed in 2022. Once the Final Devolution Agreement is in place, collaborative work will continue towards the transfer date, targeted for April 1, 2026. Until such time, the Government of Canada continues to lead the administration of lands and resources in the territory (as described below) as per respective departmental authorities.

# Nunavut Map Selection and the Nunavut Mining Regulations

The amended *Nunavut Mining Regulations* came into force on November 1, 2020 to facilitate the replacement of ground staking on Crown lands in Nunavut with the selection of mineral claims on an online map. The Nunavut Map Selection system was successfully launched on January 30, 2021, and 323 mineral claims covering more than 270,000 hectares of Crown subsurface rights were issued that year. In 2022, as of November, 80 mineral claims covering 82,857 hectares were issued. More information about the system can be found at https://www.rcaanc-cirnac.gc.ca/eng/1100100027889 /1614019040342.

# Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)'s Nunavut Regional Office

The Mining Recorder's Office administers subsurface rights on Crown land in the territory. As of November 2022, there are 88 active prospecting permits, 2,507 mineral claims, and 568 mineral leases.

The area held as mineral claims, prospecting permits, and mining leases, including those on Crown land and grandfathered leases on Inuit Owned Land, totals 4.95 million hectares as of November 2022.

The Mineral Resources Division reviews annual work reports that, under the Nunavut Mining Regulations, mineral rightsholders must file to show that they have met minimum annual work requirements. The reports are confidential for a period of three years, after which they are released to the public through NunavutGeoscience.ca (https://nunavutgeoscience.ca/en/). In 2022, 31 reports documenting \$40.53 million worth of work were released to the public.

Several divisions of CIRNAC's Nunavut Regional Office are involved in the stewardship of land and water resources. This includes participating in the regulatory process, the issuance of surface rights, enforcing authorizations and licences issued

# Government of Canada

by Institutions of Public Government or CIRNAC, enabling water quality and quantity monitoring that informs decision-making, and co-development of water management strategies.

The Impact Assessment Division and Regional Socio-economic Analyst participate in the Nunavut Impact Review Board (NIRB)-led impact assessments processes that are administered pursuant to Article 12 of the Nunavut Agreement and Part 3 or 4 of the *Nunavut Planning and Project Assessment Act*. In 2022, the Impact Assessment Division and the Regional Socio-economic Analyst provided environmental ecosystemic and socio-economic expertise and technical review comments to the NIRB in the form of written intervention and participation in technical meetings and public hearings related to two major project proposals and 48 smaller proposals. Reviews of five annual monitoring reports, submitted by proponents of five major projects, were also conducted to ensure compliance with terms and conditions of existing NIRB project certificates and project monitoring programs.

The Water Resources Division participates in the co-management of fresh water resources across Nunavut through support and engagement on: (a) The protection and responsible use of freshwater resources in Nunavut; (b) Water allocation and waste management under the Nunavut Water Board's water licence processes; (c) Water quality and quantity monitoring; (d) Water information management and outreach.

The Water Resources Division provides technical advice and comment to the Nunavut Water Board processes on water licence applications, amendments, renewals, cancellations, management plans and annual report reviews for major mining projects and municipal water licences.

The Water Resources Division also works in partnership with Federal and local partners to support freshwater management across Nunavut including;

- Environment and Climate Change Canada to monitor water quantity through hydrometric stations across Nunavut;
- The Kivalliq Inuit Association to monitor and review and participate in water quality monitoring initiatives around mining and exploration activities in the Kivalliq Region;
- The City of Iqaluit, through water sampling and analysis within the city boundaries; and,
- Collaborative initiatives between CIRNAC's Water Resources Division, NGMP, the Kivalliq Inuit Association, and the Nunavut Water Board for the study of cumulative effects water monitoring for the Baker Lake Basin through a program termed Inuu'tuti.

The Water Resources Division is also supporting the co-development of a Nunavut Water Management Strategy through collaboration with the Nunavut Water Board, Nunavut Tunngavik Incorporated, Government of Nunavut, Nunavut Planning Commission and Nunavummiut.

The Field Operations Division ensures compliance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the *Territorial Lands Act*, the *Nunavut Planning and Project Assessment Act*, aspects of the *Arctic Waters Pollution Prevention Act*, and related regulations. They also conduct inspections of sites that hold land-use permits, leases, and water licences to ensure compliance with the terms and conditions contained in these authorizations.

The Land Administration division is responsible for the issuance and management of surface rights on Crown land under the authority of the *Territorial Lands Act* and its Regulations. They also support the licensing and environmental assessment processes by incorporating terms and conditions of project certificates screening decisions issued by the Nunavut Impact Review Board into the authorizations they issue.

In addition to the monitoring noted above, CIRNAC hosts the Nunavut General Monitoring Plan (NGMP) Secretariat. NGMP is mandated under Article 12.7.6 of the Nunavut Agreement and the Nunavut Project Planning Assessment Act to monitor socio-economic and ecosystemic conditions within the Nunavut Settlement Area and to periodically report on findings. NGMP, through targeted investments, funds research initiatives that complement or build on existing knowledge and priorities. The purpose of this monitoring is to increase public access to important ecosystemic and socio-economic information and to inform decision-making. The NGMP is a partnership overseen by a steering committee comprised of CIRNAC on behalf of the Government of Canada, the Nunavut Planning Commission, the Government of Nunavut, and Nunavut Tunngavik Incorporated.



Water Resources staff conducting water sampling near Rankin Inlet. Courtesy of CIRNAC.

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# Government of NUMBER OF THE PROPERTY OF THE PR

The Government of Nunavut (GN) is committed to supporting a strong and diversified minerals industry based on best practices of sustainable development and partnerships between Nunavummiut and industry. Responsible development of our abundant natural resources contributes significantly to the economic foundation of Nunavut and is important for ensuring long-term prosperity of Nunavummiut.

A rugged escarpment near Kugaaruk makes a good location for the field work portion of the Introduction to Prospecting Course Courtesy of Government of Nunavut.

The GN Department of Economic Development and Transportation (EDT) provides guidance and support to the mining industry, the junior exploration sector, and individual prospectors. The Minerals and Petroleum Resources Division of EDT supports public geoscience, mineral exploration, prospector skills development, community awareness and education about the mining sector, and socio-economic monitoring. The Division has its headquarters in Iqaluit, with resident geologists and community mining awareness staff located in Arviat and Cambridge Bay. EDT also has regional offices in Kugluktuk, Rankin Inlet, Pond Inlet, and Pangnirtung.

# **Department Strategies**

The Department has commenced discussion and engagement with the private sector and Nunavummiut on a revised Mineral Exploration and Mining Strategy for the territory. It is intended to succeed *Parnautit: A foundation for the future* released in 2007. The principles and values in the mineral exploration and mining strategy continue to remain important, however we anticipate that revisions will serve to bring into focus priorities which have risen to greater prominence over the past decade. The new Strategy will include shared priorities of industry associations, community leaders, Nunavut Tunngavik Incorporated, and the Government of Canada.

A consultation guide is in development and will be released through the department's website. Inquiries and input are welcome at any time and may be communicated through email at minerals@gov.nu.ca.

# **Nunavut Geoscience**

The GN recognises the importance of improving public geoscience as a means of attracting investment and sustaining exploration interest in Nunavut. EDT provides core funding to the Canada-Nunavut Geoscience Office along with federal partners and advocates for improving National programs to support the development and production of geoscience information for Nunavut. Digital geoscience data is available for download from our open-access data portal (nunavutgeoscience.ca) which enables search and retrieval functions. The NUnavut MINeral (NUMIN) database contains over 2,700 mineral showings, exploration assessment reports as well as other government Open File reports and publications.

# **Impact Assessment and Monitoring**

EDT is the lead department for the GN on the assessment and management of socio-economic impacts and benefits associated with mineral development. The department leads three regional socio-economic monitoring committees in Nunavut for assessing the socio-economic impacts and benefits associated with major resource development projects and to

determine if they are performing according to forecasts in the environmental impact statement for the project. In addition to the impact assessment process facilitated by the NIRB, the monitoring committees provide a venue for stakeholders to take part in meaningful discussions surrounding resource development.

In 2018 the department published the first Nunavut Socio-Economic Monitoring Report, titled Tunngavia: Foundations for Development to provide the basis for a comprehensive, territory-wide, monitoring framework concerning the mineral sector. The 2020 report in this annual series is available. The reports are produced using data from company socio-economic monitoring programs, the Nunavut Bureau of Statistics, and Statistics Canada.

# **Discover, Invest, Grow Program**

New in 2022 is the Discover, Invest, Grow (DIG) Program, a Government of Nunavut mineral exploration incentive program. This inaugural program has been approved for three years and aims to support advancing mineral exploration projects with costs associated with diamond drilling or bulk sampling. Up to \$250,000 per project may be applied for from the \$1 million available in annual program funding.

# **Community Engagement Support Program**

In 2019, EDT initiated the Community Engagement Support Program (CESP) designed to support exploration and junior mining companies in the early phases of developing a project to carry out community engagement and consultation activities. Effective stakeholder engagement leads to increased confidence and buy-in from affected communities and helps to build good long-term relationships. Under the CESP, companies are eligible to apply for up to \$100,000 in annual funding to support engagement activities with Nunavut communities. Additionally, the applicant must have a signed acknowledgement from a community organization indicating that it has reviewed and approved the proposed consultation plan.

# Government of Nunavut



Class participants from Kugaaruk in the Introduction to Prospecting Course. Courtesy of the Government of Nunavut.

# **Community Education and Training**

EDT works with various stakeholders, such as the Department of Education, Nunavut Arctic College, Government of Canada, regional Inuit associations, and industry partners to coordinate mining-related education and training programs. The Nunavut Mine Training Fund provides our training partners with leverage funding to develop, coordinate, and execute mining training programs for Nunavummiut that will give them specific skills needed by mining companies and leading to employment opportunities. EDT contributes up to \$200,000 per year and an external panel (the Nunavut Mine Training Roundtable) reviews applications and recommends funding. Projects approved for 2022-23 include a funding for three recipients: the NWT and Nunavut Chamber of Mines for their outreach activities, the Hamlet of Arviat for their Heavy Equipment Operator training, and the Qikiqtani Inuit Association for their Tuttarvik Labour pool database project.

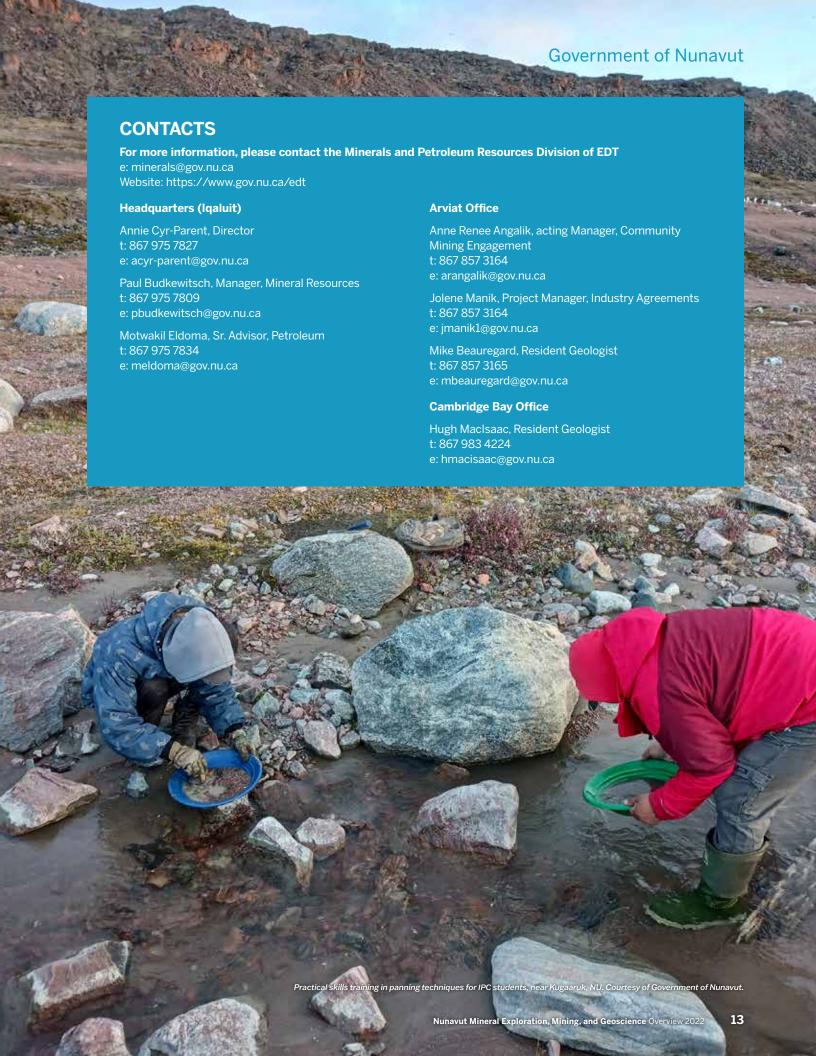
The Science Education Enabling Program (SEEP) provides grants and awards to Nunavut students interested in science, technology, engineering, and mathematics (STEM). The two components of SEEP are the Math and Science Awards Fund and the Independent Science Programs for Youth. EDT recognizes that a solid foundation in math and science helps Nunavummiut to pursue further education in STEM-related fields.

# **Prospector Development**

Since 1999, EDT geologists have offered a one-week Introduction to Prospecting Course (IPC) to interested residents. Over the past 24 years, interest has remained strong with more than 1,300 participants having completed the course. The IPC has been delivered 138 times by EDT Resident Geologists, reaching every community throughout the territory. The class and field instruction outlines basic principles of geology and introduces practical sampling skills to encourage an interest in prospecting. Applying Inuit Qaujimajatuqangit of the land to mineral exploration is encouraged. This year the IPC was offered in Pond Inlet, Clyde River, Iqaluit, Sanikiluaq, Kugaaruk and Cambridge Bay. A total of 44 participants successfully completed the training in 2022.

# **Nunavut Prospectors Program**

For over twenty years, EDT has supported the Nunavut Prospectors Program (NPP) to encourage exploration and prospecting for minerals in Nunavut by providing funds to individuals. Many participants who have completed the IPC have subsequently applied to the NPP to start their own projects. Successful applicants qualify for a financial contribution of up to \$8,000 (per recipient, per year) towards eligible expenses. Applicants must be a resident of Nunavut, hold a valid Prospector's License, and have demonstrated prospecting experience or completion of the IPC. Contributions are awarded based on the project proposal and past performance of the applicant in the program. In 2022, one new project was awarded funding.



# Nunavut Tunngavik Incorporated

Nunavut Tunngavik Incorporated (NTI) is the Inuit organization responsible for overseeing the *Nunavut Agreement's* implementation. NTI's mandate includes safeguarding, administering and advancing the rights and benefits of the Inuit of Nunavut to promote their economic, social and cultural well-being through succeeding generations.

# Nunavut Tunngavik Incorporated

As a modern-day treaty, the Nunavut Agreement provides certainty and clarity of rights to ownership and use of lands and resources within Nunavut. It gave Inuit fee simple title to 356,528 km² of land, making the Nunavut Agreement the largest Indigenous land settlement in Canadian history. There are 950 parcels of Inuit Owned Land (IOL) where Inuit hold surface title only. The Crown retains the mineral rights to these lands. Inuit also hold fee simple title, including mineral rights, to 152 parcels of IOL, which totals 37,646 km² and represents approximately two percent of the Nunavut Territory.

NTI's Department of Lands and Resources, in cooperation with the three Regional Inuit Associations (RIAs) – the **Kitikmeot**, **Kivalliq**, and **Qikiqtani**, who are the surface owners of the IOL parcels – is responsible for the implementation of Inuit responsibilities related to the management of IOL, minerals, oil and gas.

NTI holds the title to the minerals in, on or under IOL. The Land Title (surface) and Mineral Title (sub-surface) are severed and co-managed between NTI and the three Regional Inuit Associations in Nunavut. Each RIA holds the land title to all IOL in their respective region.

For these minerals, NTI issues mineral rights through a negotiated Mineral Exploration Agreement (MEA) that provides a holder with the right, if it meets the terms of the MEA, to receive a mineral production lease that allows for mining a discovered resource.

Under the Nunavut Agreement, the respective Regional Inuit Association is the holder of the Inuit Owned Lands including all specified substances and excluding the mines and minerals that may be found to exist within, upon or under such lands, together with the right to work the same. RIAs issue land use permits, licenses, rights of way and leases (including quarry permits and

concessions). They collect the appropriate application fees and set or negotiate land rental and Quarry royalty.

NTI cannot enter a Land Access Agreement that grants surface (land use) access. For land use access to IOL, a land-use right must be obtained from the respective RIA. NTI only enters into Mineral Exploration Agreements (MEAs) with companies where the IOL have been opened to exploration and mining by the appropriate RIA in writing, after consultation with their Community Lands and Resources Committee (CLARC) or Community Beneficiary Committee (CBC). NTI also obtains approval or the RIA's consent before entering into an MEA with a company.

NTI uses a map staking process for the acquisition of mineral rights. Interested parties submit to NTI an expression of interest, including a map of the proposed exploration area. Expressions of Interest and subsequent correspondence and negotiation are kept confidential by NTI and the applicable RIA until required to be made public, typically upon signing an MEA between NTI and the applicant.

Under the standard terms, successful applicants—upon executing the MEA and submitting the first year's annual fees—will be granted the exclusive right to explore for minerals throughout the exploration area. Holders of MEAs are required to submit annual exploration work reports to NTI that remain confidential for a period of up to three years.

Although the process described above normally applies, NTI, as a private organization, has complete discretion as to whether it will issue an MEA, what the process will be to obtain an agreement, as well as the terms of the agreement. The terms may include, for example, NTI holding a direct interest option in a project or additional benefits such as shares or milestone payments.



Geologist analyzing split core with a portable XRF device. Courtesy of StrategX Elements Corp.

# Nunavut Tunngavik Incorporated

NTI's Department of Lands and Resources staff in Cambridge Bay promote Inuit Owned Land by attending annual events in Yellowknife (Geoscience Forum), Vancouver (Mineral Exploration Roundup), Toronto (Prospectors and Developers Association of Canada - PDAC), and Iqaluit (Nunavut Mining Symposium). NTI also invites members from each RIA to the NTI booth space at PDAC, promoting themselves at one of the largest and longest-running mining conferences in the world. This co-management system on display to all conference delegates illustrates NTI Lands' staff and RIA representatives availability to interact with attendees, be it industry representatives, politicians, educators, students, potential investors, and to anyone with an interest in Nunavut.

Due to the prolonged COVID-19 pandemic, 2021–2022 has not seen many event opportunities to promote Inuit Owned Lands and projects. Also, most of the exploration in and around Nunavut was slow; some Inuit Owned Lands Mineral Exploration Agreements were dropped altogether. NTI is hopeful that the pandemic-hit mining and exploration sector will continue to overcome challenges and evolve in a world of uncertainty.

NTI believes that we garner the most interest in Inuit Owned Lands when everyone involved works together to find common ground. Together, we can forge a prosperous future.

# **Uranium, Mining and Reclamation Policies**

NTI has developed a series of policies applicable to exploration and mining, specifically a general Mining Policy, a Uranium Policy, and a Reclamation Policy. The policies specify that NTI will support exploration and mining provided that:

- there are minimal negative environmental and socio-economic impacts;
- · Inuit cultural and social needs are respected;
- investment in Nunavut is encouraged;
- · land-use conflicts are resolved equitably; and
- · Inuit economic opportunities are maximized.

The texts of all the policies are available from NTI.

# **Projects on Inuit Owned Lands (IOL)**

Many of the advanced exploration projects in Nunavut fall on IOL parcels for which NTI is the mineral title owner. The table summarizes the current active MEAs and their locations.

**Grandfathered Leases** are Mineral Leases established on Crown land that became IOL after the *Nunavut Agreement* was signed. The leases continue to be managed by the Crown, although the leases' rental fees and royalty are transferred to NTI.

## **Projects on Subsurface Inuit Owned Land**

Kitikmeot Region	
High Lake <sup>1</sup>	MMG Canada Ltd.
Hope Bay²	Agnico Eagle Mines Limited
Hood River	Blue Star Gold Corp.
WestKit-0001	West Kitikmeot Gold Corp.
Roma	Blue Star Gold Corp.
Goose	Sabina Gold & Silver Corp.
Pistol Lake	Leeward Capital Corp
Muskox Reef	Bathurst Metals Corp.
Kivalliq Region	
Angilak/Lac Cinquante	ValOre Metals Corp.
Sanaji	ValOre Metals Corp.
Amaruk	Agnico-Eagle Mines Limited
Meadowbank <sup>3</sup>	Agnico-Eagle Mines Limited
Meliadine <sup>4</sup>	Agnico-Eagle Mines Limited
Huckleberry-00016	Agnico-Eagle Mines Limited
Peter Lake	Meliadine Gold Ltd.
Huckleberry-0002	1233719 B.C. Ltd.
Heninga Lake	1293314 B.C. Ltd.
Duc	StrategX Elements Corp.
Qikiqtani Region	
Foxe	ValOre Metals Corp.
Baffin Gold	Commander Resources Ltd.
Haig Inlet Iron	Hemlo Explorers Inc.
Mary River⁵	Baffinland Iron Mines Corporation
EQE Bay	Baffinland Iron Mines Corporation

- The project involves Crown land and land held under NTI MEAs and grandfathered leases.
- The Boston deposit is located on surface IOL, while the Doris, Madrid, South Patch, Naartok and Suluk deposits are on subsurface IOL, distributed among grandfathered leases and NTI MEAs. A potential extension of the Boston deposit down-dip or along strike to the north will also be on subsurface IOL.
- 3. The project involves land held under NTI MEAs, grandfathered leases, and the Vault Mineral Production Lease issued by NTI.
- 4. The project involves land held under NTI MEAs as well as grandfathered claims and leases.
- The Mary River mine is located on a grandfathered lease. Additional showings and deposits in the area are located on a mixture of subsurface IOL and Crown land
- 6. John Tugak was the first Inuit Prospector to acquire IOL Subsurface.

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# Canada-Nunavut Geoscience Office

The Canada-Nunavut Geoscience Office (CNGO) is located in Iqaluit, Nunavut, and is a partnership entity co-managed and co-funded by Natural Resources Canada (NRCan), the Government of Nunavut (GN), and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). The partners sit on the CNGO Management Board with Nunavut Tunngavik Inc. (NTI) as ex-officio member and provide operational oversight to the Chief Geologist for the management of the office. Geologists with Canada-Nunavut Geoscience Office, the Northwest Territories Geological Survey, and Université du Québec à Montréal conduct fieldwork on the Point Lake

greenstone belt. Courtesy of CNGO.

The CNGO represents Nunavut's de-facto geological survey. In 2019, the Agreement-in-Principle (AIP) between the governments of Canada and Nunavut and NTI was signed for the initial step in Nunavut's devolution, which will transfer the administration of Nunavut's land and water resources and conservation to the territorial government. The Parties are negotiating a Final Devolution Agreement set to be completed late 2022 or early 2023; collaborative work will continue towards the actual transfer date, targeted for 2026. These agreements will improve governance in the territory with Nunavut assuming control over its Crown lands and natural resources. The AIP directly affects CIRNAC's Nunavut Regional Office and the CNGO, in that both organizations and their staff will be devolved to the GN.

The CNGO has a total of five professionals: four geologists – Chief Geologist, Paleozoic stratigrapher, surficial geoscientist and a Precambrian bedrock mapper – have expertise and capabilities to deliver on bedrock and surficial mapping, and one professional, a GIS Specialist, delivers products related to mapmaking and data dissemination.

Additionally, CNGO, CIRNAC and the GN's Department of Community and Government Services (CGS) have a current collaboration, using the strengths of a CIRNAC professional with expertise in permafrost. This collaboration involves the GN-CGS receiving funding until March 2023 from CIRNAC-Ottawa under its Climate Change programs. The arrangement allows GN-CGS and GN-Department of Environment (DoE)'s Climate Change Secretariat to obtain accurate scientific information for Nunavut permafrost projects. Discussions are ongoing for the future of this collaboration.

# **GeoTour of Iqaluit**

In 2019-2020, the CNGO hired an Inuit Learning and Development Program (ILDP) participant, Shauna Seeteenak, as part of programming offered by Pilimmaksaivik, the Federal Centre of Excellence for Inuit Employment in Nunavut. Pilimmaksaivik's mandate is to ensure the coordination of a federal government-wide approach to building a representative public service in Nunavut across all groups and levels. Shauna's project with CNGO was to work with the geologists to produce a Geological Tour of Igaluit brochure; this tour can be done either by walking (14 stops) or driving (4 stops) to visit local destinations in the city that are of geological interest. This brochure built on earlier works of Michael Hine, deceased. a former Iqaluit businessman and geologist who informally developed and led walking tours of downtown Iqaluit, and Dr. Joyia Chakungal, a former employee of CNGO, who worked with summer students in 2008 to produce a geological walking tour brochure that was never finalized. Although Shauna had moved on to ECCC before this brochure was produced, it was recently finished and produced, and is now available for circulation. CNGO will be providing paper copies of the brochure to local places (i.e., Nunavut Arctic College, Nunavut Visitor's

Centre, Nunatta Sunakkutaangit Museum), ensure the partners (CIRNAC, GN) have copies, and have digital copies available through the CNGO website.

# Paleozoic stratigraphy

Research continued by Dr. Shunxin Zhang on Paleozoic stratigraphy in 2022 and includes:

- a) Determining the origin of Paleozoic petroleum source rocks. Through analysing conodont microfossil communities of the Late Ordovician-age Red Head Rapids Formation on Southampton Island, this research has determined that the source rocks were deposited in a shallow water environment. The results are providing a new understanding about anoxic shallow-water origins of organic-rich black shales, and this research was published in the journal Palaeogeography, Palaeoclimatology, Palaeoecology in early 2022.
- b) Determining the youngest Paleozoic strata on southern Baffin Island. Dr. Zhang re-processed organic-rich carbonate rubble samples collected from previous field work on southern Baffin Island for conodont microfossils. The aim of this work uses the conodonts to determine the youngest preserved Paleozoic strata on southern Baffin Island. The results will provide direct information about 1) the erosion rate on southern Baffin Island, and 2) whether there are two organic-rich intervals in the Paleozoic sequence in the Foxe Basin, and all this information will have implications for petroleum exploration. One organic-rich interval was discovered in outcrop of the Amadjuak Formation by Zhang in 2012; the younger interval might already have been eroded off Baffin Island, but this unit could exist in the Foxe Basin. In addition to using the existing data, further fieldwork is planned for the 2023 field season to collect more data to support the interpretation.
- c) Improving the Paleozoic stratigraphy on south-western Boothia Peninsula and north-western Baffin Island. Dr. Zhang continued her work refining the Paleozoic stratigraphy of these areas. Because of pandemicrelated protocols, the NRCan-GSC labs closed at the start of the pandemic and reopened in the fall of 2022. Two projects were unfinished before the pandemic; work has resumed on these projects: 1) Lower and Upper Ordovician conodont biostratigraphy and revised lithostratigraphy in the fault and fold zones of the Boothia Uplift, south-western Boothia Peninsula, and 2) Ordovician conodont biostratigraphy on northwestern Baffin Island and the age and diachronism of the Ship Point Formation in Foxe Basin. The results of these two projects are expected to be published as journal papers in 2023.

# **Surficial Work**

Tommy Tremblay, CNGO's Surficial geologist, continues to develop and increase the regional surficial geology knowledge in areas of Nunavut. His work focussed on three principal projects.

- a) Geochemistry and mineralogy of surficial sediments database. By compiling the geochemical and mineralogical surficial data for Nunavut, the locations and brief descriptions of surficial sediment geochemical and mineralogical samples were published in CNGO's Summary of Activities 2021. An initial phase in the compilation of the geochemical data is currently underway for a selected method of analysis (ICP-MS with aqua regia dissolution). The database allows database requests, and additionally contains a complete set of metadata (e.g., method of analysis, dissolution and grain size) associated with each analysis.
- b) Glacial transport and erosion modelling. Conducting mineral exploration using glacial sediments requires a good understanding of the sequence of ice flows that affected the glacial transport of those sediments. A new numerical modelling project is being undertaken that attempts to model the path of eroded material during its transport by Quaternary continental ice sheets. The result from this effort is a model called GO-GTM a glacial erosion and transport model that is constrained by ice flow patterns and chronology, glacial transport distances, and erosion rates as determined from cosmogenic isotopes. This model is now ready for validation in different glaciated settings in Nunavut and other parts of Canada.
- c) Community water monitoring. In light of the continual requirements for the improvement of Nunavut's community water services infrastructure, this project aims to review the sources of water quality data for all of the communities in Nunavut. A paper was written for the CNGO's 2021 Summary of Activities entitled Community water quality data across Nunavut: an introduction to available data for community water supplies. Managing Nunavut's community water infrastructure will face challenges from various effects of climate change, such as variability of precipitation, chemicals and solutes released from thawing permafrost, and the changes in the runoff regime. Gathering baseline data on water quality and other geotechnical characteristics of community source watersheds can provide evidence to identify and mitigate potential risks to communities.

# **Bedrock Mapping**

Lorraine Lebeau, Regional Bedrock Mapping geologist, concentrated on three mapping projects.

- a) The Izok Lake targeted volcanogenic massive sulphide (VMS) project focuses on part of the Point Lake greenstone belt - known locally as the Izok Lake belt of the Kitikmeot region of Nunavut. Led by the CNGO, this project is in collaboration with the Northwest Territories Geological Survey (NTGS) and l'Université du Québec à Montreal (UQAM). The main goal of this project is ultimately to better define the volcanic stratigraphy at Izok Lake, and, by extension, that of the Point Lake greenstone belt, an area with known mineral resources. The field project was conducted from August 2<sup>nd</sup> to 15<sup>th</sup>, 2022, based out of the unoccupied MMG Resources exploration camp. The field crew of three geologists selected through-deposit and regional drill holes and logged these holes in detail. One hole was logged using portable X-ray fluorescence equipment. Several transect maps were created, and regional geochronological samples were collected by helicopter. Secondary research goals include the study of several massive sulphide lenses to better define the presence of critical minerals such as cadmium and gallium in the deposit. This project will provide enhanced geological knowledge in the Point Lake greenstone belt - and add incentives for critical mineral exploration in Nunavut and the Northwest Territories.
- b) The Jungersen River, northwestern Baffin Island, geochronology study. This geochronological study stems from the Fury and Hecla Geoscience project, a field campaign led by the CNGO and completed on northwestern Baffin Island in the 2018 and 2019 field seasons. Twelve gneissic/plutonic rock samples were collected for geochronology over the ~40,000 km² Jungersen River area. These samples have been analysed and interpreted, and the results are to be published as a collaborative manuscript between CNGO, Laurentian University and the Geological Survey of Canada. This contribution presents the first zircon and monazite U-Pb geochronology and trace element dataset for northwestern Baffin Island,
- c) The GEM-GeoNorth funded Angikuni targeted structural and stratigraphy project encompasses Precambrian bedrock mapping between Ennadai and Angikuni lakes in the Kivalliq region of Nunavut. Fieldwork is to be conducted in the summers of 2023 and 2024. The CNGO will lead this project in collaboration with the Geological Survey of Canada, the University of Regina, and Simon Fraser University. Scientists will focus on refining the stratigraphy and structural geology of areas with known economic potential. Currently, efforts are focussed on organizing the field logistics and applying for the necessary permits.

# NunavutGeoscience.ca and Other Databases

The global economy depends on the environmentally and socially acceptable extraction of natural resources (mineral and energy resources) that can only be achieved by accessing relevant geoscience data. Governmental geological surveys ensure that basic geoscience information, once generated, is publicly available and accessible. Also, a core mandate of governmental geological surveys is to securely store and maintain this information (e.g., digital and paper products, sample materials).

NunavutGeoscience.ca is continually evolving. Currently, led by the CNGO, the partners are in the process of revising and updating the website to ensure there will be an improved user interface with a single new application using modern technologies to provide users of the website a more efficient and easier experience.

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# Kitikmeot Region

The Kitikmeot region includes the western and northern portions of the Nunavut mainland, the King William and Stefansson islands, the Boothia Peninsula, and portions of Victoria, Prince of Wales, and Somerset islands. At 443,277 square kilometres (km²), it is the smallest of Nunavut's three regions and has an estimated total population of about 7,000 people living in five permanent communities. Cambridge Bay (Ikaluktuuttiaq), located on Victoria Island, is the largest community in the Kitikmeot. Gjoa Haven (Uqsuqtuuq) is located on King William Island, and Kugaaruk, Kugluktuk, and Taloyoak are located on the mainland. Yellowknife, the capital of the Northwest Territories, is the main logistical and supply center for the region.

The Kitikmeot region is dominated by Archean and Precambrian rocks of the Bear, Slave, and Churchill provinces, and by the Paleozoic Arctic Platform in the north. This region has been explored historically for gold, base metals, uranium, platinum group elements, and diamonds. As of November 2022, the Kitikmeot region had 858 mineral claims, 44 prospecting permits, and 270 mineral leases covering a combined 2.16 million hectares (ha).

Four past-producing mines are located in the Kitikmeot region: the Roberts Bay and Ida Bay silver mines located in the Hope Bay area, and the Lupin gold mine and Jericho diamond mine located near Contwoyto Lake and the Northwest Territories border.

Agnico Eagle Mines Limited purchased TMAC Resources Inc. in 2021, gaining ownership of the Doris gold mine and mineral tenure covering the surrounding Hope Bay greenstone belt. The company announced in early 2022 that mining from Doris will remain suspended in 2022 and 2023 and that the primary focus will be exploration to increase mineral reserves and mineral resources at all the Hope Bay deposits. Exploration drilling at Hope Bay totalled 76,200 m during the first nine months of 2022. Most of this drilling was done at Doris, with three drill rigs operating at surface and three rigs operating underground. Work on the BTD Connector zone has confirmed it remains open on strike to the north, and drilling in the West Valley zone confirmed the extension of the deposit to the south and above the dyke. At the Boston deposit south of Doris, camp refurbishment was completed in preparation for a 2023 exploration drilling program.

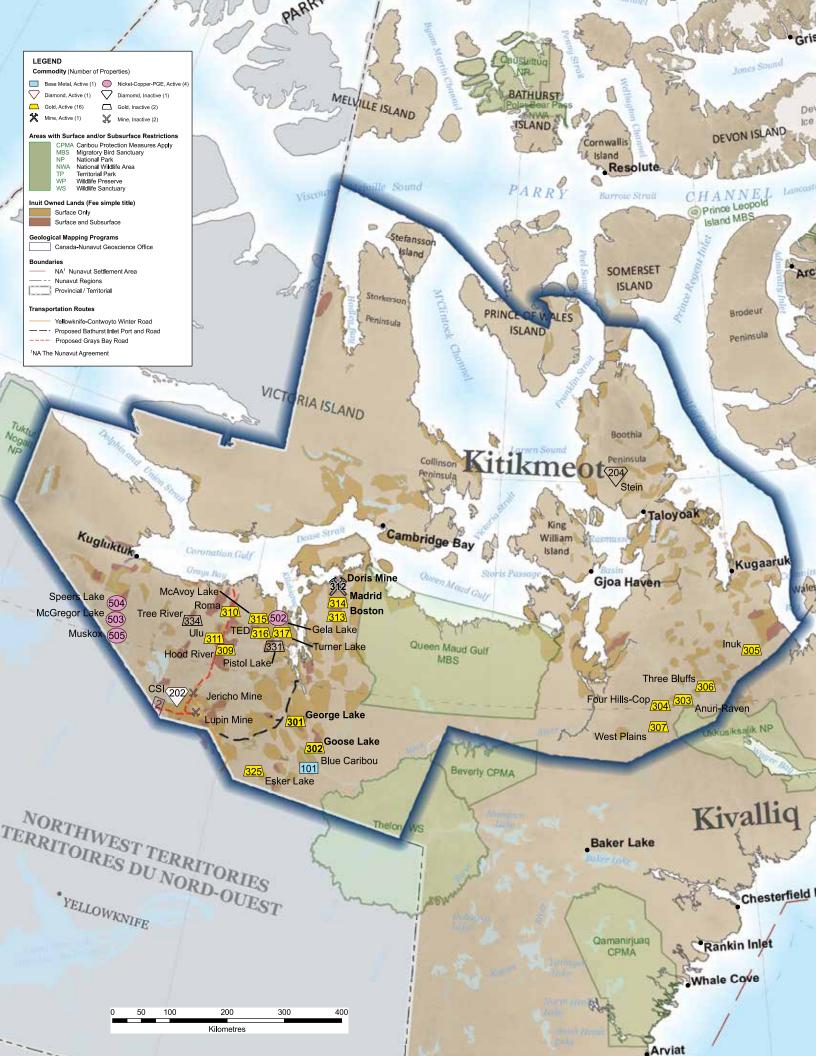
Sabina Gold & Silver Corp. announced its positive production decision for the Goose deposit at the Back River project in September 2022. Construction work on mine facilities is planned to start in early 2023, and the company anticipates reaching commercial production at Goose in Q1 2025. The Goose deposit includes 6.32 million ounces of measured and indicated resources grading 5.88 grams per tonne gold (g/t Au), and inferred resources total 2.86 million ounces grading 6.44 g/t Au. The feasibility study forecasts an average production of 233,000 ounces of gold per year over a 15-year mine life. Mapping and rock sampling were carried out at the George Lake property to identify drill targets outside that deposit's current resource. Sabina completed infrastructure at Back River this year including an expanded laydown area and all-weather road at the port facility, fuel delivery system improvements, fuel storage tank berms, permanent water systems to supply camp facilities, and ground

preparations for concrete foundations for camp and mine infrastructure. Initial underground exploration drilling on Umwelt deposit is planned for Q4 2022. Sabina submitted a proposal to the Nunavut Planning Commission (NPC) and Nunavut Impact Review Board (NIRB) for a 59 megawatt renewable energy facility including wind turbines and solar panels for power generation, and battery storage capacity of 50 megawatt-hours, which would allow significant reductions in fuel consumption, greenhouse gas emissions, and winter road traffic.

Blue Star Gold completed a 28-hole diamond drilling program on its Ulu and Hood River properties. Just over 3,800 metres of oriented core were drilled on the Central Axis and Gnu zones, with data collected to be used to refine the property's geological model. A till sampling program on the Roma property to the north identified several new prospective targets. Strong drill results from the Flood zone will be integrated into a revised resource estimate. Drilling at Gnu was intended to follow up on last season's discovery of a polymetallic gold-mineralized vein system. A previously unknown shallow mineralized vein was identified at Gnu and included an interval of 1.18 m of 6.78 g/t gold. The company also flew a 3,500 line-km helicopter airborne magnetic survey across all three properties.

Viridis Mining and Minerals Limited optioned the South Kitikmeot gold project, consisting of seven properties distributed along the Back River-Contwoyto greenstone belt, from Silver Range Resources in 2021. The company completed a total magnetic field ground geophysical survey at the Esker Lake property in May 2022 covering the Brandon Hill folded iron formation prospect and identified a possible continuation of the iron formation to the northwest. Regional exploration and prospecting are planned to follow up the geophysical survey results along with resampling of historic Esker Lake drill core.

SPC Nickel was active at its Muskox property 170 km south of Kugluktuk. In May 2022 the company announced it had completed remodelling of historical very low frequency electromagnetic geophysical data and was integrating the results with the existing property data set. The re-evaluation of the data allowed the identification of a highly prospective anomaly with similarities to other dyke-hosted nickel systems such as Voisey's Bay. The short field program included revisiting historical nickel-copperplatinum group elements (PGE) showings to collect assay samples, and regional lithogeochemical sampling across the project's tenure. Mineralization on the project occurs in the gabbro-norite host rock as centimetre to metre-scale pods of copper- and nickel-rich massive sulphides, surrounded by nettexture sulphide haloes; as disseminated blebby copper- and PGE-rich sulphides; or as anastomosing veins of copper- and PGE-rich semi-massive to massive sulphides.





The 445,109 km² Kivalliq region includes the southern mainland portion of the territory, bounded by Manitoba to the south, the Kitikmeot region and the Northwest Territories to the west, and Hudson Bay to the east, and includes Southampton and Coats islands. Exploration and mining in this region are mobilized out of Rankin Inlet (Kangiqliniq), the regional hub, and Baker Lake (Qamani'tuaq), the territory's only inland community. The other Kivalliq communities are Arviat, Whale Cove (Tikirarjuaq), Chesterfield Inlet (Igluligaarjuk), Coral Harbour (Salliq), and Naujaat. The past-producing North Rankin nickel mine and the Cullaton-Shear Lake gold mine west of Arviat were two of Canada's earliest mines to operate above 60° latitude. The population of the Kivalliq region was estimated at 11,673 in 2020, with more than half of those inhabitants in Rankin Inlet and Arviat.

The Kivalliq region's geology includes Archean and Proterozoic plutonic rocks, large Paleoproterozoic sedimentary basins, and metasedimentary and greenstone belts of the Rae and Hearne domains of the Western Churchill Province. Paleozoic-age sedimentary strata of the Hudson Bay Lowlands are found in the east on Southampton and Coats islands. The Kivalliq's economic potential is diverse and includes a number of significant mineral occurrences and known deposits, including historical and current resources in gold, uranium, diamonds, nickel, and platinum-group and rare earth elements. As of November 2022, the area held under mineral tenure in the region decreased to 1.67 million ha from to 1.98 million ha in 2021. There are 1,116 mineral claims, 186 mineral leases and 26 prospecting permits.

Gold continues to be the main exploration target in the region, with a recent significant increase in Ni-Cu-Co-PGE exploration. Operations at Agnico Eagle Mines Ltd.'s sites in the territory returned to normal following pandemic-related disruptions. At the Meadowbank Complex, underground production from the Amaruq deposit began as of August 1, 2022. Total gold production at the Meadowbank Complex for the first nine months of 2022 totalled 279,457 ounces. Agnico Eagle also announced the pouring of the four millionth ounce of gold from the Complex in Q3.

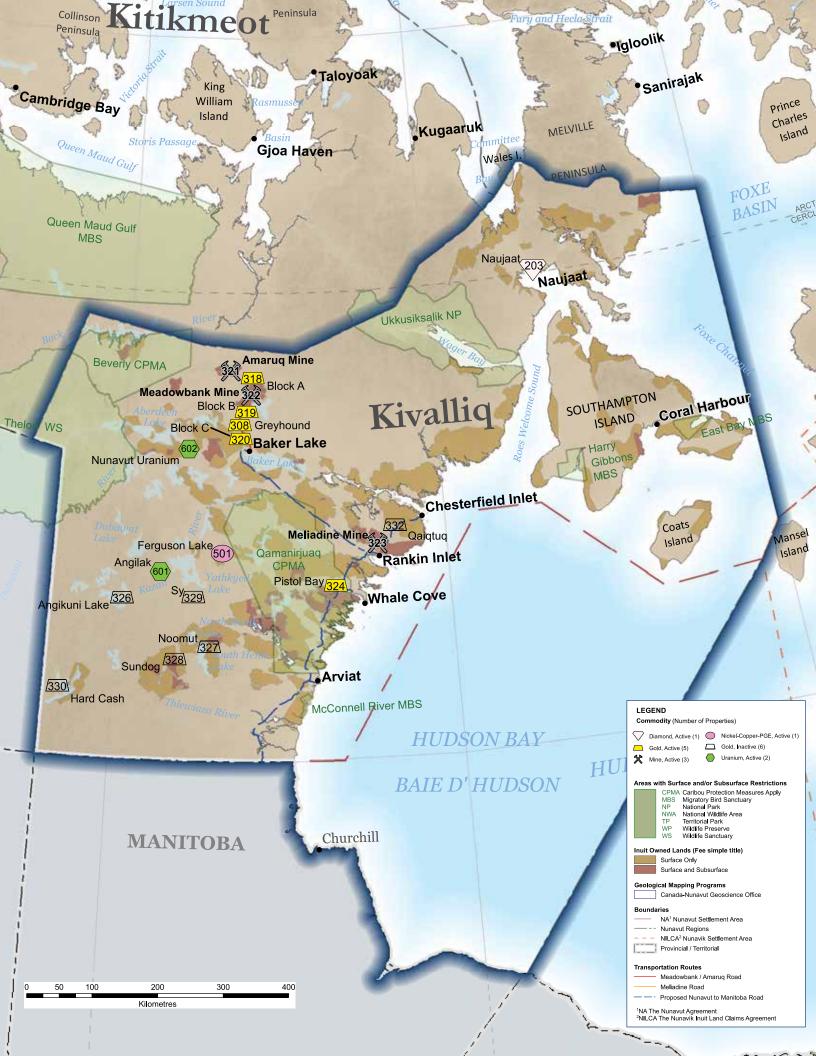
Exploration-wise, 27,600 m of exploration drilling took place at Meadowbank in the first nine months of 2022. Regional exploration drilling focused on deep holes on the IVR, Mammoth, and Whale Tail zones. At Meliadine, Agnico Eagle made further progress on its conversion drilling program at the Tiriganiaq, Wesmeg, Normeg, and F-Zone deposits, and results from the drilling will contribute to the update of the inferred resource estimate for the mine.

North Arrow Minerals Inc. released final results from its 2021 1,823 dry tonne preliminary bulk sample at Naujaat, which was funded by project partner Burgundy Diamond Mines. Results from the bulk sample included a notable percentage of fancy-colour diamonds, primarily orange and orangey-yellow, and recovery of the three largest diamonds from the Q1-4 kimberlite to date: 7.00, 2.17, and 2.02 carats.

The Ferguson Lake nickel-copper-cobalt-PGE project, acquired by Canadian North Resources Inc. in 2013, saw a significant field program in the 2022 season. The \$15-million program ran from March to October and included over 18,000 m of diamond drilling intended to step out from existing drillholes on the West and East zones. Initial results from the first 28 holes include confirmation of two styles of mineralization on the property – nickel-copper-PGE massive sulphides up to 31 m thick, and a low-sulphide PGE-enriched interval up to 36 m thick.

Uranium saw renewed exploration in the Kivalliq in 2022, with both Forum Energy Metals and ValOre Metals Ltd. returning to previously-dormant projects. At Forum's Nunavut Project, the company acquired mineral tenure over the Tattigaq and Qavvik deposits previously held by Cameco Corp. and undertook a preliminary program including review of existing drill data, a ground gravity survey, an archaeological study, and community consultations with the hamlet of Baker Lake in preparation for a 2023 drill program. ValOre completed a summer drill program of RC and diamond drilling at its Angilak project, both of which resulted in identification of additional  $\rm U_3O_8$  mineralized zones at the Dipole and J4 West targets.

Above: Geologist examining historic core from Tatiggaq prospect, now part of Forum Energy Metals' Nunavut Uranium project. Courtesy of Forum Energy Metals Corp.



# Qikiqtani Region

The Qikiqtani region is primarily comprised of six larger islands – Axel Heiberg, Baffin, Bathurst, Devon, Ellesmere, and Somerset of the Canadian Arctic Archipelago. Cornwallis, Prince Charles, Bylot, Amund Ringnes and Ellef Ringnes islands are some of the smaller islands in the Qikiqtani region. The Belcher Islands in southeastern Hudson Bay and the northern portion of the Melville Peninsula of mainland Nunavut are also included in the region. At 1,040,418 km², the Qikiqtani is the largest of the territory's three regions.

Archean and Proterozoic rocks of the Churchill Province (Rae Domain) and Paleozoic rocks of the Arctic Platform and Innuitian Belt underlie the region. Mineral deposits and occurrences found in the Qikiqtani include iron, diamonds, gold, base metals, platinum group elements, and sapphires. Two past producing mines in the region were the Nanisivik zinc lead silver mine near Arctic Bay on northern Baffin Island, and Polaris, a zinc lead mine on Little Cornwallis Island. Both ceased production in 2002. The only current producing mine in the Qikiqtani region is Baffinland's Mary River iron mine.

Approximately 20,000 people inhabit the Qikiqtani region, making it the most populous of the three regions. Iqaluit, the territorial capital and located on southern Baffin Island, is the centre for supplies and support services for the region and has a population of around 8,300. The region includes 12 communities: Arctic Bay (Ikpiarjuk), Kinngait (Cape Dorset), Clyde River (Kangiqtugaapik), Kimmirut, Pangnirtung, Pond Inlet (Mittimatalik), and Qikiqtarjuaq on Baffin Island; Sanikiluaq on Flaherty Island, one of the Belcher Islands in Hudson Bay; Igloolik and Sanirajak (Hall Beach) on the Melville Peninsula; and Resolute (Qausuittuq) and Grise Fiord (Aujuituuq) in the High Arctic. Several of these communities, notably Pond Inlet, Igloolik, Sanirajak, and Iqaluit, provide services, supplies, and employees to exploration and mining projects.

Three companies were active in the Qikiqtani region in 2022: Baffinland Iron Mines at its Mary River iron mine on northern Baffin Island, De Beers Canada at the Chidliak diamond project northeast of Iqaluit on southern Baffin Island, and American West Metals Limited at the Storm copper and Seal zinc properties on Somerset Island, under option from Aston Bay Holdings. Mineral claims, prospecting permits and mining leases covering a total of 1.15 million ha were held as of November 2022, a slight decrease from that held in November 2021.

Exploration at the Mary River iron ore mine in 2022 included infill and exploration drilling at Deposits 1 and 3, structural mapping at Deposits 2 through 5 and the Glacier Lake prospect, and surface sampling at Deposits 3 and 5. Ground geophysical surveys were also conducted between Deposits 1 and 2 and geotechnical drilling was done for a multi-year slope stability study.

Baffinland Iron Mines had been seeking permit amendments to increase the allowed annual ore extraction and transportation from the current six million tonnes to 12 million tonnes from the mine to Milne Inlet, and the construction of a railway linking the

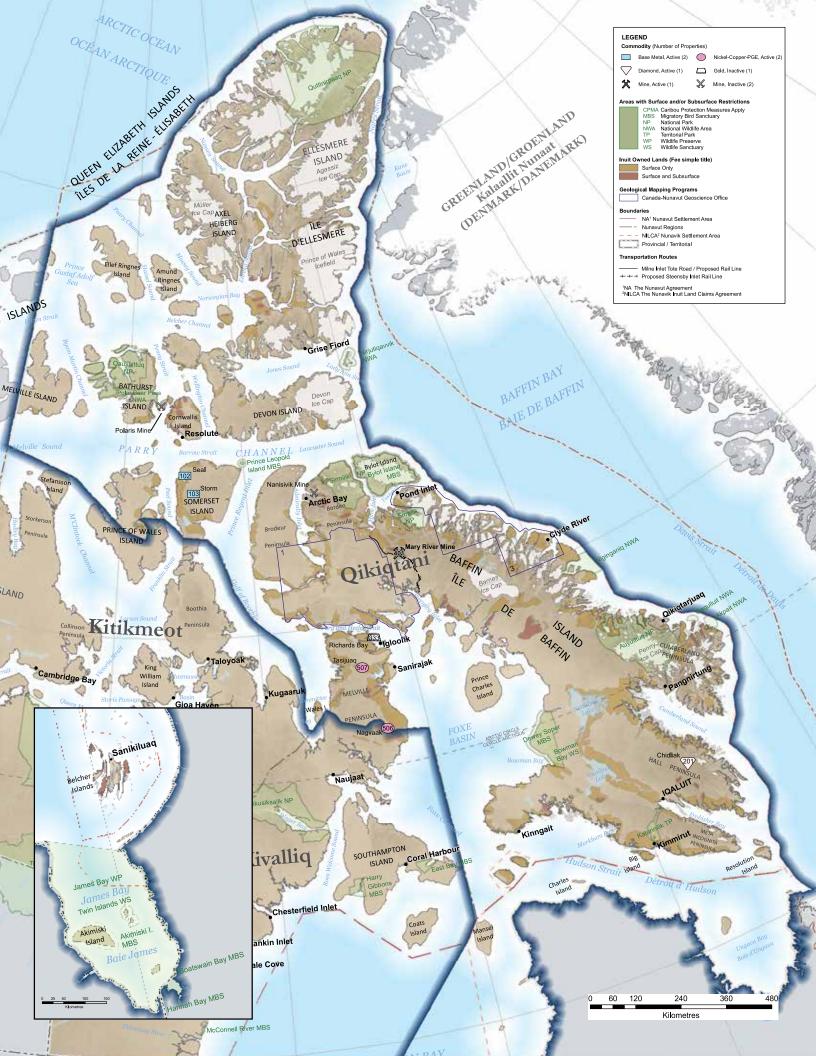
mine site to the port. The regulatory hearing process regarding the proposed amendment concluded in November 2021, and in May 2022 NIRB recommended to the Minister of Northern Affairs that the proposal not proceed due to the potential for significant adverse ecosystemic effects. The Minister accepted the NIRB's recommendation in November 2022. Baffinland responded to the Minister's announcement expressing disappointment with the decision and that it would have implications for the mine's workforce and operations.

De Beers flew an airborne geophysical survey over two blocks of its mineral leases at the Chidliak diamond project in 2022, along with carrying out annual maintenance and environmental baseline studies. The company also submitted a project proposal to NPC and NIRB for a diamond mine at the project, planned to use low-impact, mobile and modular technology as compared to a conventional mining operation.

American West Metals Limited followed up its 2021 electromagnetic geophysical survey at the Storm Copper and Seal Zinc properties with a drill program at Storm in 2022. This work focused on extending the 2750N mineralized copper zone and testing anomalies from the 2021 survey.



Geologist taking samples of iron formation at an outcrop on the Mary River project. Courtesy of Baffinland Iron Mines Corp.





# **Base Metals**

101	Blue Caribou
Operator/Partner	Tri-River Ventures Inc., Tao Song
Commodity	Copper, Gold
NTS	076G02, 076G07
Land Tenure	Crown, Surface IOL
Location	427 km south of Cambridge Bay

In December 2021, Tri-River Ventures entered into an option agreement with Tao Song on the Blue Caribou property in the Kitikmeot region. The property consists of six mineral claims with a combined area of 8,049 hectares. The project last saw activity in 2009, when Skybridge Development Corp. ran an exploration program including geochemical sampling, geophysical surveys, and just over 4,300 metres of drilling. Under the terms of the option agreement, Tri-River can earn an 80 per cent interest in Blue Caribou through a \$275,000 cash payment and \$1.5 million in exploration spending over 3 years. The property has a historical NI 43-101 inferred mineral resource of 4.8 million tonnes of ore grading 2.03% Cu, 0.04% Mo, 22.72 grams per tonne (g/t) Ag, and 0.15 g/t Au.

Two mineralized zones, the Copper Zone and the Gold Zone, are known to exist on the property. A total of 35 holes historical holes from the Copper Zone were drilled, all of which intersected copper mineralization hosted in a quartz vein system in shallowly-dipping sulphide-rich brecciated host rock. The main copper-mineralized zone is continuous along 1 km of strike length, extends 700 metres down-dip, and is considered open in both directions.

Tri-River's plans for the project include a full compilation of the existing historical data for the property, including 2D and 3D modeling of existing drill holes, which will allow development of targets for future exploration.

102 103	Nunavut Property (Seal <sup>1</sup> , Storm <sup>2</sup> )
Operator/Partner	American West Metals Limited, Aston Bay Holdings Ltd.
Commodity	Zinc <sup>1</sup> , Silver <sup>1</sup> , Copper <sup>2</sup>
NTS	058C11 <sup>1</sup> - 058C14 <sup>1</sup> , 058B11 <sup>2</sup> , 058B14 <sup>2</sup> , 058B15 <sup>2</sup> , 058C02 <sup>2</sup> , 058C03 <sup>2</sup> , 058C06 <sup>2</sup> , 058C07 <sup>2</sup> , 058C10 <sup>2</sup> , 058C11 <sup>2</sup> , 058C14 <sup>2</sup>
Land Tenure	Crown <sup>1,2</sup> , Surface IOL <sup>2</sup>
Location	99 km south of Resolute <sup>1</sup> , 153 km south of Resolute <sup>2</sup>

The Nunavut Property consists of 149 contiguous mineral claims and six prospecting permits covering an area of approximately 302,725 hectares on the northwestern portion of Somerset Island. The property includes the Storm Copper project,

a high-grade sediment-hosted copper discovery, and the Seal Zinc deposit, which is considered analogous to the mineralization found at the past-producing Polaris mine about 200 km to the north. Seal has a 2017 NI 43-101 inferred resource of 1.01 million tonnes of ore averaging 10.24% Zn and 46.5 g/t Ag, with a cut-off grade of 4.0% Zn.

Copper mineralization at Storm is strata-bound and hosted in brecciated zones within dolomitic sediments from the Allen Bay formation. Zinc mineralization at Seal occurs as massive sphalerite and pyrite, found in permeable quartz sandstone interbedded with dolostone.

Aston Bay Holdings signed an option agreement with American West Metals Limited in 2021; American West may earn an 80 per cent interest in the Nunavut Property by spending a minimum of \$10 million on exploration within nine years.

In August 2021, American West Metals completed a three-week ground electromagnetic geophysical survey at Storm and Seal intended to extend the known strike and depth of mineralization, and to identify drill targets for its 2022 drilling campaign. A test program to evaluate on-site processing of copper ore at Storm confirmed that a chalcocite concentrate of 53.9% copper could be produced and was suitable for direct shipping.

Drilling at Storm began in July 2022 and was focused on extending the known 2750N mineralized zone and testing magnetic anomalies identified by the 2021 geophysics survey. In August, the company announced it had identified a 68-metre interval of stratiform copper sulphide mineralization in the initial drilling on 2750N and had been able to extend the known copper-mineralized zone to over 200 metres along strike. Further results from the drill program were pending at time of writing.



Historic drill collar in the 2700 Zone target at Aston Bay's Storm prospect, with copper mineralization present at the surface. Courtesy of CIRNAC.



# **Diamonds**

201	Chidliak
Operator/Owner	De Beers Canada Inc.
Commodity	Diamonds
NTS	026B01, 026B02, 026B07, 026B08, 026B10
Land Tenure	Crown
Location	117 km northeast of Iqaluit

De Beers Canada Inc.'s Chidliak diamond project is located on the Hall Peninsula on southern Baffin Island. Seventy-four kimberlites have been identified on the property, of which at least 41 are diamond-bearing. According to a 2018 preliminary economic assessment by Peregrine Diamonds prior to its purchase by De Beers Canada, the CH-06 and CH-07 kimberlites have a combined inferred resource of 22.2 million carats of diamonds.

De Beers Canada has carried out limited work on the property since its acquisition, consisting of a 14-hole drill program on the CH-6 kimberlite in 2019 and annual camp maintenance and environmental baseline study work. In 2022 the company flew an airborne geophysical survey over two blocks of its mineral leases, totalling  $63~{\rm km^2}$  of coverage.

The company has submitted a project proposal to the Nunavut Planning Commission for a mine on the Chidliak property, which is currently under review by the Nunavut Impact Review Board. The proposal includes the use of mobile, low-impact modular technology for mining activities at Chidliak. De Beers believes that due to the kimberlites' smaller sizes and more widespread distribution compared to other diamond operations in northern Canada, using mobile equipment that could be moved from kimberlite to kimberlite may be a better option than permanent infrastructure for economic and lower-impact mining.

202	CSI
Operator/Owner	North Arrow Minerals Inc.
Commodity	Diamonds
NTS	076E13, 086H16
Land Tenure	Crown, Surface IOL
Location	244 km south of Kugluktuk

North Arrow Minerals Inc. selected 4,540 hectares (ha) of claims on a new property, CSI, in early 2021, to the west of the diamondiferous Muskox and Jericho kimberlites.

The company collected 30 till samples from the property in 2021, with recovered kimberlite indicator minerals analyzed via electron microprobe to evaluate their mineral chemistry. Results were to be used to reinterpret the surficial geology in the area and identify

a bedrock source for the anomalous indicator minerals. No field work at the property took place in 2022.

203	Naujaat
Operator/Partner	North Arrow Minerals Inc., Burgundy Diamond Mines Ltd.
Commodity	Diamonds
NTS	046K12, 046L09
Land Tenure	Crown
Location	8 km northeast of Naujaat

The Naujaat property is located 7 km from tidewater and covers 10,472 ha of mineral claims and leases which include the Q1-4 kimberlite complex. Naujaat has a NI 43-101 inferred resource of 26.1 million carats in 48.8 million tonnes of kimberlite from Q1-4, which has a surface exposure of approximately 12.5 ha and remains open at depth past 305 metres. Eight kimberlite pipes have been identified on the property.

In June 2020, North Arrow signed an option agreement with Burgundy Diamond Mines (formerly EHR Resources Ltd.) that would allow Burgundy to earn a 40 per cent interest in the project by funding a preliminary bulk sample of Q1-4 kimberlite, and depending on results, a follow-up 10,000-tonne bulk sample. The Q1-4 kimberlite consists of two distinct units: the 'green kimberlite' unit, which is xenolith-poor, olivine-rich, and coherent, and the 'blue kimberlite' unit, which is massive, poorly sorted, and volcaniclastic. Most of the fancy-coloured diamonds recovered to date have been found in the 'blue kimberlite' material. This 1,823 dry tonne preliminary bulk sample was collected in 2021 and final results were released by North Arrow in July 2022.

Once processed, a total of 268 diamonds greater than +9 DTC sieve size (1.05 mm) were recovered from the Pit B and D subsamples, of which just over 20% by carat weight were graded as 'fancy coloured' with intense or vivid orange colouration. From the Pit E subsample, 99 diamonds greater than +9 DTC (1.05 mm) were recovered, including the three largest diamonds recovered from Naujaat to date: 7.00, 2.17, and 2.02 carats. Analyses of previous samples from the property have identified two separate populations of diamonds, one of which is made up of rare Type Ib diamonds that commonly occur in shades of orange and yellow.

Work by North Arrow and the hamlet of Naujaat is continuing on the expansion of an existing ATV trail outside the community into an access road to Q1-4. The access road would facilitate the collection of the proposed 10,000-tonne bulk sample and minimize helicopter traffic related to the project, as well as improve access to the land for Naujaat residents. The proposal has received a positive recommendation from the Nunavut Impact Review Board.



# Gold

301 302	Back River (George Lake <sup>1</sup> , Goose Lake <sup>2</sup> )
Operator/Owner	Sabina Gold & Silver Corp.
Commodity	Gold
NTS	056K07² – 056K10², 076G07¹ – 076G10¹
Land Tenure	Crown <sup>1,2</sup> , Subsurface IOL <sup>1,2</sup> , Surface IOL <sup>1</sup>
Location	362 km southwest of Cambridge Bay <sup>1</sup> , 391 km south of Cambridge Bay <sup>2</sup>

The Back River gold project consists of a series of gold deposits in banded iron formation, located in the southwestern Kitikmeot approximately 300 km south of the Doris mine at Hope Bay.

The property is located in the central part of the Slave structural province and is underlain by sedimentary rocks of the Beechey Lake Group consisting of oxide and silicate banded iron formation rocks hosted in turbidites with lesser greywacke and mudstone, cut by gabbroic and felsic dykes, which have undergone several deformation events. The bulk of gold mineralization at the Goose deposit is structurally controlled and associated with quartz and quartz carbonate veining associated with shearing and accompanied by silicification within banded iron formation rocks and the interbedded sedimentary rocks. Gold is usually associated with pyrite, arsenopyrite and pyrrhotite with free gold present in quartz and quartz carbonate veining. Gold mineralization is also found in porphyritic quartz and quartz feldspar dykes but not found in the younger gabbro dykes that post date mineralization.

The most recent feasibility study for the Goose and George Lake properties, from January 2021, includes an updated NI 43-101 mineral resource and reserve estimate and forecasts an average production of 233,000 ounces gold per year at 6.0 grams per tonne gold (g/t Au), over a 15-year mine life.

The 2021 spring exploration program included 4,482 m of drilling and was focused on the Hook target, thought to be a key link along the mineralized trend hosting the Goose Main and Nuvayak deposits, and a significant amount of infrastructure work and the delivery of 12,500 metric tonnes of sealift cargo related to mine development.

Sabina announced its positive production decision for the Goose mine in September 2022. Construction work on mine facilities will begin early in 2023 and continue year-round, and the company anticipates reaching commercial production at Goose in Q1 2025. Completed infrastructure at Back River in 2022 includes an expanded laydown area and improved all-weather road at the port facility, fuel delivery system improvements, fuel storage tank berms, permanent water systems to supply camp facilities, and ground preparations for concrete foundations for camp and mine infrastructure. Once completed, the permanent camp will be able to accommodate up to 500 personnel at

Goose; currently there are approximately 280 full-time workers on site. The underground portal at Umwelt deposit has been extended to 1,200 m length, construction on lateral access to the deposit has begun, and design work is in progress for the first ventilation raise. Initial underground exploration drilling on Umwelt is planned for Q4 2022.

Regional exploration continued at Back River in 2022, focused on the George Lake area. Sabina reopened the George Lake camp in July for the first field program on the property in ten years A NI 43-101 resource estimate for George includes an indicated resource of 7.1 million tonnes (Mt) grading 5.34 g/t Au for 1.2 million ounces and an additional inferred resource estimate of 5.4 Mt grading 6.12 g/t Au for 1.1 million ounces, in six deposits - LCP N, LCP S, Locale 1, Locale 2, Slave, and GH - on the 20 km-long belt. The geology at George is similar to that found at Goose, with gold mineralization occurring along a 20-km trend hosted in sulphide minerals in oxide iron formation. The 2022 program focused on revising the structural model for the deposit and identifying controls on gold mineralization, through both re-logging of selected historic drill core and targeted mapping, sampling, and prospecting. Results from the program will be used to develop priority targets for a 2023 drill program.



Aerial view of construction activities at the Umwelt underground portal at the Back River project. Courtesy of Sabina Gold & Silver Corp.

Sabina is also exploring options for renewable energy at Back River. The company has submitted a proposal to the Nunavut Planning Commission (NPC) and Nunavut Impact Review Board (NIRB) for a 59 megawatt renewable energy facility including wind turbines and solar panels for power generation, and battery storage capacity of 50 megawatt hours, which would allow significant reductions in fuel consumption, greenhouse gas emissions, and winter road traffic.

303 304 305 306 307	Committee Bay (Anuri-Raven¹, Four Hills-Cop², Inuk³, Three Bluffs⁴, West Plains⁵)
Operator/Owner	Fury Gold Mines Ltd.
Commodity	Gold
NTS	056J10 <sup>4</sup> - 056J16 <sup>4</sup> , 056K02 <sup>5</sup> - 056K04 <sup>5</sup> , 056K06 <sup>2,5</sup> , 056K07 <sup>1,2</sup> , 056K07 <sup>5</sup> , 056K08 <sup>1</sup> , 056K09 <sup>1,4</sup> , 056K10 <sup>1,2</sup> , 056K11 <sup>2</sup> , 056K16 <sup>4</sup> , 056O01 <sup>3</sup> , 056P03 <sup>3</sup> - 056P07 <sup>3</sup>
Land Tenure	Crown <sup>1,2,3,4,5</sup> , Surface IOL <sup>1,3</sup>
Location	242 km southwest of Kugaaruk <sup>1</sup> , 266 km southwest of Kugaaruk <sup>2</sup> , 138 km south of Kugaaruk <sup>3</sup> , 199 km south of Kugaaruk <sup>4</sup> , 300 km southwest of Kugaaruk <sup>5</sup>

The Committee Bay project, located approximately 180 km northeast of Agnico Eagle's Meadowbank Complex project, covers over 300,000 hectares (ha) of the Committee Bay greenstone belt and extends a further 300 km to tidewater. The project is wholly owned by Fury Gold Mines Ltd. The Geological Survey of Canada first mapped the Committee Bay area in the 1960s, and the Three Bluffs deposit was discovered in 2003.

The Committee Bay greenstone belt can be traced along the entire property and varies from 5 km to 30 km in width. Rocks of the belt are poorly exposed due to an extensive sequence of thick till cover and include basalts, intermediate to felsic tuffs, komatiites, coarse grained metasedimentary rocks, and banded iron formations. Gold mineralization in the belt is commonly associated with quartz veining, silicification, and sulphidization within banded iron formation rocks of the Archean Prince Albert Group. Gold mineralization is also



Aerial view of Hayes camp at Fury Gold's Committee Bay project. Courtesy of Fury Gold Mines Ltd.

found in quartz veins associated with shear zones in gabbroic, volcanic, and sedimentary rocks and is generally accompanied by arsenopyrite, pyrite, and pyrrhotite mineralization.

The Three Bluffs deposit, located in the central part of the property, has a NI 43 101 indicated mineral resource of 524,000 ounces of gold at 7.85 g/t Au and an inferred resource of 720,000 ounces of gold grading at 7.64 g/t Au with a cut-off grade of 3 g/t Au near surface and 4 g/t Au underground. The deposit remains open both along strike and at depth.

More than 40 other gold prospects have been identified in the greenstone belt; recent targets for exploration include the Kaluliq Aiviq corridor, and the Anuri-Raven and Shamrock targets.

The 2021 exploration program was intended to expand the defined high-grade mineralization at the Raven prospect and to test the potential mineralization below the current resource at Three Bluffs. The gold-bearing structure at Raven is situated along an 8 km long shear zone in which mineralization is strongly associated with arsenopyrite within sheared and altered gabbros, and in quartz veins at the gabbro-metasediment contact. All four holes completed at Raven in 2021 intersected the gold-bearing structure within a 20 to 30 metre wide alteration zone. Regional scale mapping, prospecting, and sampling were also carried out. No analytical results from the drilling or geochemical sampling programs have been released, and no work or exploration was done on the project in 2022.

308	Greyhound
Operator/Partner	Agnico Eagle Mines Limited, Gold79 Mines Ltd.
Commodity	Gold, Silver, Zinc, Copper, Lead
NTS	056D12, 056D13, 066A09
Land Tenure	Crown
Location	40 km north of Baker Lake

The Greyhound project is located along the all-season road connecting the community of Baker Lake to the Meadowbank Complex, and consists of 13 mineral leases, covering 13,573 ha of Crown land, and two mineral claims with an area of 2,334.87 ha. The mineral leases making up the core of the property are managed by a joint venture between Agnico Eagle as the operator, with a 63.4 per cent interest, and Gold79 Mines with a 36.6 per cent interest. Gold79 retains 100 per cent ownership of the two claims.

Gold exploration at Greyhound is focused on the contact between a felsic sub volcanic intrusion and the mafic metavolcanic rocks of a greenstone belt, both part of the Woodburn Lake Group. Exploration has focused on two principal gold targets: a strongly silicified zone that extends approximately 9 km along the western margin of the greenstone belt, and a banded iron formation southwest of Aura Lake that

caps the greenstone belt and has a known strike length of about  $10\,\mathrm{km}$ .

In 2021, Agnico Eagle completed 1,815 metres of diamond drilling in nine holes focused on the Aura, Dingo, and Outstanding Lake targets. The Outstanding Lake volcanogenic massive sulphide (VMS) target area includes numerous base metal anomalies and an isolated gold anomaly, identified during a 2020 till survey. A strong electromagnetic conductor in the Outstanding Lake area is viewed as a probable source for the glacially-transported VMS-mineralized boulders approximately 1 km to the west of the conductor, which have returned assays of up to 9.2% Cu and 18.4% Zn.

In March 2022 Agnico Eagle submitted its annual report on the Greyhound property to NIRB including plans for a follow-up 5-hole drilling program on the claims for summer 2022. No further information about the program has been released.

309 310	Hood River <sup>1</sup> , Roma <sup>2</sup> , Ulu <sup>3</sup>
Operator/Owner	Blue Star Gold Corp.
Commodity	Gold
NTS	076L14 <sup>1,3</sup> , 076L15 <sup>1,3</sup> , 076M02 <sup>2</sup> , 076M07 <sup>2</sup> , 076M10 <sup>2</sup>
Land Tenure	Subsurface IOL <sup>1</sup> , Crown <sup>2,3</sup> , Surface IOL <sup>3</sup>
Location	202 km southeast of Kugluktuk <sup>1</sup> , 184 km southeast of Kugluktuk <sup>2</sup> , 198 km southeast of Kugluktuk <sup>3</sup>

Blue Star Gold Corp. operates the Hood River, Roma, and Ulu properties within the High Lake greenstone belt in the Slave structural province. Hood River and Ulu are contiguous within a subsurface IOL parcel in the southern part of the belt, while Roma, acquired in 2021, covers 7,693 ha in the northern portion of the High Lake belt. Ulu was acquired in 2020 from Mandalay Resources and has an existing NI 43-101 resource of 605,000 measured and indicated ounces of gold, and 226,000 inferred ounces of gold, at average grades of 7.53 g/t Au and 5.57 g/t Au respectively.

In January 2022, Blue Star announced that it had expanded its Mineral Exploration Agreement (MEA) with Nunavut Tunngavik Incorporated (NTI) for the Hood River project, expanding the area under agreement by 40 per cent to 11,200 ha. The agreement provides for diamond rights for Hood River, including the Tenacity diamondiferous kimberlite located approximately five kilometres southeast of the Flood zone.

Five different mineralization styles have been identified on the Ulu property, with gold present in silicified sediments, strata-bound massive sulphides, and three different types of gold-bearing polymetallic quartz veining. Several high-grade



Geologist outstanding in their field. Courtesy of Blue Star Gold Corp.

gold occurrences at Roma include an intersection from historical drilling of up 12.38 g/t Au over 2.31 metres including 64.0 g/t Au over 0.37 metres. The Roma property is structurally complex, with gold mineralization in the southwestern portion of the property found in an anticline made up of gabbro, intermediate tuff, and biotite schist units. The anticline is cut off on its western limb by the north-trending Kennarctic shear zone, that separates the High Lake-area volcanic rocks from younger rocks to the east.

In 2021, Blue Star completed a 2,495 line-km airborne magnetometer survey to assist with refining targets for the drill program at Hood River. A total of 5,102 metres of core were drilled, mainly at Ulu.

Blue Star's 2022 field program ran from June through September and was designed to follow up on the 2021 results. A total of 3,865 metres of oriented core drilled across 28 holes was completed, along with a 3,055 line-km airborne magnetics survey covering all its currently held mineral tenure, and a 900-sample till geochemistry program on the Roma claims using the detectORE<sup>TM</sup> rapid low-level gold analysis process.

Following this program, the company announced the identification of several under- or unexplored target areas in the vicinity of the Flood deposit: the 800-metre Zebra-Dagg corridor on the Ulu fold hinge, the 950-metre Gravy arsenopyrite-mineralized structural trend to the east-southeast, and the 800-metre Bouncer trend to the west, that has returned high-grade gold from surface samples as well as local anomalous copper values.

Approximately half the drill assay results had been released at time of writing, with highlight results of 1.18 m grading 6.78 g/t Au including 0.69 m grading 10.25 g/t Au from a shallow hole on the Gnu zone; and 8.18 g/t Au over 4.2 m including 13.53 g/t Au over 2.19 m at the Miksuk vein target north of Flood zone. The best result from all Blue Star's drilling to date was 15.00 g/t Au over 17.65 m including 6.00 m of 25.74 g/t Au, from the Flood zone. The company also made further progress in remediating the Ulu site in general.

313 \ 314	Hope Bay (Doris Mine <sup>1</sup> , Boston <sup>2</sup> , Madrid <sup>3</sup> )
Operator/Owner	Agnico Eagle Mines Limited
Commodity	Gold
NTS	076008², 076009².³, 076010².³, 076015³, 076016³, 077A03¹.³
Land Tenure	Crown <sup>1,2,3</sup> , Subsurface IOL <sup>1,2,3</sup> , Surface IOL <sup>2,3</sup>
Location	123 km southwest of Cambridge Bay <sup>1</sup> , 172 km southwest of Cambridge Bay <sup>2</sup> , 145 km southwest of Cambridge Bay <sup>3</sup>

In February 2021, Agnico Eagle Mines Limited acquired TMAC Resources Inc. and its Hope Bay project, including the Doris gold mine. The project is located within the Slave structural province and includes the 80 km long and up to 20 km wide north-south trending Hope Bay greenstone belt. Archean mafic metavolcanic rocks and intermediate to felsic metavolcanic rocks with interbedded metasedimentary units dominate the belt, with lesser amounts of ultramafic rocks. Felsic intrusions along the eastern flank of the Hope Bay belt separate it from the adjacent Elu greenstone belt, over which Agnico Eagle also holds mineral tenure.

Gold mineralization is found along the entire length of the Hope Bay belt and is classified as Archean lode gold type. At the Doris mine, located near the northern end of the belt, the gold mineralization is hosted in a steeply-dipping quartz vein system within a sequence of folded and metamorphosed pillow basalts, at the contact between iron titanium tholeiite and magnesium tholeiite. At the Madrid Trend, centrally located in the belt, mineralization is associated with structural breaks and breccia zones, while at the Boston deposit, located in the southern end of the belt, mineralization is found within deformed quartz carbonate veins hosted in a complex series of altered sedimentary volcanic sequences.

The most recent NI 43-101 estimate for the Doris, Madrid, and Boston deposits, current to December 31, 2021, includes 16.0 million tonnes (Mt) of probable mineral reserves grading 6.50 g/t Au, 8.8 Mt of indicated resources grading 3.43 g/t Au, and 10.2 Mt of inferred resources grading 5.09 g/t Au.

In October 2021, Agnico Eagle announced that production operations at Hope Bay would be suspended. Following this, in February 2022, the company indicated the suspension of mining operations would continue through at least 2023, and the primary focus at Hope Bay would be further exploration, with the intention of increasing reserves and resources at the known deposits and from regional exploration. Exploration drilling at Hope Bay totalled 76,200 m during the first nine months of 2022, and the company anticipated completing approximately 100,000 m by the end of that year. Most of this drilling was done at Doris, where three drill rigs were operating at surface and three rigs were operating underground.



Aerial view of the Doris mine site at Agnico Eagle's Hope Bay project. Courtesy of Agnico Eagle Mines Ltd.

# Gold

From the underground drilling at Doris, recent results west of the BTD Connector zone include 7.3 g/t Au over 15.8 m at 459 m depth, and 19.6 g/t Au over 4.5 m at 520 m depth. This work confirmed that the BTD extension zone remains open along strike to the north. Drilling in the West Valley zone also confirmed the extension of the deposit to the south and above the dyke, with results up to 19.1 g/t Au over 8 m. At the DCN zone, exploration was focused on delineation drilling and confirming thicknesses and grades, and highlights include 12.9 g/t Au over 12.6 m.

Drilling also ramped up at Madrid in the third quarter of 2022. Agnico Eagle mobilized a second drill contractor in addition to the two rigs already operating on surface to increase drilling capacity. Through this drilling, the company has confirmed that the Naartok East zone extends to the north, and remains open at depth. At Naartok West, a new mineralized zone was discovered, with grades up to 10.3 g/t Au over 5.9 m and 6.6 g/t Au over 8.3 m. Design work on infrastructure and processing facilities at the Madrid site were also advanced in the third quarter of 2022. Farther south at the Boston deposit, camp refurbishment and renovations were prioritized in advance of a planned 2023 exploration drilling program.

315 316	McAvoy Lake <sup>1</sup> , TED <sup>2</sup> , Turner Lake <sup>3</sup>
Operator/Owner	Bathurst Metals Corp.
Commodity	Gold
NTS	076N02 <sup>2,3</sup> , 076N03 <sup>2</sup> , 076N06 <sup>1</sup>
Land Tenure	Crown, Surface IOL
Location	240 km southeast of Kugluktuk <sup>1</sup> , 262 km southeast of Kugluktuk <sup>2</sup> , 259 km southwest of Cambridge Bay <sup>3</sup>

Bathurst Metals Corp. has three gold projects just west of Bathurst Inlet. The Turner Lake project consists of three claims with an area of 4,428 ha that features classic Archean lode gold mineralization concentrated at the contact between greywacke units and iron and magnesium tholeiite units. The project includes the Main Gold Zone, discovered in the 1960s, the East Gold Zone, and the copper-nickel Nickel Knob massive sulphide deposit.

The adjacent TED project includes three claims with an area of 2,644 ha contiguous with and southwest of Turner Lake. The project area includes an 8-km strike length of iron formation within which four zones of gold mineralization were previously located by exploration in the mid-1980s. The company carried out a program of geological mapping and sampling at TED in 2021. Six of eighteen grab samples analyzed returned gold

values greater than 20 g/t. This program confirmed historic sampling results and identified visible gold present within the Archean iron formations.

Northwest of Turner Lake, the McAvoy Lake gold project includes three mineral claims with an area of 3,662 ha that covers a known 4 km-long north-south trend of gold mineralization that was sampled in the 1980s, but no further systematic exploration is known. In 2021, the company carried out geological mapping and structural analysis of the shear zone and the intrusive rock, as well as sampling along the intrusive-shear zone contact. No results from this work have been released.

318 319	Meadowbank (Block A¹, Block B², Block C³)
Operator/Owner	Western Atlas Resources Inc.
Commodity	Gold <sup>1,2,3</sup> , Nickel <sup>1</sup>
NTS	056D12², 056D13², 066A09².³, 066A10³, 066A16², 066H01¹, 066H08¹
Land Tenure	Crown
Location	97 km north of Baker Lake <sup>1</sup> , 48 km north of Baker Lake <sup>2</sup> , 31 km northwest of Baker Lake <sup>3</sup>

The Meadowbank area project consists of three non contiguous blocks of claims, covering 75,175 ha, adjacent to the all weather road connecting Agnico Eagle's Amaruq gold mine and Meadowbank Complex to the community of Baker Lake.

The properties are underlain by supracrustal rocks of the Woodburn Lake Group, part of the Rae Domain of the Churchill Province. The property geology is comprised of strongly foliated intermediate to felsic metavolcanic rocks, epiclastic sedimentary rocks, ultramafic units, and magnetite iron formation units; many of these units are intruded by large granitic plutons.

The 2021 program conducted by Western Atlas included a winter program of additional detailed logging and sampling of drill core from the 2020 program. In June 2021, the company announced a continuation of the winter logging and sampling program, involving additional structural and geological mapping and sampling within Blocks A and B, although no further results from the program have been released.

In February 2022 Western Atlas announced that it had been issued extensions for the Meadowbank project's land use permit until 2024. The company also indicated that a drill program is planned for the 2023 field season, subject to financing and other conditions, but no further details have been announced.

<b>X</b> 321 322	Meadowbank Complex (Amaruq Mine¹, Meadowbank Mine²)
Operator/Owner	Agnico Eagle Mines Limited
Commodity	Gold
NTS	056E04², 066A16², 066H01², 066H06¹ – 066H10¹
Land Tenure	Crown, Subsurface IOL
Location	124 km north of Baker Lake <sup>1</sup> , 85 km north of Baker Lake <sup>2</sup>

The Meadowbank Complex, 110 km north of Baker Lake, includes the past producing Meadowbank mine and related infrastructure as well as the Amaruq satellite operation located 50 km to the northwest. The mine infrastructure and deposits are located on Inuit Owned Land and grandfathered Crown mining leases, for a total of 100,775 ha of tenure. The Amaruq property is underlain by Archean volcanic and sedimentary rocks of the Woodburn Lake Group, deposited in a continental rift setting and consisting of mafic to ultramafic volcanic rocks interlayered with carbon rich sedimentary rocks that can be intruded by granitoids and lamprophyres. All these formations have been affected by various deformation phases and are generally metamorphosed to greenschist facies.

The Meadowbank mine produced 3.2 million ounces of gold from March 2010 through the end of 2019, and poured the four millionth ounce, from Amaruq ore, in 2022. Underground production at Amaruq began on August 1, 2022, and mine production is expected to continue until 2026 based on current

reserves, with the possibility for this date to be extended depending on exploration results. The Amaruq underground project was approved for development in 2021. In that same year, Agnico Eagle produced 255,222 ounces of gold in the first three quarters of the year. Production for Q3 from Amaruq totaled 122,994 ounces of gold, a new quarterly record for the mine. Production was impacted somewhat by workforce and equipment availability, but the decrease was offset by higher gold grades in ore mined from Whale Tail and IVR.

There are nine mineralized zones identified to date at Amaruq – Whale Tail, Whale Tail North, I, V, R, Mammoth 1 and 2, Buffalo, and Tugak. Gold mineralization is found in quartz pyrite arsenopyrite veins in volcano sedimentary rocks, similar to that found at the Goose and Portage deposits at Meadowbank. Whale Tail, the largest deposit, has a strike length of 2.3 km, a known depth of 915 m, and remains open at depth and along strike.

Mining operations related to the Amaruq project use the existing infrastructure at the Meadowbank mine site. Additional infrastructure has been built at the Amaruq project site, consisting of a truck maintenance shop, warehouse, fuel storage, and a camp facility. Ore mined at Amaruq is transported by haul trucks along a 64 km-long all season road to the Meadowbank concentrator site for processing.

Exploration in 2022 at Amaruq totaled 27,600 m from Q1-Q3, primarily on the IVR, Whale Tail, and Mammoth deposits, with highlights including 9.5 g/t Au over 4.8 m at 722 m depth and 7.1 g/t Au over 7.2 m at 747 m in the deepest extension of the IVR Zone in hole AMQ22-2813A; and 9.1 g/t Au over 10.8 m at 848 m depth in the deepest extension of the Whale Tail Zone in hole AMQ22-2852.



 $Agnico\ Eagle's\ Meliadine\ mine\ site\ north\ of\ Rankin\ Inlet,\ Nunavut.\ Courtesy\ of\ Agnico\ Eagle\ Mines\ Ltd.$ 

Twelve exploration drill holes were completed in the Mammoth Zone, in a newly discovered ore shoot that remains open at depth. Drilling in the western extension of the Mammoth Zone intersected 4.4 g/t Au over 36.4 m at 264 m, and the zone remains open beneath Mammoth Lake. A follow up program in this area is underway to increase confidence in the continuity of the expanded mineralization as well as to extend any inferred mineral resources defined during this year's program.

<b>X</b> 323	Meliadine Mine
Operator/Owner	Agnico Eagle Mines Limited
Commodity	Gold
NTS	055J13, 055J14, 055K15, 055K16, 055N01, 055N02, 055O04
Land Tenure	Crown, Subsurface IOL
Location	19 km north of Rankin Inlet

Agnico Eagle Mines Limited's Meliadine mine is connected to the hamlet of Rankin Inlet by an all-weather road, and is located 290 km southeast of the Meadowbank Complex site. The Meliadine property consists of 111,358 ha of Crown mineral claims and grandfathered Crown mineral leases on IOL, and a MEA parcel with NTI. The mine commenced production in 2019 and is expected to remain in operation until 2032. Meliadine currently has proven and probable reserves of 3.7 million ounces



Helicopter-assisted drill move during regional exploration at Meliadine, north of Rankin Inlet, Nunavut. Courtesy of Agnico Eagle Mines Ltd.

at an average grade of 5.93 g/t Au, with an additional 2.2 million ounces of gold in measured and indicated mineral resources and 2.3 million ounces of gold in inferred mineral resources. Many of the seven known deposits on the property remain open at depth, and new targets have been identified for further evaluation, which is likely to increase the mine's lifespan.

Meliadine is located in the northern portion of the Archean west-northwest-trending Rankin Inlet greenstone belt. The belt is made up of deformed mafic volcanic rocks, felsic pyroclastic rocks, sedimentary rocks, and gabbro sills, and is locally metamorphosed from lower to middle greenschist grade. Mineralization on the Meliadine trend is mainly located along the Pyke Fault, a high-strain shear zone several kilometres wide and over 80 km in length. Gold mineralization occurs in association with quartz carbonate shear zones and/or laminated quartz vein systems. The highest-grade ore is hosted in structurally controlled, multi-deformed and sulphidized iron formation units of the Tiriganian and Upper Oxide formations. Five of the major deposits at Meliadine – Normeg, Wesmeg, Wolf, Pump, and F Zone – occur within a five-kilometre radius of the main Tiriganiaq deposit. All the deposits have open-pit potential, with mineralization occurring within 120 m of the surface.

Under Agnico Eagle's Phase 2 production plans for Meliadine, the company continues to ramp up production towards 6,000 tonnes per day, which is expected to come online mid-2024. Exploration at Meliadine was budgeted at \$8.4 million dollars for 2022, with 27,300 m of drilling in Q1-Q3 2022. The company's focus remains on conversion drilling at the Tiriganiag, Normeg, Wesmeg and Pump deposits, and exploration drilling at Tiriganiaq, Wesmeg, Pump and F-Zone. Conversion drilling at Tiriganiaq returned an intercept of 9.7 g/t Au over 4.2 m at 124 m depth in Lode 1000. Wesmeg had an intercept of 8.7 g/t Au over 2.6 m at 160 m depth in Lode 650. Agnico Eagle has developed a new litho-structural model for Normeg, and drilling based on the model returned an interval of 5.1 g/t Au over 18.3 m at 137 m depth in Lode 903. In February 2022, the company announced the pouring of the millionth ounce of gold at the Meliadine mine three years after the start of production, and a total of over 178,000 ounces produced at the mine in Q2. Agnico Eagle has also begun testing autonomous hauling and trucking equipment for mucking operations at Meliadine, and in June was able to fully automate those operations on crew shift change days.

At the Discovery deposit, located 17 km to the southeast of Tiriganiaq and interpreted as having the potential to be a satellite deposit for the Meliadine operations, 3,245 metres of exploration drilling targeted the Itiqlak-Aquarius target, structurally similar to Tiriganiaq and Discovery. A highlight result was returned from the target of 21.7 g/t Au, from 93–97.5 m; other holes at Itiqlak-Aquarius also intersected shallow mineralization, with one hole assaying at 3.6 g/t Au over 4.2 metres at 37 metres depth, and a separate hole returning up to 5.4 g/t Au over 4.2 metres at 97 m depth.

324	Pistol Bay
Operator/Owner	Northquest Ltd.
Commodity	Gold
NTS	055K05 – 055K07, 055K12, 055L08, 055L09
Land Tenure	Crown, Surface IOL
Location	51 km northwest of Whale Cove

Northquest Ltd., a subsidiary of NordGold SE, is the owner of the Pistol Bay project, which covers an area of more than 78,000 ha west of Whale Cove.

The Pistol Bay project area is underlain by the Kaminak Group of the Rankin-Ennadai greenstone belt, part of the Hearne Domain of the Churchill Province. The Kaminak Group is made up of volcanic and volcaniclastic rocks, iron formations, mudstones, and siltstones. Numerous syn-volcanic to late tectonic igneous intrusions, dated at approximately 2.7 Ga, occur on the property, and the regional geology is interpreted as a series of back-arc islands that were accreted to the Rae Craton. Minor Paleoproterozoic rocks of the Hurwitz Group also underlie the property.

Gold mineralization at the Vickers deposit is found within and adjacent to the Gereghty Plug quartz diorite-gabbro intrusion, that intrudes into sub-vertical felsic and intermediate metavolcanic and metavolcaniclastic rock to at least 300 metres vertical depth. The mineralization occurs primarily along the southeast-plunging northeastern contact of Kaminak Group bedrock with the intrusion, and the deposit remains open at depth.

Most of the work at Pistol Bay has focused on the Vickers gold deposit, and Nordgold released a revised resource estimate for Vickers in February 2020. The new estimate increased the NI 43-101 inferred resource at Vickers to 1.58 million ounces of gold at an average grade of 2.2 g/t Au, doubling the previous resource estimate. The 2021 program expanded on that work, with drilling to expand the depth of the Vickers deposit and to test near-surface mineralization west of the current open pit model.

In January 2022, NIRB released its positive screening decision on the company's proposal to relocate and expand its existing camp, stating that the terms and conditions of the existing land use permit were sufficient for the proposed activities. In March, Nordgold announced that the planned 2022 season was on hold to allow for more time to process the 2021 drilling results.

325	South Kitikmeot Gold Project (Esker Lake)
Operator/Partner	Viridis Mining and Minerals Limited, Silver Range Resources Ltd.
Commodity	Gold
NTS	076C15, 076C16, 076F01, 076F02
Land Tenure	Crown
Location	413 km southeast of Kugluktuk

The South Kitikmeot gold project was optioned by Australian company Viridis Mining and Minerals Limited from Silver Range Resources in August 2021. Viridis can acquire rights to up to 100 per cent of the property in three phases – 51 per cent interest with \$1.5M AUD (\$1.3M CAD) in exploration spending by December 2024, a further 15 per cent interest with \$2.0M AUD (\$1.8M CAD) in exploration spending by 2027, and an additional 24 per cent by completing a pre-feasibility study by December 2037. The remaining 10 per cent would be acquired via cash purchase at fair market value.

The 11,448-hectare project includes seven properties which are prospective for gold along the Back River-Contwoyto greenstone belt, which also includes the past-producing Lupin gold mine and Sabina Gold & Silver's Back River project. The Lupin properties, Hiqiniq and Ujaraq, are located about 10 km south of Lupin mine; the Qannituq property is 8 km northwest of Sabina's Llama deposit at the Back River project; and the Park Place properties – Esker Lake, Gold Bugs, and Bling – and the Uist property are approximately 100 km and 80 km southwest, respectively, of Back River. Work by Silver Range and other previous operators has taken place intermittently on the properties, starting with the discovery of the Esker Lake showing in 1986 and continuing to Silver Range's prospecting campaign on the project in 2017.

Gold mineralization at all seven properties is hosted in iron formations. High-grade surface samples have been collected from each of the properties, including highlights of 61 g/t Au from the Brandon Hill showing and 19.9 g/t Au from the Wasp Lake showing at Esker Lake, and 64.3 g/t Au from Uist. Other than the historical program at Esker Lake, no drilling has taken place to date on any of the properties.

Viridis completed a 349 line-km total magnetic field ground geophysical survey at the property in May 2022, covering the Brandon Hill prospect at Esker Lake, a folded iron formation extending over a strike length of 4.3 km. The magnetic survey identified a magnetic high which is continuous to the northwest of the known extent of the formation, and may extend the iron formation by an additional 2.7 km.

The company plans to follow up on the geophysical survey results with regional exploration and prospecting on areas of interest at Brandon Hill and resampling of historic Esker Lake core.



<b>X</b> 401	Mary River Mine
Operator/Owner	Baffinland Iron Mines Corporation
Commodity	Iron
NTS	037C09, 037C10, 037C16, 037D13, 037E04, 037E05, 037E10 – 037E12, 037E14, 037E15, 037E06, 037F01, 037F10, 037F13 – 037F16, 037G01 – 037G03, 037G05 – 037G07, 037G11, 047H08
Land Tenure	Crown, Subsurface IOL, Surface IOL
Location	154 km south of Pond Inlet

Baffinland Iron Mines Corporation (BIMC) operates the Mary River iron mine on northern Baffin Island. The property consists of 411,949 hectares (ha) of tenure, including 363,323 ha of Crown mineral claims and three NTI Mineral Exploration Agreements covering 48,626 ha. Iron ore was first discovered at Mary River in the 1960s, but no further exploration was done in the area until BIMC acquired the property in 2004. Commercial production from Deposit No. 1 at Mary River began in late 2014.



Geologist for scale at a strongly folded outcrop during structural geology field work at Mary River. Courtesy of Baffinland Iron Mines Corp.

Nine iron deposits and several prospects have been identified at Mary River to date. They are hosted in the metasedimentary and metavolcanic rocks of the late Archean (2.76–2.71 Ga) Mary River Group. The region that is now northern Baffin Island has undergone three major tectonic events, the most significant being the Trans-Hudson Orogeny at 1.8 Ga. The lithological units of relevance to the project are a sequence of stratigraphically lower metavolcanic rocks and stratigraphically higher metasedimentary rocks, with a banded iron formation unit forming a prominent marker.

High-grade iron mineralization at Mary River is associated with large-scale folds along structural boundaries. The Mary River synform hosts Deposits 1 through 3, and the McOuat synform hosts Deposits 4 and 5. Deposit No. 1 is currently being mined

and averages 64% Fe, with a few deleterious elements. The high-grade iron ore is associated with the footwall chlorite schist, and occurs as hematite, magnetite, or specularite in banded iron formation.

Regional exploration at Mary River in 2021 was suspended due to COVID-19 pandemic restrictions. However, deposit-scale exploration and geophysical surveying still occurred, with 19 holes drilled on Deposits 1 and 3. All 19 holes intersected high-grade iron formation.

Field work resumed across the Mary River property in the 2022 season. Baffinland completed 8,676 metres of infill and exploration drilling in 22 holes at Deposits 1 and 3, with the goal of better defining and expanding the ore bodies of both deposits. Geologists conducted a structural mapping program on Deposits No. 2 through 5 and at the Glacier Lake prospect, and surface sampling on Deposit No. 3 East and Deposit No. 5. Ground gravity surveys covering the area between Deposits 1 and 2 also occurred to follow up anomalies detected during regional airborne surveys. Geotechnical drilling at Deposit No. 1, part of a multi-year slope stability study on the site, began in June and continued into September, with a total of 2,169 metres of oriented core collected. The core was logged for both its geotechnical characteristics and its geological information. Results from these programs will contribute to the updated NI 43-101 resource estimate and feasibility study for Mary River.

Under its proposed Phase 2 plan for the mine, BIMC sought to increase the quantity of ore shipped through the Milne Inlet port to 12 million tonnes per year, and to construct the 'North Railway', a 110-kilometre railway intended to parallel the existing tote road that connects the mine site to the port.

The four-year regulatory process related to this proposal concluded with meetings in Iqaluit in November 2021. In May 2022, NIRB submitted its recommendation to the Minister of Northern Affairs that the Phase 2 proposal not proceed due to the potential for significant adverse ecosystemic effects.

Meanwhile, BIMC had also requested an emergency order from the Minister to extend its permit, which had expired at the end of 2021, to temporarily increase production from 4.2 Mt to 6 Mt of iron ore. The company stated it would have to make significant layoffs if the limit was not increased. The Minister rejected the emergency order request but recommended that Baffinland work with NIRB to renew the permit. In October 2022, the Minister approved NIRB's positive recommendation on the extension request, allowing Baffinland to ship up to 6 Mt of iron ore and avoid layoffs at the mine.

In November, 2022, the Minister of Northern Affairs accepted the NIRB's recommendation that the Phase 2 proposal not proceed. Baffinland released a statement indicating disappointment with the decision, noting it would have a significant impact on operations and the workforce at Mary River, and anticipating meeting with the Minister and with the Qikiqtani Inuit Association to determine the next steps for the mine.



# Nickel-Copper-PGE

501	Ferguson Lake
Operator/Owner	Canadian North Resources Inc.
Commodity	Palladium, Platinum, Rhodium, Copper, Nickel, Cobalt
NTS	065114, 065115
Land Tenure	Crown, Surface IOL
Location	159 km south of Baker Lake

The Ferguson Lake property consists of 11 contiguous claims and 10 mineral leases with a combined area of 25,380 hectares (ha). The project is located in the northwestern part of the Hearne Domain of the Churchill Province, and overlies the northerly extension of the Yathkyed greenstone belt. The deposit was discovered in the 1950s and has been explored intermittently by several companies, with the largest portion of historical work done by Starfield Resources between 1999 and 2011. Canadian North Resources Inc. (CNRI) acquired the property in 2013, and since then has carried out several exploration programs.

The Ferguson Lake property hosts two types of mineralization. Magmatic copper-nickel-cobalt mineralization with palladium, platinum, and rhodium is spatially related to mafic and ultramafic intrusions, mostly coarse-grained gabbros. The main Ferguson Lake deposit is this style and is divided into the East, Centre, and West zones which are related to the same gabbro unit; the deposit extends over a known strike length of 15 km. The second type of mineralization at Ferguson Lake consists of low-grade base metal sulphides with high-grade disseminated stringers of platinum-group elements (PGE), situated along and beneath the footwall of massive sulphide lenses within the intrusions.

Between 2013 and 2016, CNRI carried out metallurgical testing and evaluated different ore treatment processes. In July 2022, an updated NI 43-101 resource for the deposit was released. Indicated resources total 24.3 million tonnes (Mt) of ore grading 0.07% Co, 0.85% Cu, 0.60% Ni, 1.38 grams per tonne (g/t) Pd, and 0.23 g/t Pt. Inferred resources total 47.2 Mt at average grades of 0.06% Co, 0.91% Cu, 0.530% Ni, 1.4 g/t Pd, and 0.25 g/t Pt. The deposit is considered to have both open-pit and underground potential.

The 2021 program at Ferguson Lake consisted of 2,400 metres of diamond drilling to test the West Zone of the Ferguson Lake deposit. All the holes intersected massive to semi-massive or stringers of Ni-Cu-Co-Pd-Pt sulphides. The results of the program were used to plan the 2022 season, which was initially budgeted for 15,000 m of drilling using two rigs, focused on infill and step-out drilling on the East Zone and West Zone targets. CNRI added a third drill rig to the program in August, and by October had drilled a total of 18,144 m over 68 holes, of which

four were used to test satellite mineralized zones around the East Zone target.

The drilling confirmed the mineralization style of Ni-Cu-PGE-bearing massive sulphide zones, present in intervals up to 31 metres, and low-sulphide PGE-mineralized zones in intervals up to 36 metres. Assay results from the first 28 holes include 31.0 metres grading 1.28% Cu, 0.81% Ni, 0.09% Co, 2.02 g/t Pd and 0.29 g/t Pt, and 10 metres grading 1.72% Cu, 0.81% Ni, 0.07% Co, 2.07 g/t Pd and 0.23 g/t Pt, in two separate holes. Once complete results are received the data will be used to revise the deposit model and update the NI 43-101 resource estimate.



High-grade sulphides in core drilled at the Ferguson Lake Ni-Cu-PGE project. Assays for this 31m interval included 1.28% copper, 0.81% nickel, and 2.02 g/t palladium. Courtesy of Canadian North Resources Inc.

## Nickel-Copper-PGE

502	Gela Lake
Operator/Owner	Bathurst Metals Corp.
Commodity	Copper, Nickel, Cobalt
NTS	076N06
Land Tenure	Crown, Surface IOL
Location	248 km southwest of Cambridge Bay

The Gela Lake project is located near Arctic Sound on Bathurst Inlet, and consists of two mineral claims with an area of 3,116 ha. Copper mineralization is found in quartz veins associated with cobalt blooms occurring within a monzogabbro intrusive that outcrops over a two kilometre strike-length along the regional Bathurst Inlet fault. Exploration work in the 1970s also indicated a strong correlation between nickel and cobalt.

Fieldwork conducted in August 2021 focused on the south-central portion of the project area. Grab samples were collected from the eastern and western contacts between the monzogabbro intrusive and the Archean metasedimentary and volcanic rocks. Two of the four samples collected from the eastern contact returned high grade copper values of 9.4% and 3.26%. The sampling along the western contact, where the Bathurst fault is projected to occur, returned more consistent higher-grade copper, bismuth, and molybdenum values, up to 6.51% Cu, 1,720 g/t Bi, and 489 g/t Mo. The mineralization observed consisted mainly of structurally controlled chalcopyrite within quartz and quartz-carbonate veins hosted within sheared monzodiorite and Archean metavolcanic and sedimentary rocks.

503 504	McGregor Lake <sup>1</sup> , Speers Lake <sup>2</sup>
Operator/Owner	Bathurst Metals Corp.
Commodity	Copper <sup>1,2</sup> , Nickel <sup>1,2</sup> , Palladium <sup>2</sup> , Platinum <sup>2</sup> , Gold <sup>2</sup>
NTS	086J11 <sup>1</sup> , 086J14 <sup>1,2</sup>
Land Tenure	Crown, Surface IOL
Location	112 km south of Kugluktuk <sup>1</sup> , 94 km south of Kugluktuk <sup>2</sup>

The McGregor Lake project includes 12 mineral claims with an area of 17,341 ha that cover portions of the southern exposure of the Proterozoic layered Muskox ultramafic intrusion. The Muskox intrusion outcrops for 80 kilometres along strike and has had sporadic systematic exploration since its discovery in the 1950s. Just to the north of McGregor Lake, the Speers Lake project consists of a single mineral claim with an area of

1,459 ha and has known copper, nickel, palladium, platinum and gold mineralization within or along the contact of the Muskox intrusion.

A summer field program during 2021 carried out geological mapping, rock sampling, and structural analysis on both properties. The single sample collected from Speers Lake returned up to 1.55% Cu and 0.57% Ni. The six samples collected within the McGregor Lake project area returned values up to 15.40% Cu, 5.90% Ni, 1,550 g/t Co, 4.06 g/t Pt, and 44.5 g/t Pd, with the highest values coming from the East Pump Lake target. The company has also completed data compilation of historic work done by Adriana Resources and MIE Metals Corp., to contribute to future modeling for the project.

505	Muskox
Operator/Owner	SPC Nickel Corp.
Commodity	Copper, Nickel, Palladium, Platinum
NTS	086J02, 086J06, 086J07, 086J10, 086J11, 086J14, 086O03
Land Tenure	Crown, Surface IOL
Location	108 km south of Kugluktuk

The Muskox project consists of two separate blocks of claims: the North Block includes 11 mineral claims with an area of 13,792 ha, and the South Block includes four mineral claims and two prospecting permits with an area of 33,677 ha. Both claim blocks cover portions of the Muskox Intrusion.

The Muskox Intrusion occurs at the western margin of the Slave Province along a crustal-scale structural boundary between Early Proterozoic metamorphic rocks of the Wopmay Orogeny and undeformed strata of the Mesoproterozoic Coppermine Homocline. Regional gravity data suggests that the intrusion may extend a further 250 km to the north under surficial cover.

Ni-Cu-PGE mineralization at the Muskox intrusion was first identified in gossans located during an aerial survey of the region by Inco in the 1950s and the area has been explored intermittently by various companies. The intrusion is comprised of four main geological components: the Feeder Dyke, Marginal Zone, Layered Series and the Roof Zone.

In 2021, SPC acquired a database cataloguing exploration at Muskox over approximately 15 years. The database includes assays from more than 1,100 rock samples, till geochemistry surveys, 5,600 line-km of airborne magnetic and electromagnetic surveys, 466 line-km of ground geophysics, 4,100m of borehole geophysics, and logging and assay data from 35,000 metres of drill core. The company plans to use this data to improve modeling of the mineralization at the property.

SPC completed a short field program in June and July 2022 that included revisiting historical nickel-copper-PGE showings.

A total of 62 samples for assay and 78 samples for regional lithogeochemistry analyses were collected from the Muskox Intrusion, Feeder Dyke, SKOX/Marceau Lake, and Spider Lake targets. The company has also begun the permitting process for installation of a field camp for the planned 2023 field season.

506	Nagvaak
Operator/Owner	StrategX Elements Corp.
Commodity	Nickel, Vanadium, Cobalt, Copper, Silver, Palladium, Platinum
NTS	046007, 046008
Land Tenure	Crown, Surface IOL
Location	158 km south of Sanirajak

StrategX Elements Corp.'s Nagvaak project is located on an IOL subsurface rights parcel about 20 km to the west of the Mel mineral claims, for which StrategX acquired non-diamond interests through an agreement with North Arrow Minerals Inc. In February 2022, StrategX signed a 20-year Mineral Exploration Agreement with NTI for the 2,665-hectare property, which is prospective for nickel-copper-PGE mineralization. The project



Geologist collecting grab samples at Nagvaak on the Melville Peninsula. Courtesy of StrategX Elements Corp.

area has seen past exploration for zinc by BHP and Aquitaine, but no exploration for Ni-Cu-PGE.

The project is located in Penrhyn Group metasedimentary rocks, which are part of an early Proterozoic rifted sedimentary basin in the Rae Craton that has undergone two deformational events and has been metamorphosed to granulite facies. The mineralization is polymetallic, and commodities of interest on the property include nickel, vanadium, cobalt, molybdenum, copper, and PGEs. The mineralized trend has been identified over a 7-kilometre, 500-metre wide surface exposure.

StrategX completed a 62 line-kilometre high-resolution electromagnetic and ground magnetic survey during the 2022 summer field season. Using this geophysical data the company identified 12 high-priority drill targets for 2023 on the mineralized trend that is currently modeled to a depth of 150 metres. Historic core drilled by BHP in 1996 was also found on the property during the program, and StrategX has logged, sampled for assay, and analyzed this core with an XRF spectrometer.

The company is planning a drill program at Nagvaak for 2023 to follow up on these results.

507	Tasijuaq
Operator/Owner	StrategX Elements Corp.
Commodity	Nickel, Cobalt, Copper, Palladium, Platinum
NTS	047A13, 047A14, 047B16, 047C01
Land Tenure	Crown, Surface IOL
Location	78 km southwest of Igloolik

The Tasijuaq project, formerly Project N, is located on the Melville Peninsula between Sanirajak and the peninsula's west coast, and north of StrategX's Nagvaak and Mel properties. The ground was originally acquired in 2021 and StrategX added additional tenure in April 2022, bringing the total to 1,560 ha of claims focused on a 3.5 km² gossan alteration zone.

Historical exploration took place on the property in the 1970s by Aquitaine Company of Canada. This work included airborne magnetic and electromagnetic surveys, and ground VLF and magnetic geophysical surveys. Grab samples were also collected from gossanous outcrops, but assay data from those samples was never released.

In April 2022, StrategX released assay results from 27 of the historical samples, with an average grade of 0.49% Ni, 0.33% Cu, and 286 g/t Co. The mineralization occurs as zones of disseminated, massive, and net-textured sulphides, particularly chalcopyrite and pyrrhotite, hosted in gabbro, and the highest anomalous grades are found in the net-textured sulphides. The company expects to release further results as they are received.



601	Angilak
Operator/Owner	ValOre Metals Corp.
Commodity	Uranium
NTS	065J06, 065J07, 065J09 – 065J11, 065J15
Land Tenure	Crown, Subsurface IOL, Surface IOL
Location	235 km southwest of Baker Lake

The Angilak project, located southwest of Baker Lake, was reactivated in 2022 after several years of dormancy. The property covers 59,483 hectares (ha), and the focus of work on the project continues to be the Lac 50 deposit, which has a NI 43-101 resource from 2013 of 2.38 million tonnes (Mt) of ore at an average grade of 0.69%  $U_3O_8$ . Mineralization at Angilak is structurally controlled, and is hosted in graphitic tuff units of Archean basement metavolcanic rock.

Prior to 2022, the most recent field work on the property took place in 2017. Low uranium prices and more recently the COVID-19 pandemic resulted in several years of dormancy for the project. In 2021, ValOre announced the company would be undertaking a full desktop review of the existing geophysical and geochemical data sets collected from Angilak that were acquired as part of over \$55 million of exploration work done on the property since 2008. The company also acquired 466 km² of satellite imagery and spectral data to assist with this review and with target generation on the property.

In 2022, ValOre initiated an exploration program at Angilak. A winter reverse-circulation (RC) drill program from March to May on the Dipole, Yat, and J4 targets produced 3,165 m of RC core. The results were used to target the follow-up 26-hole summer drill program on areas with significant  $U_3O_8$  intercepts as interpreted from scintillometer readings. During the summer program, ValOre completed a total of 3,590 m of core drilling, 1,547 line-km of ground electromagnetic geophysics, and collected 896 till samples for enzyme leach analysis. The ground VLF-EM survey identified extension of known conductors at the Dipole and RIB high-grade zones, expanding their lengths to 8.5 km and 5 km, respectively. Both zones are considered to remain open along strike and at depth.

Highlight results from the RC drilling at Dipole include 7.6 m grading 0.59%  $U_3O_8$  and 5.97 g/t Ag from 47.2 m depth. Notable zones of Ag-Mo-Cu mineralization include 21.3 m grading 8.30 g/t Ag, 0.25% Mo, 0.027% Cu, and 0.074%  $U_3O_8$  from 131.1 metre depth. Core drilling intercepted radioactive zones in 23 of 26 holes drilled. Assay results for the remaining RC core and the drill core were pending at time of writing.

602	Nunavut Uranium
Operator/Owner	Forum Energy Metals Corp.
Commodity	Uranium
NTS	066A04 - 066A06, 066A12, 066B01, 066B02, 066B07 - 066B09
Land Tenure	Crown, Surface IOL
Location	91 km west of Baker Lake

Since November 2021, Forum Energy Metals, formerly Forum Uranium Ltd., has acquired 80,658 ha of mineral tenure over the Tatiggaq and Qavvik prospects, formerly held by Cameco Corp. The project is located to the southwest of Orano Canada Inc.'s Kiggavik project claims, and the property also includes 40,669 ha of mineral tenure which previously formed Forum's North Thelon project.

The property is in the Thelon Basin, which hosts several known unconformity-style uranium deposits that are geologically similar to those found in northern Saskatchewan's Athabasca basin. Previous work by Cameco on the project included 135 drill holes and several geophysical surveys between 2008 and 2012. Historical highlights from that work include 2.69%  $\rm U_3O_8$  over 7.9 m, including 24.8%  $\rm U_3O_8$  over 0.4 m, in hole TUR-042, and 1.17%  $\rm U_3O_8$  over 6.1 m in hole TUR-058. Mineralization at Tatiggaq is found in a large clay-altered zone 1.5 km long and 800 m wide; the company intends to focus its future drilling activities on this zone.

Forum, which was last active in Nunavut on its North Thelon uranium project in 2014, announced in March 2022 that it would be launching preliminary work at the property in the 2022 summer field season. The company was issued authorizations for land use related to the project in August, and in October completed a 110 line-km ground gravity survey to define targets for a proposed 2023 drill program on the property.

Results from the geophysics work had not yet been released at time of writing.



Historic core laid out at Forum Energy Metals' Nunavut Uranium project. Courtesy of Forum Energy Metals Corp.

# Inactive projects

Following the launch of the Nunavut Map Selection System in January 2021, New Break Resources Ltd. acquired a portfolio of previously-explored, gold-focused projects containing known showings and occurrences within the central Kivalliq region. Forty-four Crown mineral claims were selected with a combined area of 21,960 ha encompassing the **Angikuni Lake**, **Noomut**, and Sy projects, and a Mineral Exploration Agreement was signed with Nunavut Tunngavik Incorporated for the Sundog project covering 9,415 ha within subsurface Inuit Owned Land Parcel AR-35. Angikuni Lake includes the AN, F-13, and Robin occurrences from which historical grab samples returned high gold, silver, and copper values. Noomut, located on the eastern shoreline of South Henik Lake, includes the Esker, Ironside, and Napartok occurrences that returned favourable gold values from historical drilling. Sundog and Sy have both been explored intermittently since the 1960s. New Break purchased historical exploration data in October 2021, pertaining to Angikuni Lake, Sundog, and Sy, and further data in March 2022 regarding the Esker claim within the Noomut property. The company has been working to compile and interpret this data.

The **Hard Cash** gold project is owned by Silver Range Resources Ltd. and consists of two mineral claims on the shores of Ennadai Lake within the Ennadai Greenstone Belt. The claims include the 1.4 km long Swamp Trend, from which high-grade gold and silver analyses have been returned. The property was optioned to Canarc Resources from 2018 to 2020, and that company carried out two programs, including geological mapping, soil sampling, rock-chip sampling, and a seven-hole, 1,019 m reverse circulation drill program. Canarc terminated the option agreement based on the results of the drilling program. No work has been reported since 2020.

Leeward Capital Corp. owns the **Pistol Lake** gold project, comprising two grandfathered Crown mineral leases within a subsurface Inuit-Owned Land parcel. Work on the project was sporadic from 1965 through 2000. Leeward Capital carried out

a sampling program from trenches at the Farney and Knutson showings in 2020, and was developing an exploration program. No further work has been reported.

The **Qaiqtuq** gold project, formerly 'KGP' or 'Kahuna Gold Project', is owned by Solstice Gold Corp. and located near Rankin Inlet and the Meliadine gold mine. A 2020 program of regional surface mapping and boulder sampling resulted in identifying three areas of proximal gold-bearing boulders, believed to be indicative of local bedrock sources. Including those areas, there are five drill-ready target areas within the property.

The **Richards Bay** polymetallic project northwest of Igloolik is 100 per cent owned by Igloolik prospector Moshi Kotierk, and is located in a metavolcanic belt on which magnetic anomalies were identified by Geological Survey of Canada airborne surveys. Over 350 samples from the property have been assayed to date, and highlights from the Northern Richards Bay prospect include a soil sample containing 13 g/t Au and grab samples containing 15.4 g/t and 157.3 g/t Au.

Silver Range Resources also owns the **Tree River** gold project located in the northern Anialik greenstone belt in the Kitikmeot. The project includes areas with known gold mineralization hosted in a monomictic, clast-supported quartz pebble conglomerate. The company conducted a sampling and prospecting program in 2018, and collected panel samples from the Main Zone and West Zone in 2020. A proposed 2021 program of systematic panel sampling, geological mapping, and prospecting did not proceed.

Located on the Boothia Peninsula, the **Stein** diamond project is operated by GGL Resources Corp. under an option agreement with Arctic Star Exploration Corp. In 2019, GGL Resources completed a ground geophysical magnetic survey over high-priority targets identified from previous airborne magnetic surveys; this work defined a range of kimberlite-like signatures.

Number	Project	Owner
$\bigcirc$	Diamonds	
204	Stein	GGL Resources Corp., Arctic Star Exploration Corp.
	Gold	
326	Angikuni Lake	New Break Resources Ltd.
327	Noomut	New Break Resources Ltd.
328	Sundog	New Break Resources Ltd.
329	Sy	New Break Resources Ltd.
330	Hard Cash	Silver Range Resources Ltd.
331	Pistol Lake	Leeward Capital Corp.
332	Qaiqtuq	Solstice Gold Corp.
333	Richards Bay	Moshi Kotierk
334	Tree River	Silver Range Resources Ltd.

## Glossary

## base metal

a metal that corrodes or oxidizes easily, such as iron, lead, copper, or zinc.

#### breccia

a type of rock made up of angular rock or mineral fragments that have been fractured by forces within the Earth and then cemented together. Breccias can be good hosts for mineral deposits because the fractures in the rock provide spaces for mineralization to occur.

### bulk sample

the collection of a large amount of mineralized material from a deposit to determine its average metal or mineral content. Bulk samples are usually several hundred kilograms to several tonnes in size.

#### carat

a unit of weight used for diamonds and other gemstones. One carat is equivalent to 0.2 grams.

## deposit

a natural concentration of a metal, gemstone or other mineral substance, which may be economically extracted but which needs more detailed study to be classified as a resource. Also known as a mineral deposit.

## drilling

the extraction of a sample of bedrock or other surface material such as glacial till or clay, in order to examine the occurrence of rock types, understand an area's geological structure, or verify the presence or absence of ore minerals

#### element

a pure substance that contains only one type of atom. Gold, copper, iron, and other metals are elements.

### feasibility study

a final report prepared to evaluate the most suitable plan for a proposed mine, based on options presented in the pre-feasibility study. It includes specifics related to project budget, design, and construction, and demonstrates that the project can be accomplished in an environmentally and technically sound way.

## fee simple

a type of private land ownership in which the owner has the right to use, control access to, and transfer the land. Inuit hold fee simple title to Inuit Owned Land.

#### felsic

an igneous rock made of minerals high in silicon and aluminum, such as quartz and feldspar. Felsic rocks are light-coloured and less dense than mafic rocks. Granite is a common felsic rock found in many parts of Nunavut.

#### geochemical survey

the collection of rock, soil, or water samples from a defined area and their subsequent chemical analysis in a laboratory, to identify abnormal concentrations of chemical elements that indicate the presence of metals or gemstones. Also referred to as geochemical exploration.

## geophysical survey

the collection of information associated with bedrock using sensing instruments. These surveys can be conducted from the air or the ground to detect physical properties of rocks such as magnetism, gravity or conductivity.

#### grab sample

a rock sample, collected by hand, that is examined for its physical characteristics and chemically analyzed to determine whether valuable minerals or metals are present.

## greenstone belt

a linear zone or "belt" of metamorphosed volcanic rocks that often host deposits of gold and other valuable metals. Their characteristic colour comes from several different green minerals that make up the volcanic rocks. These belts can be tens to hundreds of kilometres in length and are found in several places across Nunavut.

#### kimberlite

a type of igneous rock that sometimes contains diamonds. Kimberlites can be composed of intrusive and/or extrusive rock. Kimberlite indicator minerals (KIMs) are minerals found in glacial or other sediments that suggest the nearby presence of a kimberlite.



#### mafic

an igneous rock made up of minerals high in iron and magnesium, such as biotite and olivine. Mafic rocks are dark-coloured and have a higher density than felsic rocks. Ultramafic rocks are made up of greater than 90 per cent mafic minerals, and some can be used as carving stone.

#### **Mineral Exploration Agreement**

an agreement signed between Nunavut Tunngavik Incorporated and exploration companies, which allows exploration on Inuit Owned Lands.

## National Instrument 43-101 (NI 43-101)

a set of rules and guidelines for reporting information related to mineral exploration projects that are listed on Canadian stock exchanges.

#### ore

a rock or mineral that contains an economically important metal, that can be mined and processed to produce that metal.

#### platinum-group elements (PGE)

a group of metals including iridium, osmium, palladium, platinum, rhenium, rhodium, and ruthenium, that are highly resistant to tarnishing and corrosion. They are used in both industrial applications and in jewellery.

#### precious metal

a metal such as gold or silver, which has high economic value and does not corrode.

## preliminary economic assessment

an initial economic study done on a mineral deposit to determine whether or not the project can be profitable under current market conditions.

#### pre-feasibility study

the evaluation of an exploration project's potential to become a mine, prior to proceeding with infrastructure development, underground expansion, or other large-scale activities. It includes various mine design options, preliminary geotechnical and/or metallurgical studies, ore processing tests, and cost estimates for construction, as well as providing justification for increasing spending on a project.

#### reserve

a published estimate of the amount of naturally occurring metal, gemstone, or other mineral substance in a deposit that can be economically extracted at the time of publication of the estimate. Classifying a deposit as a reserve indicates that a company has strong confidence in the quantity and quality of ore in that deposit. Mineral deposits must meet specific legal criteria to be classified as reserves.

#### resource

a published estimate of the amount of naturally occurring metal, gemstone, or other mineral substance in a deposit, which is present in an amount that could allow for economic extraction of the material in the future. Classifying a deposit as a resource indicates that a company has moderate confidence in the quantity and quality of ore in that deposit, but that more exploration is needed to consider it a reserve. Mineral deposits must meet specific legal criteria to be classified as resources.

#### shear

a type of deformation resulting from forces within the earth that cause parts of a rock mass to stretch, compress, or fracture. This deformation can form shear zones, bodies of rock with many parallel fractures that can be good hosts for hydrothermal mineral deposits.

#### sulphide

a group of minerals that contain the element sulphur, including a large number of metal-bearing minerals that are sources for metals such as gold, zinc, and copper. They are commonly referred to as economic minerals. Sulphide deposits can be massive (minerals are concentrated over small areas) or disseminated (minerals are distributed over large areas).



## **GUIDE TO ABBREVIATIONS**

CIRNAC Crown-Indigenous Relations and Northern MPR Minerals and Petroleum Resources Division, Affairs Canada Department of Economic Development and Transportation, Government of Nunavut

CNGO Canada-Nunavut Geoscience Office

EDT Department of Economic Development and NI 43-101 National Instrument 43-101

Transportation, Government of Nunavut NIRB Nunavut Impact Review Board

GN Government of Nunavut NTI Nunavut Tunngavik Incorporated

IOL Inuit Owned Land PGE platinum-group elements

MEA Mineral Exploration Agreement SEDAR System for Electronic Document Analysis

and Retrieval



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