

OVERVIEW 2015

# NUNAVUT

MINERAL EXPLORATION, MINING AND GEOSCIENCE



Canada

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### About Mineral Exploration, Mining and Geoscience Overview 2015

This exploration overview is a combined effort of four partners: Indigenous and Northern Affairs Canada (INAC), Government of Nunavut (GN), Nunavut Tunngavik Incorporated (NTI), and Canada-Nunavut Geoscience Office (CNGO). The intent of this publication is to capture information on exploration and mining activities in 2015 and to make this information available to the public.

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 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 SEDAR ([www.sedar.com](http://www.sedar.com)). Readers are directed to individual company websites for details on the reporting standards used. The authors make no warranty 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 2015. Exploration work was completed and reported on during 2014 or 2015 for all projects with active status in this publication. Projects with inactive status had exploration work last completed on them in 2012 or 2013, have active mineral tenure, and may have valid land use permits and/or water licences as issued by INAC and the Nunavut Water Board, respectively.

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 Canadian 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.

### ACKNOWLEDGMENTS

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*Cover photo: Core boxes at Auryn Resources' Committee Bay project. Courtesy of INAC.*

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Arctic sea ice, with meltwater draining towards a seal breathing hole – *Courtesy Government of Nunavut*

The territory of Nunavut was created on April 1, 1999, after the signing of the Nunavut Land Claims Agreement (NLCA) in 1993. Spanning two million square kilometres (km<sup>2</sup>), the territory has 25 communities and a population of 37,000. Inuit represent 85 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 the coast where hunting and fishing traditionally sustained the Inuit. There are no roads to Nunavut or connecting communities in Nunavut. Access is mainly by air with ships delivering supplies during the open water season.

As a modern day treaty the NLCA provides certainty and clarity of rights to ownership and use of lands and resources within Nunavut. It gave Inuit fee simple title to 356,000 km<sup>2</sup> of land making the NLCA the largest Aboriginal land settlement in Canadian history. There are 944 parcels of Inuit Owned Lands (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 total 38,000 km<sup>2</sup> and represent approximately 2 per cent of the territory. Surface title to all IOL is held in each of the three regions (Kitikmeot, Kivalliq 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 and 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 percent of Nunavut. Prospecting permits, mineral claims and mineral leases are issued pursuant to the *Nunavut Mining Regulations* by Indigenous and Northern Affairs Canada's (INAC) Nunavut Regional Office. Surface rights for Crown land are administered according to the *Territorial Lands Act* and its regulations. Carving stone and building materials are administered pursuant to the *Territorial Quarrying Regulations* and are also issued by INAC's Nunavut Regional Office.

For more information on the location of IOL and Crown land in the territory, refer to the *Nunavut Mineral Exploration, Mining and Geoscience Projects 2015 Map*. For details on mineral tenure, visit the Nunavut Map Viewer at <https://services.aadnc-aandc.gc.ca/nms-scn/index.html>. The table on page 4 displays the number of prospecting permits, mineral claims and mineral leases held in good standing as of November 2015, and the accompanying figure illustrates the location and extent of this mineral tenure.

## LAND TENURE IN NUNAVUT

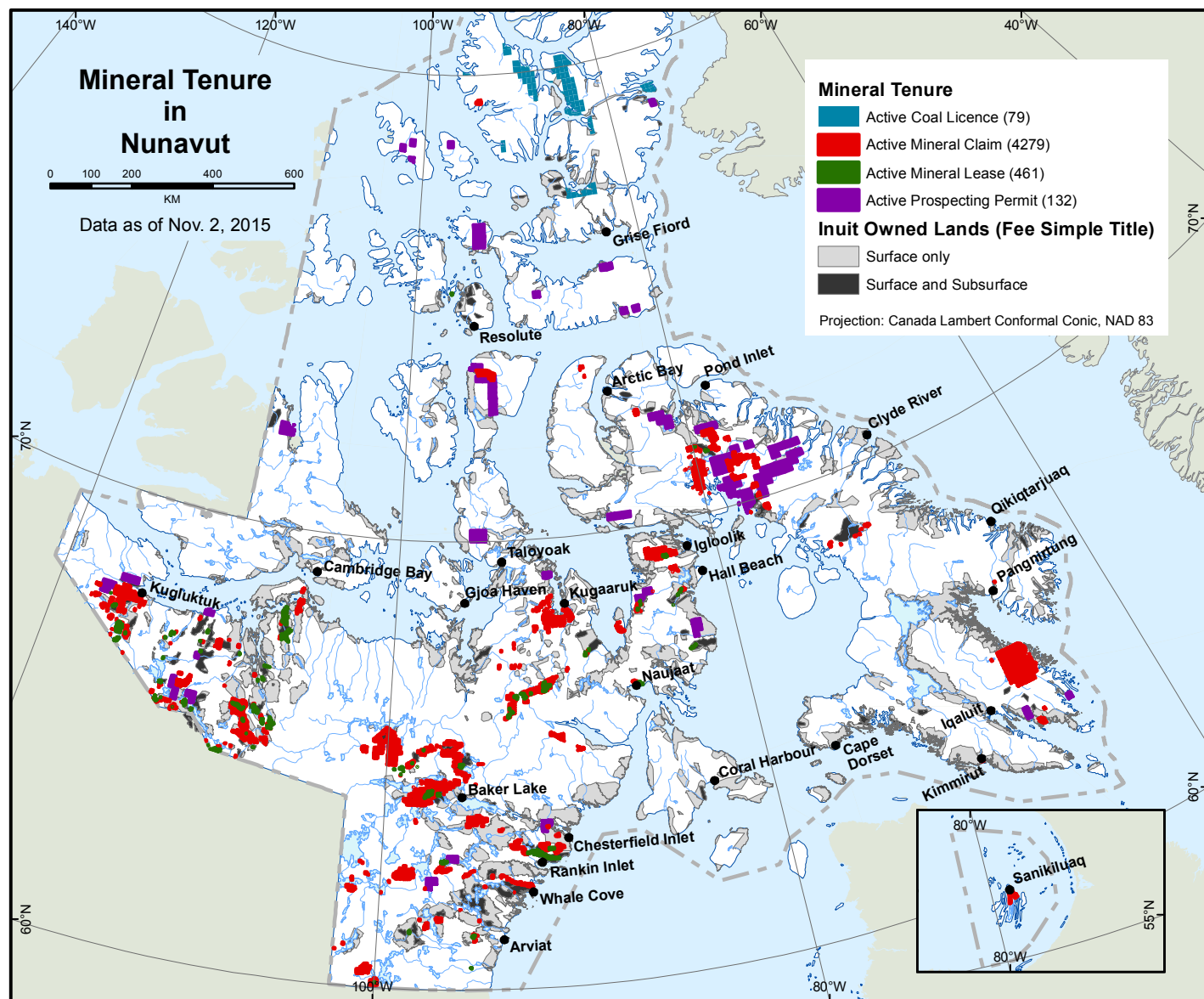
### MINERAL TENURE IN GOOD STANDING IN NUNAVUT *Source: INAC*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Permits	1,395	1,057	1,041	394	477	314	259	196	110	132
Claims	6,707	7,905	8,088	7,613	7,178	6,777	6,066	5,562	4,278	4,279
Leases	352	354	479	590	631	567	627	701	492	461

### EXPLORATION AND DEPOSIT APPRAISAL EXPENDITURES FOR NUNAVUT *Source: Natural Resources Canada*

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015*
Juniors (Millions \$)	161.8	237.4	261.4	56.9	125.0	163.0	129.0	111.0	73.6	80.5
Seniors (Millions \$)	48.8	100.6	171.2	130.7	131.7	372.6	293.5	146.6	84.4	122.0
Total	210.6	338.0	432.6	187.6	256.7	535.6	422.5	257.6	158.0	202.5

\*revised spending intentions released November 2015





## INDIGENOUS AND NORTHERN AFFAIRS CANADA

Representing one-fifth of Canada's land mass, Nunavut has tremendous resource potential and is a place of significant opportunity for Northerners and all Canadians. According to statistics released by Natural Resources Canada, Nunavut is one of only two Canadian jurisdictions to see a marked increase in exploration in 2015. Expenditures on exploration and deposit appraisal in Nunavut are expected to total \$202.5 million in 2015, up from last year's reported expenditures of \$158.0 million. Due to its size and remoteness, Nunavut remains under-explored compared to other jurisdictions in Canada and has potential for additional, large discoveries.

Indigenous and Northern Affairs Canada's (INAC) mandate related to mineral resource development in Nunavut includes the implementation of the Nunavut Land Claims Agreement (NLCA), the administration of surface and subsurface rights on Crown land, and the stewardship of land and water resources.

## IMPLEMENTATION OF THE NUNAVUT LAND CLAIMS AGREEMENT

The NLCA signed in 1993 guarantees the right of Inuit to participate in decision-making concerning the use, management, and conservation of land, water, and resources.

To achieve this, the NLCA created five Institutions of Public Government (IPG):

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

The *Yukon and Nunavut Regulatory Improvement Act*, originally introduced as Bill S-6, received Royal Assent on June 18, 2015 and the *Nunavut Planning and Project Assessment Act* came into force on July 9, 2015. These two significant developments pertain to the above institutions and affect the regulatory process for exploration and large-scale project development.

## NUNAVUT WATERS AND NUNAVUT SURFACE RIGHTS TRIBUNAL ACT

The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (2002), established in legislation the NWB and the Nunavut Surface Rights Tribunal. Part II of the *Yukon and Nunavut Regulatory Improvement Act* makes amendments to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* including:



Geologist on Hall Peninsula – Courtesy of INAC

- the introduction of a nine-month time limit for water licence reviews and the possibility of ‘life-of-project’ water licences;
- the establishment of a regime to recover costs related to the consideration of an application, or the renewal, amendment or cancellation of a licence;
- an increase of existing fines associated with water licences and new administrative monetary penalties designed to enhance environmental stewardship; and
- the requirement that the Nunavut Water Board consider agreements between land owners and proponents regarding reclamation security to minimize over bonding.

#### **NUNAVUT PLANNING AND PROJECT ASSESSMENT ACT**

As required by the NLCA, the *Nunavut Planning and Project Assessment Act (NuPPAA)* establishes in legislation the powers, functions, objectives, and duties of the NPC and NIRB. The existing overall approach to resource management in Nunavut does not change under *NuPPAA*. *NuPPAA* does, however, clarify and strengthen elements of the regulatory regime. The changes are the result of close consultation and collaboration with the Government of Nunavut, Nunavut Tunngavik Incorporated, the NIRB, and the NPC. Highlights of these changes include:

- adjustments to the rules around appointments and term extensions of NPC commissioners and NIRB board members;
- the introduction of timelines in the environmental assessment process to encourage timely decision making by the NPC, NIRB and the Minister in relation to the processing of applications; and
- the implementation of a ‘single window entry’ into the regulatory process that requires any new project proposal in Nunavut to be first submitted to NPC rather than to other authorities.

This final change does not apply to projects that entered the land use or environmental assessment process before *NuPPAA* came into effect or to project amendment requests for existing projects. *NuPPAA* also includes provisions for the delegation of the powers, duties, and functions of the Minister of Indigenous and Northern Affairs to a territorial Minister.

#### **ADMINISTRATION OF SURFACE AND SUBSURFACE RIGHTS**

Nunavut is the last jurisdiction in Canada where the Government of Canada, rather than the province or territory, administers Crown land. In October 2014, negotiations began for an Agreement-in-Principle for the devolution of lands and resources in Nunavut.

Changes to three sets of regulations enabled by the *Territorial Lands Act* (1985) are also in progress.

#### **TERRITORIAL LAND USE REGULATIONS AND TERRITORIAL QUARRYING REGULATIONS**

Amendments are proposed to the Territorial Land Use Regulations and Territorial Quarrying Regulations to bring them into step with current operating realities and make the process more efficient for industry and government. Stakeholder consultation, through pre-publication in *Canada Gazette*, occurred between May 24, 2014 and June 23, 2014. The new regulations are expected to be in force in early 2016.

Proposed amendments to the Territorial Land Use Regulations include:

- increasing the duration of land use permits from two years to up to five years;
- allowing more time for consultation on Class B land use permit applications; and
- updating the information requested for final reports to reflect current technology.

Proposed amendments to the Territorial Quarrying Regulations include:

- increasing the permit duration from one year to a maximum of three years;
- introducing new definitions of existing terms; and
- converting Imperial units to metric.

#### **MAP SELECTION AND THE NUNAVUT MINING REGULATIONS**

Amendments to the Nunavut Mining Regulations, are being developed to enable the replacement of ground staking in Nunavut with online map selection of mineral claims. The deployment of the web tool is dependent on the completion of the regulatory amendment process. INAC will provide regular updates on progress. Proposed regulations will be pre-published in *Canada Gazette* for 30 days. This will represent the formal consultation period for the regulatory proposal.

#### **NUNAVUT REGIONAL OFFICE**

The Mining Recorder’s Office in the Nunavut Regional Office administers subsurface rights on Crown land in the territory. In 2015, the Mining Recorder’s Office issued the following subsurface authorizations:

- 25 prospecting permits, bringing the total number of existing prospecting permits in the territory to 132; and
- 313 mineral claims were recorded as of November 1, 2015.
- No new mineral leases or coal licenses were issued.





Tussock moth caterpillar, northern Baffin Island  
— Courtesy of Government of Nunavut

Approximately 77,218 km<sup>2</sup> (3.9%) of Crown land in Nunavut is covered by prospecting permits, mineral claims, coal licences, and mineral leases.

The Mineral Resources division reviews annual work reports that, under the Nunavut Mining Regulations, mineral rights-holders 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 on [www.nunavutgeoscience.ca](http://www.nunavutgeoscience.ca). In 2015, 45 reports documenting \$66.87 million worth of work were released to the public.

The Land Administration division administers surface rights on Crown land in Nunavut. In 2015, the Land Administration Division issued the following surface rights authorizations:

- 23 land use permits and 20 extensions granted, bringing the current number of active land use permits to 180; and
- 4 quarry permits.

### STEWARDSHIP OF LAND AND WATER

Several divisions of INAC's Nunavut Regional Office are involved in the stewardship of land and water resources. This includes participating in the regulatory process, enforcing authorizations and licences issued by the IPGs or INAC, and enabling monitoring that informs decision-making.

The Water Resources division participates in the water licensing process of the NWB to ensure that terms and conditions in water licences achieve the objective of protecting fresh water sources. In 2015, Water Resources provided technical advice in relation to more than 80 water licence applications, amendments, and renewals. The division also participates in two water quality monitoring initiatives. One is in and around the city of Iqaluit and the other, part of an MOU with the Kivalliq Inuit Association, involves monitoring water quality around centres of activity in Kivalliq Region. INAC also remains involved in cooperative work initiated in 1975 with Environment Canada's Water Survey Division. There are currently 26 active hydrometric stations in Nunavut, nine of which are funded or partly funded by INAC.

The Impact Assessment division and a socio-economic analyst participate in NIRB environmental assessments. In 2015, the Impact Assessment Division provided detailed expertise and technical review comments to the NIRB for environmental assessments of six major project proposals and 47 smaller proposals. The division also reviewed three

annual monitoring reports, submitted by proponents of major projects, to ensure they complied with terms and conditions of existing project certificates.

The Field Operations division enforces land-use permits and water licences by conducting inspections to ensure that proponents are complying with the terms and conditions contained in these authorizations and with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. In 2015, the Field Operations division in Nunavut inspected 214 land and water authorizations associated with exploration camps, mines, and research camps, as well as twenty-four municipal water licences. The division also completed quarterly inspections of Baffinland's Mary River iron ore project.

The Land Administration division, in addition to the responsibilities explained above, supports the licensing and environmental assessment processes by incorporating terms and conditions of project certificates and water licences into the authorizations they issue.

#### **NUNAVUT GENERAL MONITORING PLAN**

In addition to the monitoring noted above, INAC hosts the Nunavut General Monitoring Plan (NGMP) Secretariat. NGMP coordinates monitoring projects across the territory, identifies gaps where monitoring needs to take place, and through targeted investments funds research initiatives that complement or build on existing knowledge. The purpose of monitoring is to increase public access to ecosystemic and socio-economic information and inform decision making related to the impact of large-scale developments. The NGMP is a partnership mandated by the NLCA and overseen by a steering committee comprised of INAC, on behalf of the Government of Canada, the NPC, the Government of Nunavut, and Nunavut Tunngavik Incorporated.

The Baker Lake Cumulative Effects Monitoring Program, a watershed-based monitoring program for the Baker Lake Basin funded by NGMP, is a collaborative initiative between INAC's Water Resources Division, and the Kivalliq Inuit Association to develop a watershed management strategy. Following the Baker Lake Basin Indicators Workshop held in September 2014, the focus of work in 2015-16 is the development of an Inuit traditional knowledge sub-program, including community consultations and an Inuit traditional knowledge workshop scheduled for January 2016.

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Fog bank in Arctic Bay – Courtesy of Government of Nunavut



In the recently released mandate *Sivumut Abluqta: Stepping Forward Together (2014-2018)*, the Government of Nunavut (GN) affirmed its commitment to “Economic growth through responsible development across all sectors.” This vision is shared between many partners, including the mineral resource industry. With two operating mines in Nunavut, Meadowbank gold mine and Mary River iron ore mine, and a number of advanced development projects, moving through the regulatory process, there are many resource-related opportunities on Nunavut’s horizon. The GN is working to ensure that all Nunavummiut are in a position to benefit from these opportunities and is committed to ensuring that residents have opportunities to be full participants in resource development projects.

### MINERALS AND PETROLEUM RESOURCES

Within the GN, Minerals and Petroleum Resources (MPR), a division of the Department of Economic Development and Transportation (EDT), is committed to building and supporting a territory-wide strong and diversified exploration and mining industry based on best practices of sustainable development and partnerships. MPR has its headquarters

in Iqaluit, with regional offices in Arviat and Cambridge Bay. MPR works in six major areas: (1) geoscience, (2) investor confidence, (3) resource management, (4) petroleum resources, (5) prospector development and mining industry training, and (6) community education and awareness.

### GEOSCIENCE

#### PUBLIC GEOSCIENCE

The GN remains strongly committed to public geoscience as a means of encouraging new exploration opportunities. EDT, with Indigenous and Northern Affairs Canada (INAC) and Natural Resources Canada, provides core funding to the Canada-Nunavut Geoscience Office (CNGO). EDT also provides program support for the CNGO’s territorial mapping and research projects including the Carving Stone Deposit Evaluation Program.

#### CARVING STONE DEPOSIT EVALUATION PROGRAM

The Nunavut Carving Stone Deposit Evaluation Program (2010-2015) is a collaborative EDT-CNGO project funded by the Canadian Northern Economic Development Agency and EDT. The objectives of this EDT-led territory-wide project are to locate and evaluate known and new carving stone deposits and assess their potential to provide nearby communities

with a long term supply of quality carving stone for artisanal purposes. Geologists from the GN and CNGO have worked closely with carvers and other community members during this program to evaluate 119 carving stone resource sites. These sites are located near communities in all three regions. In total, there are 12 quarries and 20 additional undeveloped deposits with sufficient deposits of carving stone to provide artisans with several decades' supply of carving stone. Results indicate that 17 out of Nunavut's 25 communities have access to local carving stone resources adequate for their long-term needs.

Two well established quarries, both in operation since the 1970's, are Cape Dorset's Korok Inlet quarry and the Main quarry located on the Belcher Islands. The waning Korok Inlet quarry has been Nunavut's premier producer of carving stone, supplying 450 tonnes of excellent-quality soft stone per year. The Main Quarry located in the Belcher Islands has supplied Sanikiluaq carvers with 50 tonnes per year of excellent-quality artisan marble. Main Quarry reserves are estimated at 30,000 tonnes, twice as large as Korok Inlet's



GN prospecting course student sampling a quartz vein near Baker Lake – *Courtesy of Government of Nunavut*

total output. Four comparable artisan serpentinite resources able to supply several communities have been confirmed. Three occur in the Qikiqtani region and a fourth is in the northern Kivalliq region.

In 2015, two new small sites west of Rankin Inlet and seven new sites of skarn marble in four new locations close to Arctic Bay were evaluated. These new sites along with its two existing quarries mean Arctic Bay has sufficient stone for marine distribution to Resolute and Grise Fiord.

Results from 2015 will be reported in the annual *Summary of Activities* published by CNGO. A carving stone map is in production that will disseminate the results from the Carving Stone Deposit Evaluation program to local economic development officers, Nunavut communities, the Nunavut Arts and Crafts Association, Regional Inuit Organizations, and government and scientific agencies.

## INVESTOR CONFIDENCE

*Parnautit* is the GN's Mineral Exploration & Mining Strategy. Its goal is to create the conditions for a strong and sustainable minerals industry that contributes to a high and sustainable quality of life for all Nunavummiut. The four pillars of the strategy specifically address: (1) jurisdictional frameworks, (2) community benefits, (3) infrastructure development, and (4) environmental stewardship. Since the strategy's release in 2007 the actions and policy statements outlined under each pillar have helped the GN deliver a consistent message and encourage the responsible development of Nunavut's mineral resources. *Parnautit* is currently being reviewed for renewal to better reflect the current strategies and programs of EDT, to guide the MPR in their work, and to further promote investor confidence.

## RESOURCE MANAGEMENT

### IMPACT ASSESSMENT

EDT leads the GN's Socio-Economic Assessment Committee in the Nunavut Impact Review Board's screening and environmental review processes, which apply to large mineral exploration and mining projects in Nunavut. The goal of the Socio-Economic Assessment Committee is to ensure that adverse impacts are minimized and social, economic, and cultural opportunities are fully realized. The Socio-Economic Assessment Committee functions by assessing project proposals and making recommendations to the NIRB through the GN's wider Environmental Assessment Review Team. The overall design of the Environmental Assessment Review Team is to ensure resource development at all stages represents a net benefit to Nunavummiut.



## MONITORING

Once a project is approved, EDT leads an on-going socio-economic monitoring program. The GN chairs a Socio-Economic Monitoring Committee in each region of Nunavut to bring project-specific data into a regional context and evaluate expectations and concerns identified during the assessment process. The Socio-Economic Monitoring Committees bring a variety of stakeholders into a single forum to help shape and support project-specific monitoring programs and to provide guidance to regional monitoring efforts.

## PETROLEUM RESOURCES

Petroleum exploration in Nunavut began in 1962 and occurred throughout the territory until 1986. Nunavut is estimated to hold approximately a third of Canada's total petroleum resource endowment. Discovered resources in Nunavut are held in 20 licensed fields, mostly in the Sverdrup Basin in the High Arctic, and are estimated to host nearly 2 billion barrels of crude oil and 27 trillion cubic feet of natural gas.

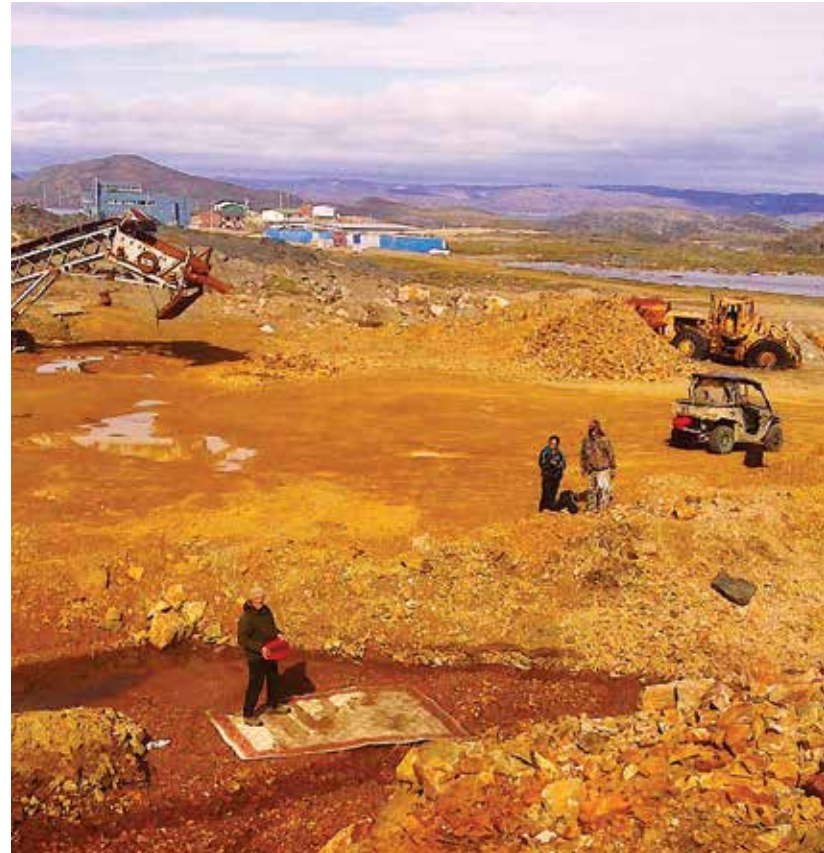
## OIL AND GAS SUMMIT

The GN, in partnership with the Qikiqtani Inuit Association, INAC, and the Canadian Association of Petroleum Producers recently held an Oil and Gas Summit that brought together stakeholders to answer the question "Is Nunavut Ready for Oil and Gas Development?" Over 75 delegates representing industry, government, and communities participated in the three-day summit. Stakeholders discussed oil and gas activities in Nunavut, heard from other jurisdictions, and listened to presentations on a variety of technical, regulatory, and environmental matters. Delegates came to the conclusion that more information and discussion through continuous engagement was needed before Nunavut's readiness for oil and gas activities can be properly determined. It was recommended that a Nunavut Oil and Gas Working Group be formed to monitor issues and continue the consultative process.

## PROSPECTOR DEVELOPMENT AND MINING INDUSTRY TRAINING

### NUNAVUT PROSPECTORS PROGRAM AND PROSPECTOR TRAINING

MPR oversees the Nunavut Prospectors Program. This program has two parts, the Introductory Prospecting Courses and the Nunavut Prospectors Program funding. MPR geologists annually present an Introduction to Prospecting Course to interested residents in communities across the territory. Since 2000, the course has been offered in each community in Nunavut once every three or four years.



GN prospecting course students panning near Cape Dorset  
– Courtesy of Government of Nunavut

To date, more than 950 Nunavummiut have successfully completed the course.

In 2015, courses were held in Arctic Bay, Cape Dorset, Iqaluit, Pangnirtung, Baker Lake, Rankin Inlet, Kugaaruk, and Kugluktuk, certifying a total of 91 people. In 2016, courses will be held in Clyde River, Grise Fiord, Kimmirut, Pond Inlet, Qikiqtarjuaq, Resolute Bay, Arviat, and Taloyoak.

Many graduates have subsequently applied to the funding program to start their own prospecting ventures. Financial assistance is provided to Nunavummiut with demonstrated prospecting skills who want to carry out their own work. The program allows for up to \$8,000 in annual financial assistance for each qualified prospector. There are typically 15 to 20 individual prospector's projects funded annually through this program operating throughout Nunavut.

## MINING INDUSTRY TRAINING

EDT worked with the Mining Industry Human Resources Council to produce Nunavut Mining Hiring Requirements and Available Talent Forecasts. Similar reports were completed for the Government of Yukon and the Government

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of the Northwest Territories in partnership with the Northwest Territories Mine Training Society to produce a Pan-Territorial Mining Labour Market Forecast and Report. The report was completed in 2015.

EDT contributes \$200,000 a year for multi-party mine training programs. The 2015-2016 funds were allocated for training potential workers across the three regions, through four programs:

- Driller's Assistant Training (Geotech Ekutak);
- Mining Matters and Tractor-Trailer Truck Simulator (Baffinland Iron Mines Corporation);
- Arviat Work Readiness Program and Class 3/Airbrake Training (Hamlet of Arviat); and
- Red Seal Cook Apprenticeship (Kivalliq Mine Training Society).

#### COMMUNITY EDUCATION AND AWARENESS

EDT works with other stakeholders, including the GN's Department of Education, Nunavut Arctic College, the Government of Canada, and the mining and exploration industry, on a number of programs and initiatives designed to inform Nunavummiut of the opportunities in mineral resources.

EDT programs and initiatives:

- Nunavut High School Math and Science Awards Program;
- Independent Science Program for Youth (I-SPY) to support science-education camps and activities throughout Nunavut;
- curriculum development for Nunavut schools; and
- planning for community outreach activities to create awareness of careers in mining.



Purple saxifrage, Hall Peninsula, Baffin Island – *Courtesy of INAC*





Nauyasat – Courtesy of North Arrow Minerals



Nunavut Tunngavik Incorporated (NTI) is the Inuit corporation responsible for overseeing the implementation of the Nunavut Land Claims Agreement. 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. The NTI Department of Lands and Resources, in cooperation with the three regional Inuit associations who manage surface rights for Inuit owned lands (IOL), is responsible for the implementation of Inuit responsibilities related to the management of IOL, minerals, and oil and gas.

NTI is the manager of the minerals for which Inuit are the fee simple title owners. For these minerals, NTI issues mineral rights through a negotiated mineral exploration agreement (EA) that provides a holder the right, if they meet the terms of the agreement, to receive a mineral production lease that allows for mining a discovered resource.

NTI uses a map selection system for the acquisition of mineral rights. Interested parties submit to NTI an expression of interest that includes a map of the proposed

exploration area. Expressions of interest and subsequent correspondence and negotiation are kept confidential by NTI and the applicable Regional Inuit Association until required to be made public, typically upon signing of an EA between NTI and the applicant.

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

Under the standard terms, successful applicants, upon executing the EA and submitting the first year's annual fees, will be granted the exclusive right to explore for minerals throughout the exploration area.

Apart from the EA, the applicant must also obtain permission, such as a land use license from the applicable Regional Inuit Association to gain access to the land. Holders of EAs are required to submit annual exploration work reports to NTI that remain confidential for a period of up to three years.

## NTI 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 provide that NTI will support exploration and mining provided there are minimal negative environmental and socio-economic impacts, that Inuit cultural and social needs are respected, that investment in Nunavut is encouraged, that land-use conflicts are resolved equitably, and that Inuit economic opportunities are maximized. All the policies are available from NTI.

## PROJECTS ON INUIT OWNED LANDS

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

Grandfathered leases are mineral leases which were established on Crown land that then became IOL after the Nunavut Land Claims Agreement was signed. The leases continue to be managed by the Crown, although the leases' rental fees and royalties are transferred to NTI.

PROJECT/DEPOSIT	HOLDER
<b>Kitikmeot Region</b>	
High Lake <sup>1</sup>	MMG Limited
Hope Bay <sup>2</sup>	TMAC Resources Inc.
Hood River	WPC Resources Ltd.
<b>Kivalliq Region</b>	
Angilak/Lac Cinquante	Kivalliq Energy Corporation
Amaruq	Agnico Eagle Mines Ltd.
Meadowbank <sup>3</sup>	Agnico Eagle Mines Ltd.
Meliadine <sup>4</sup>	Agnico Eagle Mines Ltd.
North Thelon Project/ Ukaliq	Forum Uranium Corp.
<b>Qikiqtani Region</b>	
Haig Inlet and SQ-05	Canadian Orebodies Inc.
Mary River/Eqe Bay <sup>5</sup>	Baffinland Iron Mines Corporation

*Note: All projects referenced above are discussed in this publication.*

1. The project involves Crown land, land held under NTI EAs, and grandfathered leases.
2. 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 EAs. 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 EAs, grandfathered leases, and the Vault Mineral Production Lease issued by NTI.
4. The project involves land held under NTI EAs as well as grandfathered claims and leases.
5. 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.

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Department of Lands and Resources

[www.tunngavik.com](http://www.tunngavik.com)  
Nunavut Tunngavik Incorporated

<http://gis.ntilands.com/iolis>  
NTI Lands, Interactive Maps & Data





When Nunavut became a territory in 1999, over 70 per cent of it was inadequately mapped and its geology was poorly understood. Informed decisions about land-use planning or exploration were challenging. A decision was made to open the Canada-Nunavut Geoscience Office (CNGO) to coordinate research efforts by geoscientists in government departments and to spearhead and improve geological research in Nunavut.

The CNGO is co-funded by Natural Resources Canada (NRCan) and Indigenous and Northern Affairs (INAC) at the federal level and the Government of Nunavut, Economic Development & Transportation (GN-EDT) at the territorial level. In addition, the CNGO conducts core-mandate research using Strategic Investments in Northern Economic Development (SINED) funding from the Canadian Northern Economic Agency (CanNor).

The office is managed with input from a management board made up of representatives from NRCan, INAC, GN-EDT and Nunavut Tunngavik Inc. (ex-officio). There are currently seven employees with expertise in Precambrian, Paleozoic and Quaternary geology, GIS, and on-line geoscience data dissemination. The CNGO's mandate is (1) to develop capacity in geoscience, (2) to maintain an accessible geoscience knowledge base, (3) to promote sustainable development of Nunavut's mineral and energy resources, and (4) to increase awareness of the importance of earth science for Nunavummiut. To accomplish this mission, the CNGO in collaboration with our geoscience partners, maps, interprets and reports on the geological features and resources of Nunavut, and engages the public on key geoscience issues.

In 2014, the CNGO began a renewed two-year SINED geoscience program. Activities are focused on three key themes (1) geoscience for responsible natural resource development; (2) geoscience for protecting investments in infrastructure; and (3) geoscience data dissemination and public outreach. The CNGO also partnered with NRCan in 2015 for the second phase of NRCan's Geo-Mapping for Energy and Minerals (GEM 2) program.

Summaries of each project are provided below. More detailed papers with preliminary observations and interpretations are published annually in the *Summary of Activities* available for download at [www.cngo.ca](http://www.cngo.ca) in December each year.



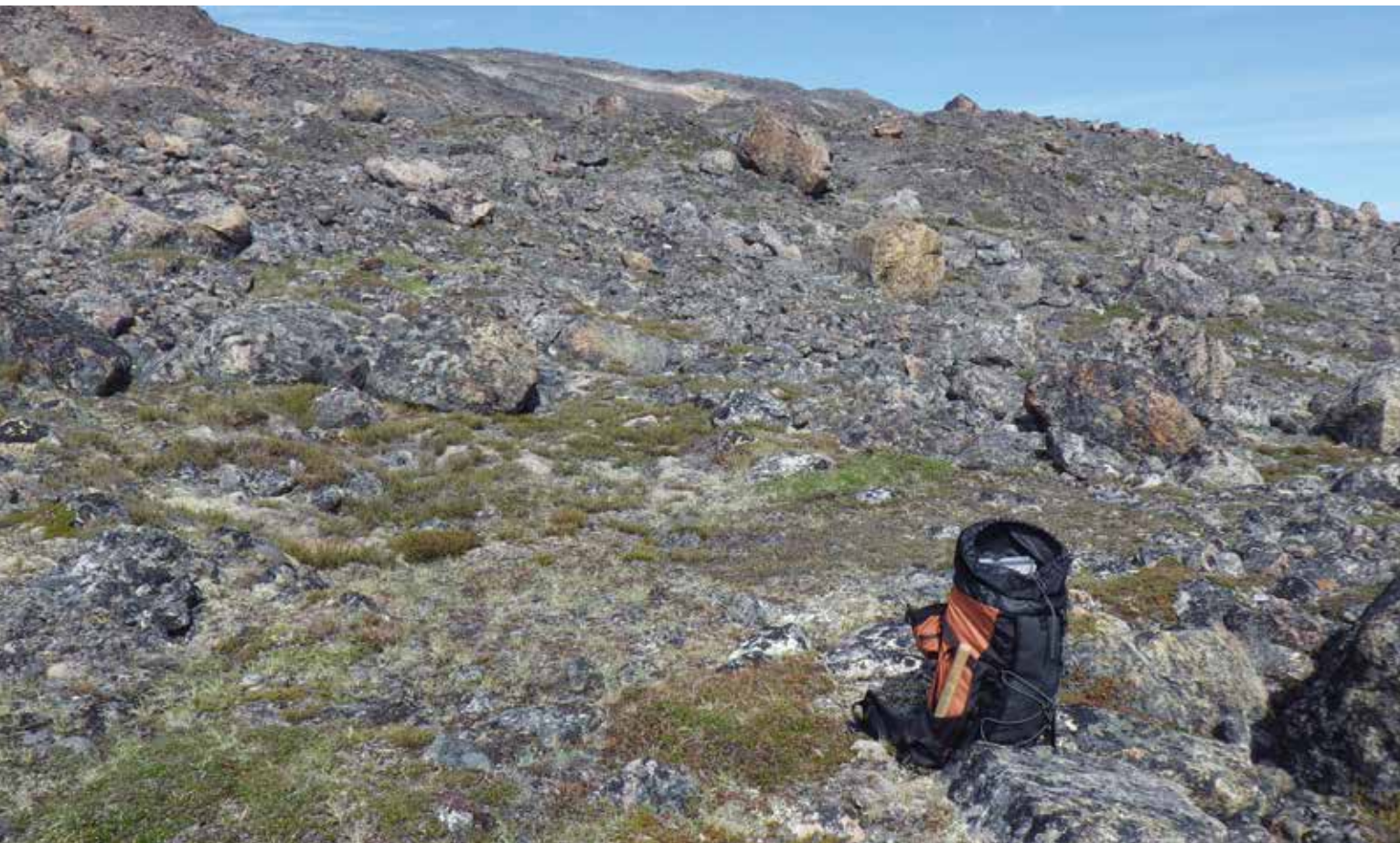
Geologist on traverse as part of the GEM Meta Incognita Peninsula field program – *Courtesy of CNGO*

## GEOSCIENCE FOR RESPONSIBLE NATURAL RESOURCE DEVELOPMENT

### TARGETED BEDROCK MAPPING TO ENHANCE EXPLORATION POTENTIAL OF SOUTHERN BAFFIN ISLAND

This work is part of the larger South Baffin mapping project, a partnership between the CNGO and NRCan's GEM 2 program on Baffin Island. To build on the success of the Hall Peninsula project (2012-2014), CNGO conducted targeted mapping and sampling on newly discovered mineral showings on the Hall Peninsula north of Iqaluit towards Nettilling Lake, and on the Meta Incognita Peninsula. The 2015 objectives were to complete regional bedrock mapping for the southern half of Baffin Island and to provide a new,





Meta Incognita peninsula, Baffin Island – *Courtesy of CNGO*

modern, geoscience understanding of this part of eastern Nunavut. For a large area north of Hall Peninsula, the project involved new aeromagnetic surveys. The project was led by the Geological Survey of Canada (GSC) in collaboration with the CNGO, the GN, Nunavut Arctic College, Carleton University, and Oxford University. The study area comprises all or parts of six 1:250 000 map areas.

#### **TARGETED BEDROCK MAPPING TO EVALUATE THE METAL POTENTIAL IN THE UNDER-EXPLORED ELU BASIN OF WESTERN NUNAVUT**

The Canadian Shield hosts a suite of superimposed intracratonic basins with demonstrated uranium and lead-zinc mineral potential. These include the Thelon and Baker Lake basins in the Kivalliq Region and the Bylot Basin on northern Baffin Island. Other basins, such as the Elu Basin in western Nunavut, could contain similar mineral potential, as they likely represent the northern extension of the prolific Athabasca Basin of Saskatchewan. The objective of this targeted bedrock mapping project is to enhance the level of geoscience knowledge in the Elu Basin in order to support mineral exploration.

During this second year of research, the project focused on the stratigraphy and radiometric surveys of the Burnside River Formation, and its underlying paleosol developed on granitic and greenstone-belt rocks of the Archean Slave Province. Based on the information obtained from the preliminary field observations, future exploration efforts would be best spent on the lower portions of granite-derived alteration profile, as well as on conglomerates directly overlying stratigraphic nonconformities.

#### **PALEOZOIC STRATIGRAPHY AND PETROLEUM POTENTIAL STUDIES FOR BAFFIN BAY AND EASTERN ARCTIC ISLANDS**

Petroleum potential in Baffin Bay has been inferred in the past. A rock fragment of organic-rich black shale was discovered by the CNGO in 2013 in a kimberlite pipe from the Chidliak diamond property on Hall Peninsula. This fragment provides the first evidence of Paleozoic-age petroleum source rocks in the region. Work continued in 2014-2015 to identify additional black shale xenoliths from these kimberlite pipes and to understand their distribution, stratigraphic position, age, and petroleum potential. Work



on marine microfossils in these xenoliths, known as conodonts, is also leading to a better understanding of the nature of the kimberlite deposits.

#### **INDUSTRIAL LIMESTONE RESOURCES ON SOUTHAMPTON ISLAND**

Since 2009, the CNGO has been exploring for high-calcium limestone on Southampton Island. The industrial products of high-calcium limestone, namely quicklime and hydrated lime, have been identified as a commodity used for mining in the Kivalliq region. Data collected in 2013 indicated that high-calcium limestone is found within the Lower Silurian Ekwun River Formation on western Southampton Island. More detailed field work was carried out in 2014 over an expanded prospective area, and samples were collected along six stratigraphic sections. Follow-up research in 2015 has identified mineable intervals of limestone with high to very high calcium oxide contents. A map outlining the limestone-purity distribution was compiled based on the calcium oxide contents, field observations, and distribution pattern of the Paleozoic strata.

#### **EXPLORATION TARGETING AND COST REDUCTION USING HIGH RESOLUTION SATELLITE DATA**

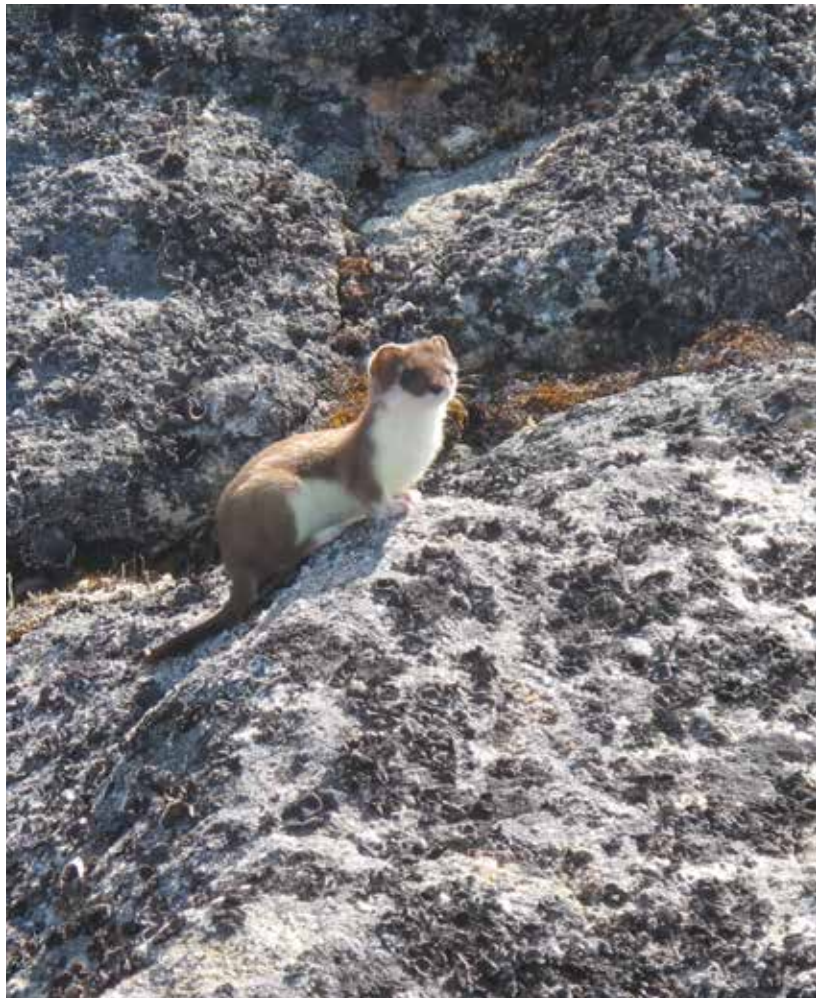
Natural-colour satellite imagery can be used to identify red-stained surfaces enriched in iron oxide. This information can, in turn, be used for mineral-exploration purposes, as the images may outline a geology that is prospective for economically important minerals such as gold, copper, or other metals. In 2015, many areas with iron staining were identified on Hall Peninsula using RapidEye™ coverage. The reddish, rather than bluish, colouration is associated with higher concentrations of iron oxide, providing insight on potential accumulations of precious metals (gold) and other metals (e.g. copper), which are commonly found in association with rusty-coloured rocks.

#### **REGIONAL LAKE SEDIMENT GEOCHEMISTRY TO SUPPORT MINERAL EXPLORATION IN FRONTIER REGIONS OF NUNAVUT**

In 2015, a geochemical survey was undertaken over an area of 16,000 km<sup>2</sup> north of Iqaluit by CNGO, in collaboration with the GSC, the Nunavut Research Institute, and Carleton University. The purpose was to collect till, stream sediment, lake sediment, and water samples to determine various aspects of the glacial history of the area, and to record field observations on glacial deposits (e.g. surficial sediments) and processes. An understanding of ice flow direction and important geomorphological processes is useful for exploration projects, the development of infrastructure, and to aid with environmental geochemical studies. The observations from this project will be compiled in original 1:100,000 surficial geology maps.

#### **RESOURCE ASSESSMENT OF NEW CARVING STONE SHOWINGS AND LARGE-SCALE DEPOSITS ON BAFFIN ISLAND**

Carving stone is an important commodity for the arts and crafts industry in Nunavut. The objective of the Nunavut Carving Stone Deposit Evaluation Program led by the GN-EDT and carried out with the collaboration of CNGO and GSC, is to assess traditional carving stone sites and to identify new deposits. Since 2010, more than 127 targeted sites have been mapped and evaluated. In 2015, the program evaluated sites near Rankin Inlet, a community that has no identifiable or accessible carving stone resources to date, sites on the south shore of Cumberland Sound in conjunction with the GSC's McKeand River bedrock mapping program, and sites near Arctic Bay, a community noted for its skarn marble carving stone deposits. A collaboration with the University of Manitoba aims to better understand what comprises artisan serpentinite and to gain insight into the geological processes that result in the formation of carving stone.



Short-tailed weasel (ermine) in its summer coat  
— Courtesy of CNGO

## GEOSCIENCE FOR PROTECTING INVESTMENTS IN INFRASTRUCTURE

### MAPPING AND CHARACTERIZATION OF THE SEABED OF FROBISHER BAY TO SUPPORT INFRASTRUCTURE DEVELOPMENT, EXPLORATION, AND NATURAL HAZARD ASSESSMENT

Potential infrastructure development around Frobisher Bay includes a hydroelectric development at Jaynes Inlet and Armshow River South, a fibre-optic data cable development project, the construction of a new deep-water port and infrastructure to support the development of the Chidliak diamond property. CNGO, the GN's Nuliajuk research vessel, and NRCan are collaborating to map the seabed of Frobisher Bay to help define risks to infrastructure projects, and support the development of solutions. The Nuliajuk, uses multibeam sonar technology to characterize the seabed floor and assess for geohazards. Near-shore ice, tidal currents, iceberg scour, submarine landslides, natural gas or petroleum seeps, wave exposure, and coastal stability are also being studied to help maintain existing facilities,

to plan for new construction, and to determine the viability of channel approaches.

### IQALUIT INTERNATIONAL AIRPORT TERRAIN HAZARD ANALYSIS

In 2010, CNGO, NRCan, and Laval University's Centre of Northern Studies launched a joint study to investigate permafrost conditions in Iqaluit. The results will support informed decision-making and the development of adaptation strategies to cope with the impacts of climate change in Iqaluit. Results from this multidisciplinary study indicate that permafrost conditions, such as ice-rich soils in Iqaluit, are highly variable spatially and with depth. Ground temperatures taken at three current monitoring sites (2010-2015) and one abandoned site (1988-2004) show that permafrost has warmed at depth and active layer thickness has likely increased since monitoring was first established in 1988. Thick snow cover is a major influence on the thermal regime of Iqaluit permafrost increasing the ground temperature at 10m depth by at least 2°C.



Geologists mapping on Meta Incognita peninsula, Baffin Island – *Courtesy of CNGO*



## GEOSCIENCE PUBLICATIONS AND WEB DISSEMINATION

### PUBLIC GEOSCIENCE INFORMATION

Nunavutgeoscience.ca is an initiative to increase the availability of public geoscience information in Nunavut. The website is an open-access data portal to public geoscience information enabled with search and direct download capabilities developed collaboratively by the CNGO, INAC, the GN, NRCan, and NTI in 2006. NUMIN (NUnavut MINeral showings), housed within the nunavutgeoscience.ca portal, contains: *NUMIN Showings*, metadata for mineral showings; *NUMIN References*, a file system for digital documents; and *Gateway*, a set of three web applications. In 2015, INAC and the CNGO worked on updating the showings information in NUMIN.

### EDUCATION AND OUTREACH

In 2015, CNGO and Dalhousie University again collaborated to offer a geoscience training program for Nunavut students. The program provides intensive hands-on experience for Northerners that could lead to careers in the public or private sector. The program is comprised of a two-week spring geological field school where four students from the Environment Technology Program at Nunavut Arctic College join third-year geology students from Dalhousie University for a summer work experience with the CNGO. This annual program, begun in 2013, has provided training opportunities for beneficiaries of the Nunavut Land Claims Agreement and northern experience for geology students from Dalhousie.



Pingo near Pond Inlet – Courtesy of Government of Nunavut

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[www.nunavutgeoscience.ca](http://www.nunavutgeoscience.ca)  
Nunavut Geoscience Data

# Kitikmeot Region

50 25 0 50 100  
Kilometres

Projection: Canada Lambert Conformal Conic, NAD 83

## LEGEND

### Commodity Groupings (Number of Projects)

- Base Metals (4)
- Coal (0)
- Diamond (0)
- Gemstone (0)
- Gold (14)
- Iron (0)
- Lithium (0)
- Nickel-Copper-PGE (0)
- Rare Earth Elements (0)
- Uranium (0)
- Active Mine (0)
- Inactive Mine (2)

Symbol with no fill means INACTIVE.

Bold project number and name signifies major or advancing project.

### Areas with Surface and/or Subsurface Restrictions

- CPMA Caribou Protection Measures Apply
- MBS Migratory Bird Sanctuary
- NP National Park
- NWA National Wildlife Area
- TP Territorial Park
- WP Wildlife Preserve
- WS Wildlife Sanctuary

### Inuit Owned Lands (Fee simple title)

- Surface Only
- Surface and Subsurface

### Geological Mapping Programs

- Canada-Nunavut Geoscience Office (See Nunavut map for details)

### Boundaries

- NLCA<sup>1</sup> Nunavut Settlement Area
- Nunavut Regions
- NILCA<sup>2</sup> Nunavut Settlement Area
- Provincial / Territorial

### Transportation Routes

- Meadowbank Road
- Meladine Road
- Milne Inlet Tote Road
- Yellowknife-Contwoyto Winter Road
- Proposed Bathurst Inlet Port and Road
- Proposed Izok Corridor Road
- Proposed Nunavut to Manitoba Road
- Proposed Steensby Inlet Rail Line

<sup>1</sup> NLCA The Nunavut Land Claims Agreement

<sup>2</sup> NILCA The Nunavut Inuit Land Claims Agreement





The Kitikmeot region occupies the westernmost portion of Nunavut, stretching along the mainland and islands of the Northwest Passage including portions of Victoria, Prince of Wales, and Somerset Islands, and all of King William Island and the Boothia Peninsula. It is the second largest administrative district in Nunavut. The region covers an area of 446,728 square kilometres (km<sup>2</sup>) and, with a population of 5,980 (2011 census), has one of the lowest population densities in the world. Cambridge Bay, located on the southern shore of Victoria Island, is the largest community in the region with a population of over 1,600. Kugluktuk, Taloyoak, Kugaaruk, and Gjoa Haven are the other communities. The region has no direct air connection with the territorial capital and most of the logistical support for work in the region comes through Yellowknife in Northwest Territories.

The geology of the Kitikmeot region is dominated by Archean and Proterozoic-age rocks of the Bear, Slave and Churchill provinces, and by the Paleozoic Arctic Platform in the north. The region has been historically explored for gold, base metals, uranium, platinum group elements, and diamonds. Four past-producing mines are located in the Kitikmeot region: Roberts Bay and Ida Bay silver mines are located in the Hope Bay area and the Lupin gold mine and Jericho diamond mine are located near the border with Northwest Territories.

More than 1.59 million hectares (ha) of active land tenure is held in the Kitikmeot region as mineral claims, prospecting permits, and mineral leases on Crown land and Inuit Owned Lands (IOL). The Crown land under active tenure has increased 30 per cent in the last year. Gold and base metals were the focus of all exploration carried out in the Kitikmeot in 2015; junior and mid-tier companies that were able to secure funding despite a continuing global downturn in the industry carried out the majority of this work. Most programs were low-cost with a limited drilling component. Companies are expanding their land position on prospective areas in anticipation of the industry's recovery in the future.

Kaizen Discovery Ltd, a new operator in the region, has been active in the Coppermine River area since the purchase of Tundra Copper in 2014. The company conducted drilling, prospecting, and mapping work targeting sediment-hosted stratiform copper-silver and volcanic-hosted mineralization. Based on encouraging results, and with the backing of a major Japanese investor, Kaizen Discovery staked additional ground extending coverage over the Neoproterozoic Rae Group basal contact to approximately 115 km strike length.



Drilling at TMAC's Hope Bay project – *Courtesy of INAC*

In the eastern Kitikmeot, Auryn Resources purchased North Country Gold and the numerous gold discoveries on the Committee Bay project. Auryn embarked on an exploration program that included drilling, till sampling, a geophysical survey, and property-wide high resolution imagery acquisition. Following the completion of the program, the company expanded its land holdings in the belt by staking an additional 158,885 ha.

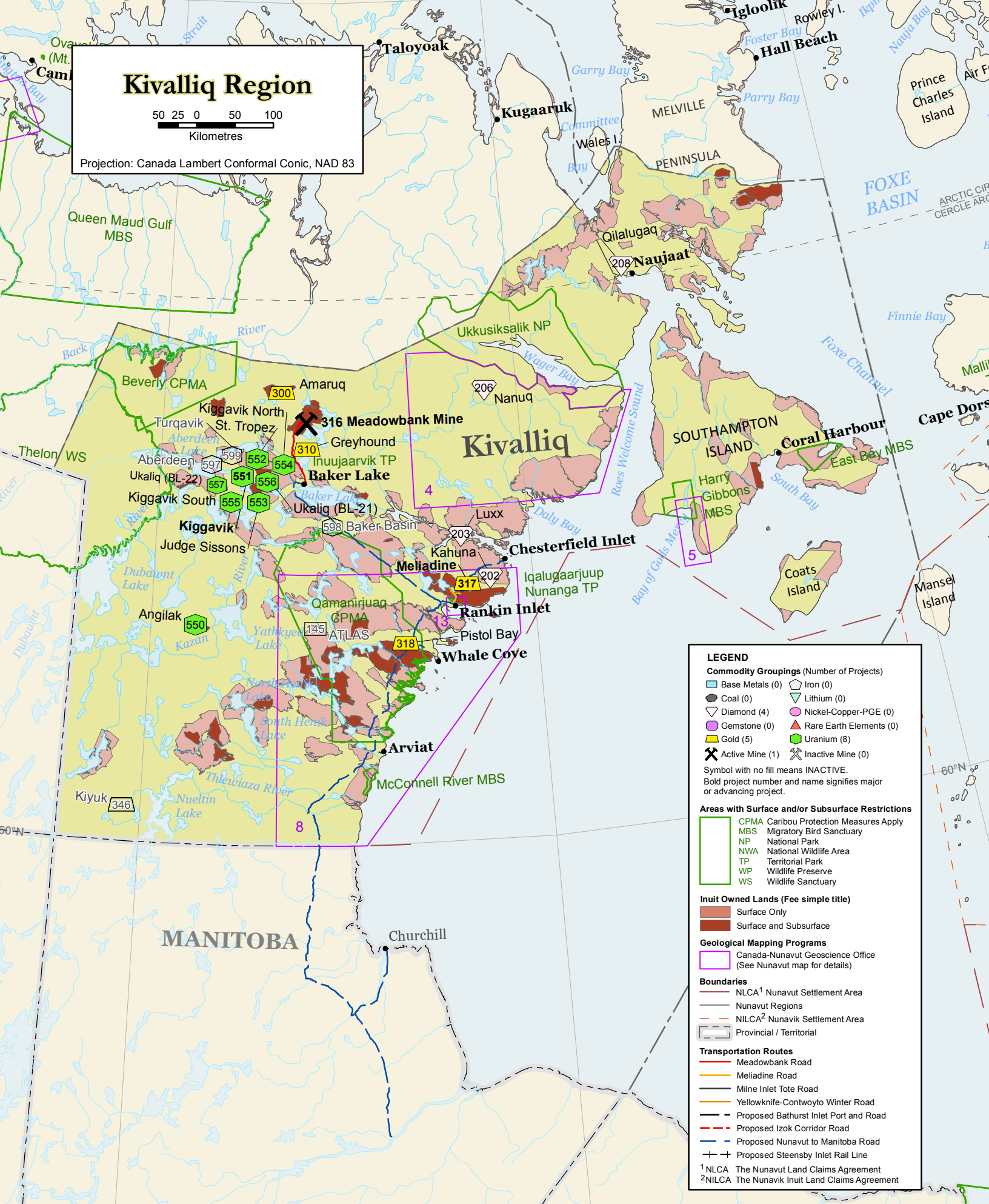
TMAC Resources Inc. purchased the Hope Bay and Elu Belt projects from Newmont Mining Corporation in 2012 and conducted exploration, environmental baseline studies and development on the Doris deposit and Madrid trend in 2013 and 2014. In 2015, TMAC secured financing of \$150 million and a debt facility of \$120 million. Work planned in 2015 included 35,000 metres of surface drilling, over 4,500 metres of underground drilling, extensive regional airborne geophysical surveys, and advanced development of both the Doris underground and mineral processing facilities.

Sabina Gold and Silver Corp. filed a National Instrument (NI) 43-101 technical report for the initial Feasibility Study on its Back River gold project. In 2015, Sabina embarked on a low-cost exploration program consisting of a two-hole drill program, an induced polarization (IP) survey, and geological mapping, as well as till and chip sampling of selected prospects. Results confirmed the presence of clastic- and felsic intrusive-hosted, near-surface gold mineralization in addition to typical banded iron formation-hosted gold. The company submitted its Final Environmental Impact Statement in November 2015.

# Kivalliq Region

50 25 0 50 100  
Kilometres

Projection: Canada Lambert Conformal Conic, NAD 83



## LEGEND

### Commodity Groupings (Number of Projects)

- Base Metals (0) Iron (0)
- Coal (0) Lithium (0)
- Diamond (4) Nickel-Copper-PGE (0)
- Gemstone (0) Rare Earth Elements (0)
- Gold (5) Uranium (8)
- Active Mine (1) Inactive Mine (0)

Symbol with no fill means INACTIVE.  
Bold project number and name signifies major or advancing project.

### Areas with Surface and/or Subsurface Restrictions

- CPMA Caribou Protection Measures Apply
- MBS Migratory Bird Sanctuary
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(See Nunavut map for details)

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- Proposed Steensby Inlet Rail Line

<sup>1</sup> NLCA The Nunavut Land Claims Agreement

<sup>2</sup> NILCA The Nunavik Inuit Land Claims Agreement



The Kivalliq is the central region of Nunavut on the west coast of Hudson Bay. The region shares its western and southern border with Northwest Territories and Manitoba, respectively. At 445,109 square kilometres, the Kivalliq is the smallest of the three regions. Rankin Inlet and Baker Lake are the key gateway communities for exploration activities. Other communities, such as Arviat, Chesterfield Inlet, Coral Harbour, Nauyasat, and Whale Cove, also benefit from investment in the region. In 2015, exploration in the Kivalliq region mainly focused on gold and uranium.

The bedrock geology is characterized by Archean and Proterozoic plutonic rocks, major Paleoproterozoic sedimentary basins, and numerous greenstone and metasedimentary belts of the Western Churchill Province (the Rae and Hearne domains). Younger Paleozoic strata of the Hudson Bay Lowlands are only found in the east and cover parts of Southampton and Coats islands. The diverse geology hosts a number of significant mineral occurrences and deposits including gold, uranium, diamonds, nickel, platinum group elements, lead-zinc-copper-silver, molybdenum, and minor rare earth elements.

About 80 km north of Baker Lake is the Meadowbank gold mine operated by Agnico Eagle Mines Limited. The open pit mine has been in continuous operation since 2010 and produced its two millionth ounce of gold this year.

Agnico Eagle is also developing Meliadine, an advanced gold project 25 kilometres from Rankin Inlet. The project plans include both an open pit and underground operations. In February 2015, the Meliadine project concluded the environmental assessment process and a project certificate was issued by the Nunavut Impact Review Board (NIRB).

Agnico Eagle is now working to obtain the final permits and licences required before the mine can operate.

Agnico Eagle additionally holds an Exploration Agreement with Nunavut Tunngavik Incorporated (NTI) for the Amaruq project, located on an IOL subsurface parcel 50 km north of Meadowbank mine. An extensive exploration drilling program in 2015 added significantly to the gold resources at Amaruq.

West of Baker Lake, uranium deposits, similar to those found in the Athabasca Basin of Saskatchewan, have been discovered in the Thelon Basin. The most advanced uranium project in the basin is the Kiggavik project led by AREVA Resources Canada. Hearings on the Final Environmental Impact Statement for the project were held in Baker Lake in March, and exploration work continued on the property in the summer of 2015.

Following the final hearing, NIRB issued its report to the then-Minister of Aboriginal Affairs and Northern Development recommending that the project not proceed at this time. This recommendation was based on shortcomings regarding the availability and quality of baseline data and uncertainty relating to the project start date. The then-Minister did not make a decision to accept or reject NIRB's recommendation prior to the federal election, so the report is with the new Minister of Indigenous and Northern Affairs and a decision is pending.

The Kivalliq region has a long history of mining, with two past-producing mines: the North Rankin Nickel Mine at Rankin Inlet, and the Cullaton-Shear Lake gold mine north of Nueltin Lake.



Fall sunset over drill rigs, Amaruq project – Courtesy of Agnico Eagle Mines Ltd.







Twilight sky near Aston Bay Holdings' Storm Copper project, Somerset Island – *Courtesy of Aston Bay Holdings Ltd.*

Nunavut's largest administrative district, the Qikiqtani region, covers an area of 1,040,418 square kilometres. The land mass is mainly islands of the Canadian Arctic archipelago, including Baffin, Devon, Cornwallis, Bathurst, Ellesmere, and many smaller islands. The northern part of the Melville Peninsula is also within the Qikiqtani region, as are the Belcher Islands in southeastern Hudson Bay.

Iqaluit, the territorial capital, is located on Baffin Island and is a major centre for exploration-related supplies and support services for the region. Other Qikiqtani communities which benefit from exploration and mining projects through providing services, supplies or employees include Igloolik, Hall Beach, Pangnirtung, Pond Inlet, Arctic Bay, and Clyde River. Cape Dorset, Grise Fiord, Kimmirut, Qikiqtarjuaq, Resolute, and Sanikiluaq are also located in the region.

The Qikiqtani region is underlain by Archean and Proterozoic rocks of the Churchill Province, and Paleozoic rocks of the Arctic Platform and Innuition Belt. The region hosts a range of mineral deposits and occurrences, including iron, base metals, gold, platinum-group elements, diamonds, and sapphires. There are two past-producing mines in the region: the Polaris lead-zinc mine on Little Cornwallis Island, and the Nanisivik zinc-lead-silver mine on northern Baffin Island near Arctic Bay. In 2015, exploration and mine development in the Qikiqtani was focused on diamonds, iron, and base metals.

Peregrine Diamonds Ltd. continued work on its 100 per cent-owned Chidliak diamond project. The focus was on

kimberlites CH-6 and CH-7, with a 558.5-wet tonne bulk sample extracted from CH-7, and core drilling on both CH-6 and CH-7. Valuation on the diamonds recovered from the bulk sample is expected to be completed in the second quarter of 2016. The results will allow the completion of a Preliminary Economic Assessment for a potential mine at Chidliak.

Baffinland Iron Mines Corporation successfully shipped its first carriers of iron ore to market in August 2015, less than a year after production began at the Mary River mine near Pond Inlet. Full production was delayed after Baffinland scaled back the project to an 'early revenue phase' in order to decrease start-up capital costs. In November 2014, shortly after the start of production, the company announced that it would seek approval from the Nunavut Impact Review Board (NIRB) to triple the amount of ore trucked to Milne Inlet for shipping and to expand the shipping season to 10 months of the year.






At the Storm copper project on Somerset Island, Aston Bay Holdings Ltd. undertook a ground geophysical program to follow up on work done in 2014 which had determined that copper mineralization on the property extends along a strike length of 30 kilometres. The company identified two high-priority drill targets and one additional target for further geophysical work. A joint venture on the property had been proposed between Aston Bay and Antofagasta plc, but this proposal was withdrawn by Antofagasta in January 2015 due to challenging economic conditions.

In April 2015, Arctic Copper Corp. staked 50,500 hectares (ha) in three claim blocks surrounding Kaizen Discovery Inc.'s Coppermine River property. The three claim blocks make up the **Arctic Copper** property, which is prospective for stratiform sediment-hosted and volcanic-hosted copper deposits with potential for nickel-copper-platinum group element mineralization. The company planned preliminary exploration work in late summer of 2015 but no work has been reported to date. Arctic Copper Corp. is a 100 per cent owned subsidiary of Sitka Gold Corp.

Crystal Exploration Inc. completed acquisition of the **Hood River** and **Muskox** diamond properties in November 2015 from private owners. The properties are located 200 km southeast and 245 km south of Kugluktuk, respectively. Three diamond-bearing kimberlites, Rush, James River, and Muskox, are known on the properties, with the most promising being Muskox. The Muskox kimberlite has two phases, both demonstrating diamond endowment. Results from mini-bulk samples of 865 and 63 dry tonnes yielded grades of 0.53 carats per tonne from the magmatic phase and 0.35 carats per tonne from the pyroclastic phase, respectively. More than twenty kimberlite drill targets have been identified through examination of historical work. No new geological work has been reported to date.

Churchill Diamond Corporation's **Pelly Bay** diamond property is located 40 km south of Kugaaruk. In May 2015, Churchill Diamond acquired Adamera Minerals' diamond data for the Amaruk diamond property and subsequently staked 151 mineral claims over Adamera Minerals' lapsed tenure for the property. It is now referred to as the Pelly Bay property. Twenty-four of the 30 kimberlites identified at Pelly Bay contain diamonds. No new work has been reported to date, although the company has applied for authorizations to continue exploration.

The **Stein** diamond property is owned by Arctic Star Exploration Corp. and located 85 km north of Taloyoak. This property consists of four contiguous prospecting permits over the area formerly covering Bluestone Resources' Grail property. Arctic Star acquired the existing digital exploration database that shows discrete circular magnetic anomalies up to 200 m in diameter at the up-ice terminus of the up-ice terminus of the kimberlite indicator minerals. The company plans to drill-test these magnetic anomalies to determine if they are kimberlites, and if so, to collect enough sample material to assess the diamond content. No geological work has been reported.

NUMBER	PROJECT	REGION	OPERATOR
<b>BASE METALS</b>			
 100	Arctic Copper	Kitikmeot	Arctic Copper Corp.
<b>DIAMONDS</b>			
 201	Hood River	Kitikmeot	Crystal Exploration Inc.
 205	Muskox	Kitikmeot	Crystal Exploration Inc.
 207	Pelly Bay	Kitikmeot	Churchill Diamond Corporation
 210	Stein	Kitikmeot	Arctic Star Exploration Corp.



Exploration camp at Storm copper project, Somerset Island – Courtesy of Aston Bay Holdings Ltd.



## BASE METALS

101	COPPERMINE RIVER
<b>Operator/Owner</b>	Kaizen Discovery Inc.
<b>Commodity</b>	Copper, Silver
<b>NTS</b>	86N07 – 86N11, 86N14 – 86N16, 86O11 – 86O14, 87A04, 87B01
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	45 km northwest of Kugluktuk

Following the 2014 acquisition of Tundra Copper Corp. and a 2015 staking program, Kaizen Discovery's total landholdings in the Coppermine River area are approximately 3,300 km<sup>2</sup>. The entire project is within the Bear Structural Province, an early Proterozoic volcano-sedimentary assemblage in the western Arctic. The region has a long history of mineral exploration with the earliest account of native copper documented in the early 1800s. More recent exploration, between the 1960s and 1990s, was focussed on sedimentary-hosted copper mineralization. The Coppermine river area is serviced through Kugluktuk with direct flights to Yellowknife, and sea-borne shipping access during summer months.

Kaizen is targeting two types of deposits: sediment-hosted stratiform copper, and volcanic-hosted copper and silver. During the 2014 field season, Kaizen completed a limited rock-chip sampling program aimed at increasing knowledge of the volcanic-hosted mineralization occurring as disseminated sulphides within the gently dipping Mesoproterozoic Coppermine Group siltstones and sandstones. Chip sampling returned weighted copper and silver values of up to 4.66% Cu and 12.2 grams per tonne (g/t) Ag, respectively, over 10 m, and 4.74% Cu and 23.33 g/t Ag over 6 m.

Kaizen's main exploration target, however, is the Neoproterozoic Rae Group dark shale and siltstone-hosted copper mineralization, analogous to the Central African Copperbelt, Kupferschiefer, and Keweenaw districts which host high-tonnage, high-grade (up to 2% copper) deposits. Kaizen's current land holdings cover approximately 115 km strike-length of this favourable host rock and extend north 23 km covering a possible northern extension of gently dipping stratigraphy.

In 2015, Kaizen conducted a multi-faceted field program that included additional staking, drilling, mapping, and prospecting, and targeted both types of copper mineralization found on the property. Regional-scale prospecting resulted in the discoveries of nine new copper showings. To date, no analytical results have been released.

The company also completed nine diamond drill holes for a total of 2,060 m with the majority of drilling targeting the sediment-hosted stratiform copper mineralization at the base of the Rae Group. This target was tested with seven regionally spaced diamond drill holes totaling 1,949 m, and spanning approximately 40 km of favourable lithology west of the historical drilling. Copper mineralization was intersected in all seven drill holes and consisted of disseminated, banded, and typically vertically-zoned mineralization with chalcopyrite at the top, bornite in the middle, and chalcocite at the base. These mineralized intercepts effectively doubled the total strike-length of the mineralized basal Rae Group to almost 80 km. One of the two westernmost drill holes intersected mineralized horizons with 0.57% Cu over 29 metres, which included a mineralized one metre interval grading 3.04% Cu and a separate interval grading 1.06% Cu over six metres. The second regional drill hole intersected a weakly mineralized 5.06 metre interval grading 0.26% Cu with an overlying interval grading 0.18% Zn over 3.11 metres. Although the program did not target zinc mineralization, its association with this type of copper deposit has been documented previously and can be useful in target definition.

The 2015 drill program also included two holes targeting the volcanic-hosted mineralization located on two southern claim blocks not contiguous with the main Kaizen land package. These two claim blocks cover several historical showings including the Dick showing with up to 10.20% Cu and 17 g/t Ag over 3.6 metres, and the Larry showing with 3.48% Cu and 8 g/t Ag over eight metres. Other showings include the Jack, Lloyd, Lars, and Cu-Tar showings with assays of up to 22.3% Cu over narrow widths. The two holes drilled in 2015 totaled 111 metres and resulted in intercepts of up to 1.1% Cu and 2.46 g/t Ag over 9.3 m and 1.0% Cu over 3.0 metres.

Following the successful 2015 exploration program, Kaizen staked an additional 185 km<sup>2</sup> of prospective terrain, extending the land holdings over the sedimentary copper-hosted horizon by about 35 km to total 115 km along strike.



Ice pan in fjord, Baffin Island – Courtesy of INAC

102 <sup>1</sup> 103 <sup>2</sup>	IZOK CORRIDOR (HIGH LAKE <sup>1</sup> , IZOK LAKE <sup>2</sup> )
Operator/Owner	MMG Limited
Commodity	Zinc, Copper, Lead, Silver, Gold <sup>1</sup> ; Zinc, Copper, Lead, Silver <sup>2</sup>
NTS	76M07, 76M10 <sup>1</sup> ; 86H10 <sup>2</sup>
Land Tenure	Crown, Subsurface IOL <sup>1</sup> ; Crown, Surface IOL <sup>2</sup>
Location	180 km southeast of Kugluktuk <sup>1</sup> ; 250 km south of Kugluktuk <sup>2</sup>

The Izok Corridor project includes the High Lake and Izok Lake volcanogenic massive sulphide (VMS) deposits located in the Slave Province. The current owner has submitted a proposal to the federal and territorial governments for a 325-kilometre road to link these deposits with a proposed port facility in Grays Bay. There was no new exploration activity on these deposits in 2015.

The High Lake deposit is a typical copper-zinc-lead-silver VMS deposit hosted in the High Lake greenstone belt and has an indicated mineral resource of 17.2 million tonnes

grading 3.35% Zn, 2.25% Cu, 0.31% Pb, 70 g/t Ag, and 0.95 g/t Au combined from the three main mineralized zones: AB, D, and West. Both open pit and underground mine designs are being considered for the High Lake property that if developed, would have an estimated mine-life of 12 years.

The Izok Lake property comprises five deposits: Central, North, Northwest, Inukshuk, and South. These deposits contain an estimated indicated resource of 14.4 million tonnes grading 12.9% Zn, 2.5% Cu, 1.3% Pb, and 70.5 g/t Ag with an additional inferred resource of 369,000 tonnes grading 6.4% Zn, 3.8% Cu, 0.3% Pb, and 39 g/t Ag. Mineralization is typically associated with one of seven distinctive types of rhyolite, overlain by carbonate-bearing sediments of the Contwoyto formation.

In 2014, MMG conducted a \$2 million work program that included studies on traditional knowledge related to the project area, community meetings, and a short exploration program consisting of four diamond drill holes. The company did not actively explore in the area in 2015.

MMG Resources Inc. indicated to the Nunavut Impact Review Board (NIRB) in April 2013 that it intended to modify the proposed project; however, neither a modified project



description nor an environmental impact statement has been submitted. The review of the Izok Corridor project is on hold until the submission of this documentation, expected in late 2016.

104 <sup>1</sup> 105 <sup>2</sup>	STORM <sup>1</sup> ; SEAL <sup>2</sup>
<b>Operator/ Partner</b>	Aston Bay Holdings, Commander Resources Ltd.
<b>Commodity</b>	Copper <sup>1</sup> ; Zinc, Silver <sup>2</sup>
<b>NTS</b>	58B14, 58B15, 58C02, 58C03, 58C05 – 58C07, 58C10 – 58C12, 58C14 <sup>1</sup> ; 58C11 – 58C14 <sup>2</sup>
<b>Land Tenure</b>	Crown, Subsurface IOL <sup>1,2</sup>
<b>Location</b>	120 km south of Resolute <sup>1</sup> ; 105 km south of Resolute <sup>2</sup>

The Storm copper-zinc-silver project, located on the northwest coast of Somerset Island, was optioned by Aston Bay Holdings from Commander Resources Ltd. in 2011. Mineral tenure on the property includes 139,630 hectares (ha) of mineral claims and six prospecting permits totalling 129,400 ha. The first discovery of mineralization at the property was made by Teck Cominco in the 1990s.

The Storm project includes two prospects, Storm Copper and Seal Zinc, both of which are near tidewater. Zinc mineralization at the Seal Zinc prospect is primarily in the form of strata-bound massive sphalerite hosted in carbonate rocks. At Storm, copper mineralization occurs as malachite, azurite, chalcocite, and bornite hosted in brecciated carbonates. Malachite and azurite are commonly found in mineralized boulders brought to the surface by freeze-thaw processes fragmenting bedrock.

Aston Bay acquired a database containing unreleased technical data from Teck in 2013 and ran an exploration program that summer including geophysics and till sampling. The following summer, the company completed a field program on the Storm property that included geological mapping, prospecting, and soil sampling. Several previously unknown mineralized showings were discovered and sampled. The total length of the known mineralized zone was increased to 30 km.

The Storm project is subject to an option agreement with Commander Resources. In April 2015, Aston Bay announced that the company was amending the agreement with

Commander to increase the earn-in time period by two years. Aston Bay currently has until 2018 to fulfill the requirements of the agreement, which include \$750,000 to be spent on exploration each year for 2015 and 2016, and \$1 million each year for 2017 and 2018, for a total of \$3.5 million in exploration expenditures.

In addition to the option agreement with Commander, Aston Bay signed a Memorandum of Understanding in 2014 with Antofagasta plc, giving Antofagasta the opportunity to earn up to a 70% interest in the Storm project over four project phases. The two companies expected to have a definitive agreement signed by the end of 2014; however, challenging economic conditions led to Antofagasta pulling out of the agreement in January 2015.

Work on the property during the 2015 field season focused on Storm, with an eleven-day field program consisting of a ground geophysical survey for gravity anomalies. Aston Bay announced in October that results from the geophysical survey identified two new high-priority drill targets, the Blizzard and Tornado prospects, which will be further evaluated in 2016. A new prospect, Squall, was also identified as a target for further geophysical work. Mineralization on the property remains open along strike and at depth.

Aston Bay is planning exploration work for the 2016 season, including a spring geophysical program, re-logging of historic core for geological modeling, and a summer drill program.



Copper-mineralized rock fragments, Storm copper project  
– Courtesy of Aston Bay Holdings Ltd.

## DIAMONDS

	CHIDLIAK
<b>Operator/Owner</b>	Peregrine Diamonds Ltd.
<b>Commodity</b>	Diamonds
<b>NTS</b>	25P13, 26A04, 26A05, 26A12, 26A13, 26B01, 26B02, 26B07 – 26B10, 26B15, 26B16
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	120 km east of Iqaluit

Peregrine Diamonds Ltd.'s Chidliak diamond project is located northeast of Iqaluit, on the Hall Peninsula of Baffin Island. The project's land tenure covers 582,476 ha of Crown and surface Inuit Owned Lands (IOL). Chidliak is the largest diamond exploration program in Nunavut, based on the total project area and the number of known kimberlites on the property.

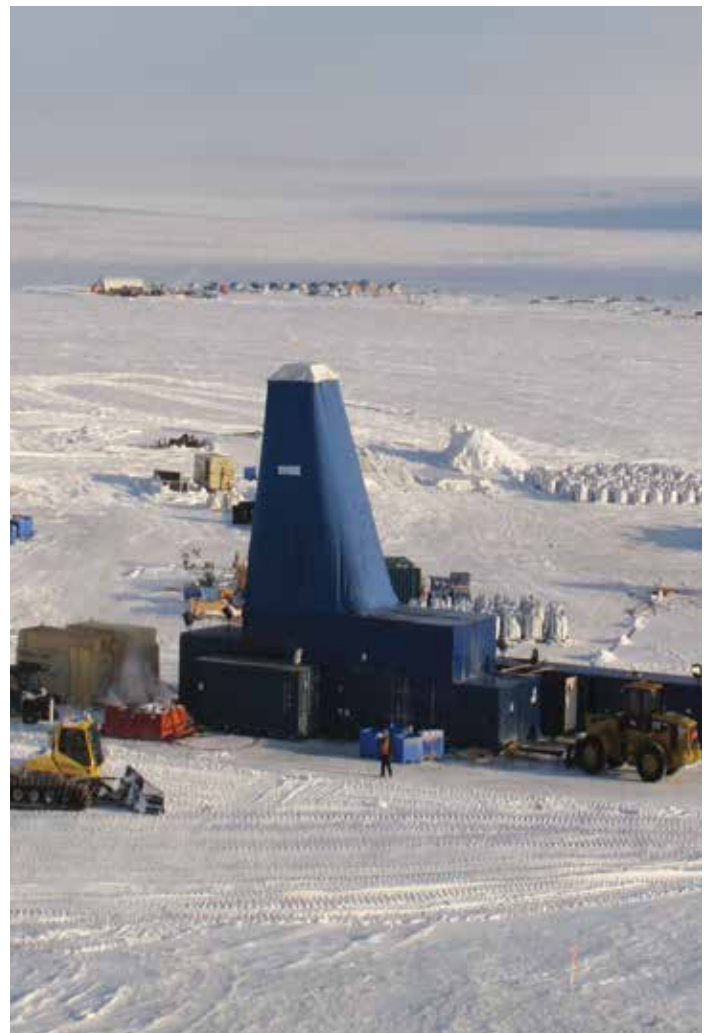
Exploration at Chidliak began in 2005 with the discovery of three occurrences of high concentrations of kimberlite indicator minerals (KIM). Glacial till sampling for KIM over the next two years identified high numbers of G10 garnets. Peregrine discovered three kimberlites (CH-1, CH-2, and CH-3) in 2008; between 2009 and 2011, exploration work brought the total number of kimberlites identified at that time to 59. Recent kimberlite discoveries have increased this number to 71, of which eight are potentially economic.

In early 2014, Peregrine released the analysis of the 508-tonne bulk sample collected in 2013. The parcel of diamond material recovered from the sample included a population of yellow diamonds. The company followed with a release of the diamond valuation results on a 1,013-carat sub-parcel of diamonds from the bulk sample that measured larger than 1.13 mm in size. Thirteen diamonds larger than three carats were recovered. The largest diamond, an 8.87-carat white/colourless octahedron with minor inclusions, was valued at \$36,158 US.

Peregrine conducted winter and summer exploration programs at Chidliak in 2014, including detailed work on kimberlites CH-6, CH-7, and CH-44. In June 2014, the company filed an updated NI 43-101 report including an inferred resource for CH-6 of 7.47 million carats, with an average price of \$213 US per carat.

The 2015 exploration program at Chidliak included collection of a bulk sample from kimberlite CH-7 totaling 558.5 wet tonnes. The sample was collected from six reverse-circulation drill holes with a maximum depth of 240 metres. The valuation of the resulting diamond parcel is expected in the first quarter of 2016. Other activities on the property this year included 1,361 metres of core drilling on CH-6 and CH-7 and sampling of existing core.

In November, the company announced preliminary results from the processing of the bulk sample from CH-7. The material from the KIM-5 zone of CH-7 contains diamonds in quantities significantly above the existing estimated grade for that kimberlite, and above the 2.58 carats per tonne inferred resource grade for the CH-6 kimberlite. Based on results from the 2015 field program, a revised inferred resource estimate for CH-6 and CH-7 is expected by the first quarter of 2016. A Preliminary Economic Assessment on a potential diamond mine is expected in the second quarter of 2016.



Large-diameter reverse circulation drill collecting a bulk sample, Chidliak property – Courtesy of Peregrine Diamonds





Loading bulk sample megabags onto a flatbed, Chidliak project – Courtesy of Peregrine Diamonds Ltd.

202	KAHUNA
<b>Operator/Owner</b>	Dunnedin Ventures Inc.
<b>Commodity</b>	Diamonds
<b>NTS</b>	55J14, 55002, 55003
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	35 km west of Chesterfield Inlet

The 13,000 ha Kahuna diamond property was first identified as prospective for kimberlites under a joint venture between Shear Minerals Ltd. and Stornoway Diamond Corporation in 2001. Historical work at Kahuna includes bulk sampling, drilling, and geophysics on three diamondiferous kimberlite dykes – Kahuna, PST and Notch. A fourth, currently unnamed kimberlite was identified on the property in 2015.

The Kahuna dyke is 5.5 km long, steeply dipping, and ranges in width from two to four metres. The largest diamond recovered to date from Kahuna is a 5.43-carat stone. Although a pink-coloured diamond has been recovered from this dyke, most of the diamonds are white to colourless. The average historical grade from a 356-tonne aggregate bulk sample collected from three pits yielded grades of approximately one carat per tonne.

In 2014, Dunnedin Ventures Inc. signed a four-year option agreement on the Kahuna property with private vendors. Dunnedin must spend a total of \$5 million, with a minimum of \$400,000 in the first year and at least \$1 million in each of the remaining three years to earn a 100 per cent interest in the project. In October 2015, the company completed the sale of shares worth \$1 million to private investors to finance further exploration on the project.

Fieldwork at the property during the 2015 season consisted of the collection of four tonnes of bulk sample material from the identified kimberlites and other targets for diamond analysis, as well as 180 till samples on priority targets identified from historical data. The company also completed mapping of the Kahuna, Notch, and PST kimberlites and identified target locations for future bulk samples. In November, the company announced that 96 commercial-size diamonds, with a total weight of 5.34 carats, had been recovered from a 0.82-tonne sample taken from the PST kimberlite. The diamonds are mostly white to off-white, with a small component of yellow and pink stones. The largest diamonds recovered from the sample were a 2.22-carat polycrystalline diamond and a 0.77-carat octahedral diamond.

Future work is expected to include processing of the Notch bulk sample material, and analysis of the soil and till samples to plan for future exploration drilling.

203	LUXX
<b>Operator/Owner</b>	North Arrow Minerals Inc.
<b>Commodity</b>	Diamonds
<b>NTS</b>	55005, 55011, 55012
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	65 km north of Chesterfield Inlet

The Luxx project covers about 40,400 ha and includes three prospecting permits. North Arrow Minerals Inc. acquired 100 per cent ownership of Luxx in August 2013. Both Luxx and the company's Mel diamond project in the Qikiqtani region are subject to a one per cent gross royalty on production payable to Anglo Celtic Exploration Ltd.

Over the last two seasons, North Arrow investigated trains of garnet and ilmenite KIM, identified from hundreds of till sample results. The company conducted an airborne



Waterfall on Mel property – *Courtesy of North Arrow Minerals*

magnetic survey and collected till samples on the property in 2013, and followed up in the 2014 season with two days of further sampling. In total 81 till samples were collected on priority targets identified from the 2013 work.

Analytical results have not yet been released from the till samples collected to date, but the company reported that data from the samples allowed for better definition of the KIM trains. North Arrow is currently working on acquiring permits to allow future exploration drilling on selected targets.


North Arrow Minerals Inc. acquired the Mel project in August 2013. The property consists of five prospecting permits covering approximately 73,865 ha of Crown land and surface IOL. Both this property and the Luxx diamond project in the Kivalliq region are 100 per cent owned by North Arrow and are subject to a one per cent gross royalty on production payable to Anglo Celtic Exploration Ltd. Previous exploration interest in the area was for base metals and nickel-copper-platinum-group element occurrences; however, the current exploration focus is on diamonds.

<b>204</b>	MEL
<b>Operator/Owner</b>	North Arrow Minerals Inc.
<b>Commodity</b>	Diamonds
<b>NTS</b>	46007 – 46010
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	135 km south of Hall Beach

The main targets at Mel are two KIM trains whose sources are undefined. These trains include eclogitic garnet and pyrope garnet, both of which can be indicative of diamonds in a kimberlite. North Arrow completed an airborne magnetic survey in 2013, and till sampling and prospecting in 2014.

In 2015, the company collected 227 till samples for analysis of their KIM content and geochemistry and to better define the KIM trains on the property. North Arrow expects to have results from the analyses by the winter of 2016; these results will be used to identify potential targets for further exploration including drill testing.



	NANUQ
<b>Operator/Owner</b>	Peregrine Diamonds Ltd.
<b>Commodity</b>	Diamonds
<b>NTS</b>	56G01, 56G02, 56G06 – 56G08, 56G10, 56G11
<b>Land Tenure</b>	Crown
<b>Location</b>	220 km northeast of Chesterfield Inlet

The Nanuq project is located between Chesterfield Inlet and Naujaat. Peregrine Diamonds Ltd. acquired a 100 per cent interest in the 127,492 ha property in 2006. The company discovered three diamondiferous kimberlite pipes during its 2007 drilling program targeting geophysical anomalies associated with kimberlite indicator mineral trains.

Peregrine ran several field programs at Nanuq between 2008 and 2014, including ground geophysics, geochemical sampling, prospecting, and minor drilling. The 2014 program consisted of prospecting along two known geophysical anomalies. No results from that program have been released to date.

In March 2015, the company spun off several of its projects, including Nanuq, to its wholly-owned subsidiary Peregrine Exploration Ltd. No fieldwork was planned on the property for the 2015 field season.

	QILALUGAQ
<b>Operator/Partner</b>	North Arrow Minerals Inc., Stornoway Diamond Corp.
<b>Commodity</b>	Diamonds
<b>NTS</b>	46K12, 46L09
<b>Land Tenure</b>	Crown
<b>Location</b>	10 km east of Naujaat (Repulse Bay)

The Qilalugaq diamond property covers 7,143 ha near the community of Naujaat (formerly Repulse Bay), and is seven kilometres from tidewater. Previous work by Stornoway Diamond Corp. reported a NI 43-101 inferred mineral resource to 205 m depth, of 26.1 million carats in

48.8 million tonnes of kimberlite. In 2013, North Arrow Minerals Inc. confirmed this resource estimate and in 2014, through a \$3.7-million work program, the company earned an 80 per cent interest in Qilalugaq from Stornoway, by fulfilling the conditions of its option agreement with the collection of a bulk sample of 1,500 tonnes from the 12.5 ha Q1-4 kimberlite complex. Previous kimberlite samples processed from limited trenching and large-diameter drilling at Q1-4 revealed a population of fancy yellow diamonds in the micro- and macrodiamonds recovered.

The company released preliminary results from the bulk sample in April 2015, stating that two geochemically distinct populations of diamonds had been identified in the sample. More than 21 per cent of the yellow diamonds recovered from the bulk sample were identified as rare type 1B diamonds, which commonly show intense yellow colouration.

In June 2015, North Arrow reported on the valuation of the diamond parcel recovered from the bulk sample. A total of 383.55 carats of diamonds greater than 0.85 mm were recovered, and the entire parcel was valued at \$13,795 US, with estimated prices per carat between \$43 and \$92 US. However, given the unanticipated presence of two populations of diamonds, and as the diamond parcel was small, the company believes that additional work involving a larger bulk sample is necessary to accurately determine the potential value of the diamonds in the Q1-4 complex at Qilalugaq. No work was reported on the property for the 2015 season.



Fancy yellow diamonds from the +7DTC (~2.5mm) size fraction of the Qilalugaq bulk sample  
– Courtesy of North Arrow Minerals

<b>209</b>	<b>QILAQ</b>
<b>Operator/Owner</b>	Peregrine Diamonds Ltd.
<b>Commodity</b>	Diamonds
<b>NTS</b>	25J16, 25O01, 25O02, 25O07, 25O08, 25O10, 25P02, 25P05, 25P07, 25P08, 26A05, 26A06, 26A12, 26A13, 26B09, 26B14, 26B16
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	130 km southeast of Iqaluit

The Qilaq diamond project, located east of Iqaluit on the Hall Peninsula, consists of 71 claims totaling 51,147 ha of mineral tenure. Three kimberlites, Q1, Q2, and Q3, have been found on the property.

Prior to the 2014 field season, the last reported work on Qilaq was completed in 2011 to evaluate KIM, gold, and platinum-group metal anomalies on the property. Two samples totalling 305 kg were collected in 2010 from Q1 and Q2. One diamond larger than 0.6 mm in size was recovered from a 62.7 kg sample taken at Q1, and three diamonds larger than 0.6 mm were recovered from the 242 kg sample collected at Q2.

Work by Peregrine in 2014 included a limited sampling program during which several grab and till samples were collected. No results from this work have been reported, and no work was reported on the property for the 2015 field season.

## **GOLD**

<b>300</b>	<b>AMARUQ</b>
<b>Operator/Owner</b>	Agnico Eagle Mines Limited
<b>Commodity</b>	Gold
<b>NTS</b>	66H01 – 66H03, 66H06 – 66H09
<b>Land Tenure</b>	Crown, Subsurface IOL
<b>Location</b>	120 km northeast of Baker Lake

Amaruq, acquired in 2013, is becoming the flagship exploration property for Agnico Eagle Mines Ltd. in Nunavut. The property covers 114,761 ha of both subsurface IOL and Crown lands. Following encouraging results from the first

season of work, Agnico Eagle increased the 2014 exploration expenditures on the project from an initial budget of \$1.5 million to \$10 million. The company doubled the budget again in 2015 to \$20 million, with the goal of expanding the resource estimate of the Amaruq deposit.

The 2014 exploration program included 31,598 metres of diamond drilling completed in 144 holes. Further work in 2014-2015 involved acquiring permits, collecting environmental baseline data, and surveying and engineering studies for the planned all-season access road from the Meadowbank gold mine situated 50 km to the southeast. In February 2015, 18 months after the discovery of Amaruq, Agnico Eagle announced a maiden inferred resource of 1.50 million ounces of gold in 6.60 million tonnes of ore grading 7.07 g/t. The majority of the inferred resources, 1.4 million ounces, are hosted in the Whale Tail zone with an additional 0.1 million ounces found in the historically named I, V, and R zones. In early March 2015, camp



Helicopter's eye view of Whale Lake  
– Courtesy of Agnico Eagle Mines Ltd.





Visible gold in drill core, Amaruq project  
– Courtesy of Agnico Eagle Mines Ltd

facilities were enlarged to accommodate 80 persons and a two-phase drilling program was initiated. In August, an updated inferred resource was released of 2.02 million ounces in 9.70 million tonnes of ore grading 6.47 g/t Au.

The Amaruq deposit remains open along strike and at depth. The property is currently understood to consist of five distinct east-west-striking mineralized zones, consisting of the I, V, and R zones, and two sub-horizons in the Whale Tail zone. The Whale Tail zone, where the majority of the drilling to date focussed, appears to be made up of five lenses along a strike length of at least 1.2 km and depth of 350 m. The 2015 drilling program concluded in mid-October after completing 378 holes over the two phases of the program, with over 108,000 m drilled. Preliminary results have established that the western extension of the Whale Tail zone is linked to the Mammoth zone as a continuous mineralized panel at least 2.3 km in strike length.

New discoveries in 2015 included the delineation of a high-grade east-plunging ore shoot in the Whale Tail zone and significant results from the V zone. Highlights from the Whale Tail zone included values of 6.3 g/t Au over 11.4 m at a depth of 383 metres (hole AMQ 15-347) and intersections along a plunging ore shoot yielded 8.1 g/t Au over 12.9 m at a depth of 296 metres, including 12.6 g/t Au over 3.6 m at a depth of 298 metres (hole AMQ 15-442). Drilling in the V zone intersected widespread and significant mineralization, with drill holes yielding 30.1 g/t Au (capped at 60 g/t, 90.2 g/t uncapped) over 5.2 m at a depth of 40 metres (hole AMQ 15-390) and 7.9 g/t Au (capped at 60 g/t; 22.9 g/t uncapped) over 23.4 m at a depth of 115 metres

(hole AMQ 15-461). Agnico Eagle anticipates that a third year of drilling will commence in February of 2016. The overall goal of this exploration work, pending positive results, is to develop Amaruq as a satellite operation to the nearby Meadowbank mine.

In March 2015, Agnico Eagle submitted an application for a Type B water licence. The company also applied to amend its land use permit to upgrade its seasonal road from Meadowbank to the Amaruq site to an all-weather road to facilitate year-round operations. The NIRB reviewed the proposed amendments and re-issued its screening decision report with the inclusion of additional terms and conditions to facilitate this change in the Amaruq project's scope.

<b>301<sup>1</sup> 302<sup>2</sup></b>	<b>BACK RIVER (GEORGE LAKE<sup>1</sup>, GOOSE LAKE<sup>2</sup>)</b>
<b>Operator/Owner</b>	Sabina Gold & Silver Corp.
<b>Commodity</b>	Gold
<b>NTS</b>	76G13, 76G14, 76J03, 76J04 <sup>1</sup> ; 76G09 – 76G11, 76G14 – 76G16 <sup>2</sup>
<b>Land Tenure</b>	Surface IOL, Subsurface IOL <sup>1</sup> ; Crown, Subsurface IOL <sup>2</sup>
<b>Location</b>	365 km west of Cambridge Bay <sup>1</sup> ; 390 km south of Cambridge Bay <sup>2</sup>

Sabina Gold & Silver Corp.'s Back River project, located in the northeastern part of the Slave Structural Province, comprises six properties: George, Boulder, Boot, Goose, Del, and Bath. The 100 per cent Sabina-owned exploration project encompasses about 80 km of banded iron formation (BIF) with gold mineralization present both within and outside the BIF units. Over the last two years, Sabina's exploration programs have concentrated on the George and Goose properties, both of which have numerous deposits at varying stages of exploration. The Back River project currently contains measured and indicated resources of 5.33 million ounces of gold and an inferred resource of 1.85 million ounces of gold. Current proven and probable mineral reserves are estimated at 2.50 million ounces of gold grading at 6.3 g/t Au. The mineral reserve estimate was calculated for the Umwelt, Llama, and Goose Main deposits, all of which are located on Goose property.

The Goose property is underlain by a folded sequence of turbiditic meta-sediments with subordinate oxide- and silicate-facies BIF belonging to the Beechey Lake Group.



Aerial view of Goose Lake camp, Back River project – *Courtesy of Sabina Gold and Silver*

The sequence is cut by late-stage faulting and intruded by felsic to gabbroic dykes. All of the Goose property deposits with NI 43-101 compliant resources are hosted within locally sulphidized BIF with interbeds of greywacke, siltstone, and mudstone. Gold mineralization is associated with quartz veining, silicification, and shearing within the iron formation and to a lesser extent within the sedimentary interbeds. Pyrite, arsenopyrite, and pyrrhotite are the dominant sulphides with chlorite, hornblende, carbonate, and grunerite often associated with gold mineralization.

The 2014 exploration program focused on the Echo, Boomerang, and Wing zones of the Goose property and consisted of 12,172 metres of diamond drilling, most of which centered on the Echo zone. Results included 9.4 metres of 8.35 g/t Au (drill hole 14GSE458) and 65.14 g/t Au over 6.2 m in drill hole 14GSE484. Currently, the gold resource at Echo is 181,000 indicated and 14,000 inferred ounces, and is open along strike and at depth. Drilling at the Wing prospect returned scattered intercepts of up to 8.23 g/t Au over 0.5 m and 2.62 g/t Au over 1.0 m.

Most of the 2015 activities concentrated on the preparation and filing of the NI 43-101 Feasibility Study, submitted to regulators in June, and on providing documentation for permitting of work. A limited winter/spring field program

and a multi-disciplinary limited summer field program focused on target generation within the Goose property. The spring program consisted of two shallow exploration drill holes at Hivogani and Nalaot prospects. Both of the holes intersected gold mineralization with grades of up to 0.82 g/t Au over 13.75 metres in mineralized quartz veins within the deformed clastic sedimentary and felsic intrusive unit, and 3.61 g/t Au over 2.0 metres in classic BIF host.

The summer field program targeted several prospects: Kogoyok, Hivogani, Llama North, Jackaroo, and Radar. The program consisted of an induced polarization survey, geological mapping, prospecting, and channel and till sampling. Additionally, re-logging of historical diamond drill core occurred from two holes drilled at either end of the 650 metre-long mineralized Kogoyok zone, 1.5 km west of the Echo deposit. The Hivogani mineralized trend is located approximately 1.5 km southwest of the Goose Main deposit and hosts mineralization outside of the BIF units with gold present in quartz veining in altered sedimentary and felsic intrusive rocks.

The Kogoyok prospect is hosted within a metasedimentary sequence consisting of a five metre-thick oxide iron formation overlain by a thinner mudstone and a 10-15 m-thick oxide



and silicate BIF with minor clastic interbeds. Arsenopyrite is the predominant sulphide and can reach up to 20% of the host rock in some samples. Lesser pyrite and pyrrhotite are also present. Sulphides occur in both iron formations, as well as in bounding clastic metasediments. Two felsic dykes and one gabbroic dyke cross-cut the sequence. Gold mineralization is spatially associated with arsenopyrite and occurs within the BIF and the felsic dyke. Grab samples of up to 28.1 g/t Au, 33.86 g/t Au, and 8.14 g/t Au were taken from oxide BIF, silicate BIF, and the felsic dyke, respectively.

In addition to sampling and geological mapping, 54 kilometres of induced polarization survey was carried out on four separate grids at Radar, Llama North, Jackaroo, and Higovani. In prospective areas with limited or no bedrock exposure, 229 till samples were also collected. Results of these studies have not been released to date.

Sabina submitted its Final Environmental Impact Statement for the Back River project to NIRB in late November 2015 and anticipates final hearings will take place in the first half of 2016.

303	CO-20
<b>Operator, Partner</b>	Transition Metals Corp., Nunavut Resources Corp.
<b>Commodity</b>	Gold, Copper, Zinc
<b>NTS</b>	76L10, 76L15
<b>Land Tenure</b>	Subsurface IOL
<b>Location</b>	215 km southeast of Kugluktuk

The 'Nunavut Alliance' is a five-year partnership, signed in 2012 between Transition Metals Corporation and Nunavut Resource Corporation, with the aim of generating projects and conducting mineral exploration in the Kitikmeot region of Nunavut and in the northern part of Northwest Territories. Currently, this alliance controls properties covering 1,248 km<sup>2</sup> of land with diamond, base metal, and gold prospects. The majority of these properties are located along the proposed 325 km-long road linking the Izok, Ulu, and High Lake properties (the Izok Corridor project) to Grays Bay on the Coronation Gulf. Work to date with this partnership has involved diamond exploration, land acquisition, and airborne geophysics totalling approximately \$1.8 million. The 2015 exploration program focused on one of two blocks located

within the IOL parcel CO-20. The 21,154-ha North property, located about half way along the proposed Izok to Grays Bay Road (see Izok Corridor project), is adjacent to the southern edge of the Ulu property. The North property contains numerous, previously drilled exploration targets along a shear zone with intercepts of up to 29.4 g/t Au over 4.5 metres and grab samples assaying at up to 92.33 g/t Au. The property also contains a volcanogenic copper-zinc showing.

The exploration program in 2015 consisted of compilation of historical exploration and drill-hole data aimed at creating a 3D model of the mineralization, as well as a helicopter-borne electromagnetic (EM) survey. The geophysical survey consisted of 275 line-kilometres of EM surveying and covered an area of 25 km<sup>2</sup> along the shear zone. This survey identified several high-priority gold exploration targets showing similar responses to those proven by historical drilling. VMS-type targets were also identified near the No Lake showing, located west of the shear zone, where historical sampling assayed at up to 2.19% Cu.

304 305 306 307 308	COMMITTEE BAY (ANURI-RAVEN <sup>1</sup> , FOUR HILLS-COP <sup>2</sup> , INUK <sup>3</sup> , THREE BLUFFS <sup>4</sup> , WEST PLAINS <sup>5</sup> )
<b>Operator/Owner</b>	Auryn Resources Inc.
<b>Commodity</b>	Gold
<b>NTS</b>	56J12, 56K07 – 56K10 <sup>1</sup> ; 56K05 – 56K07, 56K10 – 56K12 <sup>2</sup> ; 56P07 <sup>3</sup> ; 56J11 – 56J15 <sup>4</sup> ; 56K03, 56K04, 56K06 <sup>5</sup>
<b>Land Tenure</b>	Crown, Surface IOL <sup>1,3,4,5</sup> , Crown <sup>2</sup>
<b>Location</b>	245 km west of Kugaaruk <sup>1</sup> ; 260 km southwest of Kugaaruk <sup>2</sup> ; 130 km south of Kugaaruk <sup>3</sup> ; 215 km south of Kugaaruk <sup>4</sup> ; 290 km southwest of Kugaaruk <sup>5</sup>

Following two years of limited activities on its Committee Bay project, North Country Gold and new partner Auryn Resources embarked on an extensive field program in the summer of 2015. In September 2015, Auryn finalized the acquisition of North Country Gold and became the 100 per cent owner of the Committee Bay project and its land package of 66,610 ha. Auryn further acquired 158,885 ha of new claims along the belt and increased its land tenure to 217,600 ha.

The Committee Bay greenstone belt is a 300 km-long, five to 50 km-wide, Archean greenstone belt located in the Rae Domain of the Churchill Structural Province. Numerous exploration and mapping programs have been conducted on the belt since it was initially mapped by the Geological Survey of Canada in the 1960s, resulting in the discovery of high grade occurrences along the entire strike length of the belt.

The majority of past exploration work concentrated on the 4.1 km-long Walker Trend hosting the Three Bluffs deposit. Gold mineralization in this deposit is structurally controlled and hosted in gossanous, folded banded iron formation, and greywackes. Iron formation units, predominantly oxide facies, range in thickness from 10 to 55 metres with a strike length of 1.8 km. Three Bluffs has an established NI 43-101 compliant resource that estimates the total resource at almost 1.65 million ounces of gold. The indicated resource is 4.32 million tonnes grading at 4.91 g/t Au for a total of 683,000 ounces of gold and 5.52 million tonnes grading at 5.43 g/t for an inferred resource of 965,000 ounces of gold. The above estimate contains a high-grade subset with indicated and inferred resource of 501,729 ounces of gold and 772,179 ounces of gold, respectively.

In 2015, the field program was preceded by analysis of existing geological, geochemical, and geophysical data that resulted in the identification of several potential mineralized systems along the Committee Bay belt. The identification of these systems formed the core of the 2015 program. Exploration consisted of till sampling, geophysics, rotary air blast drilling, structural mapping, and drone aerial imagery acquisition with 10-cm resolution conducted over the entire property. The main focus of the program was the West Plains and Raven areas, on strike and southwest of the Three Bluffs deposit, that was drilled in the past, returning intercepts of up to 14.76 g/t Au over 8.7 metres and 36.22 g/t Au over 2.43 metres, respectively. A till sampling program was conducted across the southwest part of the Committee Bay project. Samples were 3 to 5 kg and were collected from active frost boils. The survey resulted in the identification of five new anomalies ranging between one and 10 km in length, three of which defined a new 20 km-long trend. In addition to till sampling, an induced polarization survey was conducted over the property. Finally, a 3,000-metre rotary air blast drill program was completed, aimed at delineating the orientation of high-grade ore shoots. This drilling method is an especially cost-effective way of testing targets at up to 100 metres deep and has shown results comparable to diamond drilling, which is more

expensive. Drilling at the White Plains zone intercepted both low- and high-grade mineralized zones, returning values of up to 13.65 g/t Au over 12.19 metres in the high-grade zone and 1.26 g/t Au over 10.67 metres in the low-grade zone.

309	ELU BELT
Operator/Owner	TMAC Resources Inc.
Commodity	Gold
NTS	77A02, 77A07, 77A10
Land Tenure	Crown, Surface IOL
Location	90 km west of Cambridge Bay

In addition to the Hope Bay property (described below), as part of the 2013 deal with Newmont Mining, TMAC acquired mineral claims covering approximately 305 km<sup>2</sup> of the Elu belt. The Elu belt, located approximately 30 km northeast of the Hope Bay belt, and of a similar age,



Processing drone-collected imagery data at Committee Bay  
– Courtesy of INAC



is a typical Archean greenstone belt and is composed of mostly mafic-dominated bimodal volcanic rocks and minor intercalated metasediments. The southern end of the Elu belt swings westward forming a concave structure in which the supracrustal rocks are shared with the Hope Bay belt, possibly linking the two belts. The Elu belt is cut by a major north-south trending shear zone marked by strong iron carbonate alteration. Limited historical exploration work conducted on the belt showed similarities with the Hope Bay belt and indicates that there is potential for significant gold mineralization within the Elu belt.

During the 2015 exploration season TMAC commissioned two airborne geophysical surveys on the Elu belt: a gravity survey and a Magnetic/EM survey. The gravity survey was completed on the entire property while the Magnetic/EM survey was suspended after surveying approximately 53 per cent of the target area due to limited daylight and deteriorating weather conditions. TMAC plans to complete the remaining part of the survey during the 2016 exploration season. The cost of the survey will allow the company to fulfill the assessment requirements for this group of claims until 2017.

<b>310</b>	GREYHOUND
<b>Operator/Partner</b>	Agnico Eagle Mines Limited, Aura Silver Resources Inc.
<b>Commodity</b>	Gold, Silver, Zinc, Copper, Lead
<b>NTS</b>	56D12, 56D13, 66A09, 66A10
<b>Land Tenure</b>	Crown, Surface IOL
<b>Location</b>	40 km northeast of Baker Lake

The Greyhound precious metals project consists of 22 claims covering an area of 21,748 ha. It is located 35 km south of the Meadowbank gold mine, close to the all-season road connecting Baker Lake and Meadowbank mine.

The prospect is characterized by a north-striking quartz vein system at the margin of a felsic sub-volcanic intrusion and mafic metavolcanic rocks in an Archean greenstone belt setting. The claims surround Aura Lake and include high-grade silver and anomalous gold and silver occurrences that were discovered in 2011. The Dingo gold-copper prospect lies to the northeast of Aura Lake where previous exploration identified a large gossanous zone with associated mineralization.



Freight for Auryn Resources' Committee Bay project, being loaded into a Turbo Beaver – *Courtesy of INAC*

Aura Silver Resources Inc. signed a definitive option agreement with Agnico Eagle Mines Limited in June 2014. The option agreement allows Agnico Eagle the opportunity to earn a 51 per cent interest in the Greyhound claims over three years, with an option to increase the ownership interest to 70 per cent during an additional three-year period with \$1.75 million in expenditures and \$250,000 in cash payments to Aura Silver. Agnico Eagle is the operator of the property during the agreement.

In 2014, Agnico Eagle exercised its option and completed seven drill holes and a soil-sampling program at Greyhound. A second phase of drilling in 2015 focussed on the Aura Lake prospect and the Dingo prospect. Eight drill holes totalling 1,557 metres were drilled, with four holes in each prospect, to investigate priority targets identified from an earlier geophysical survey and analyses of soil and grab samples that yielded enriched gold, silver, copper, and zinc results. New gold intercepts were reported from a hole drilled east of Aura Lake into a potential porphyry system. A stockwork zone of quartz-carbonate veining within mafic volcanics was intersected in drill core for over 25 metres, with the last 1.5 metres returning 6.41 g/t gold. At the Dingo prospect, values of 3.31 g/t gold over 2.7 metres including 1.5 metres of 5.68 g/t Au were also reported from one drill hole. Further drilling and geophysical work is planned for this property in 2016.



Whale Tail deposit with Amaruq camp – *Courtesy of Agnico Eagle Mines Ltd.*

<b>311</b>	HOOD RIVER
<b>Operator/Owner</b>	WPC Resources Inc.
<b>Commodity</b>	Gold
<b>NTS</b>	76L14, 76L15
<b>Land Tenure</b>	Subsurface IOL
<b>Location</b>	210 km southeast of Kugluktuk

WPC Resources Inc.'s Hood River property is located on IOL and covers an area of approximately 8,000 ha. The property borders the northern and eastern sides of Ulu gold project that is controlled by WPC under a separate option agreement. Hood River was initially explored in the late 1960s and was purchased by WPC from Inukshuk Exploration in 2014. Historical exploration programs conducted by various operators have resulted in the discovery of multiple gold showings across the Hood River

area as well as two diamond discoveries that were explored by Shear Diamonds Ltd. in the late 1990s and early 2000s.

The Hood River property lies within the High Lake volcanic greenstone belt in the northern part of the Slave Province, and covers a series of multiple folds in Archean metavolcanic and metasedimentary rocks. A late-stage felsic volcanic intrusion dissects the folded assemblage into eastern and western components. The Hood River gold occurrences are found in typical shear-hosted quartz veins.

The 2014 field exploration program conducted by WPC focused on evaluating eight documented gold occurrences and consisted of a chip and grab sampling program. Some of the best samples included a 57.1 g/t Au sample from the North Fold Nose showing located approximately six kilometres north of the Ulu deposit, a 10.95 g/t Au sample from the Blackridge showing and a 5.52 g/t Au sample from Penthouse North and Second Lake occurrences. No work was done on the property in 2015.



<b>312<sup>1</sup> 313<sup>2</sup> 314<sup>3</sup> 315<sup>4</sup></b>	<b>HOPE BAY (BOSTON<sup>1</sup>, CHICAGO<sup>2</sup>, DORIS<sup>3</sup>, MADRID<sup>4</sup>)</b>
<b>Operator/Owner</b>	TMAC Resources Inc.
<b>Commodity</b>	Gold
<b>NTS</b>	76008 – 76010 <sup>1</sup> ; 76009, 76010, 76015, 76016 <sup>2</sup> ; 77A03 <sup>3</sup> ; 76015, 76016, 77A03 <sup>4</sup>
<b>Land Tenure</b>	Crown, Surface IOL, Subsurface IOL <sup>1,2,3,4</sup>
<b>Location</b>	165 km west of Cambridge Bay <sup>1</sup> ; 180 km west of Cambridge Bay <sup>2</sup> ; 125 km west of Cambridge Bay <sup>3</sup> ; 130 km west of Cambridge Bay <sup>4</sup>

TMAC Resources Inc.'s Hope Bay project encompasses three separate deposits, Doris, Madrid and Boston, located along the 80 km-long Hope Bay greenstone belt. Originally discovered in the mid-1980s, this belt was the focus of major exploration and development work successively conducted by BHP Billiton, Miramar Mining Corporation, and Newmont Mining Corporation, before TMAC acquired the deposits in 2013. Since the purchase, TMAC has conducted aggressive exploration and development programs, released a favourable Preliminary Economic Assessment and Prefeasibility Study, and increased the total measured and indicated resources by 62 per cent. Current total proven and probable reserves are estimated at 3,507,000 ounces of gold at 7.7 g/t Au. The measured and indicated resources for the three deposits totals 4,511,000 ounces of gold at an average grade of 9.2 g/t Au, while the total inferred resource is estimated at 1,429,000 ounces of gold at 7.4 g/t Au.

The project is located within the Bathurst structural block of the northeastern portion of the Slave Structural Province. The Hope Bay greenstone belt is an 80 km by 20 km, north-south trending elongated belt with the Doris deposit in the north, the Boston deposit on the southern end, and the Madrid Trend deposits located close to and south of Doris. Deposit types and mineralization styles vary between the three areas. Doris is a typical Archean lode gold deposit hosted in a steeply dipping, 3 km-long quartz vein system in a folded and metamorphosed sequence of mafic volcanic rocks. These volcanic rocks are predominantly amygdaloidal, variolitic, and pillowed basalts with minor intercalated metasediments. The Doris Hinge zone, in the northern part of the deposit, is a north-dipping anticline axis hosting

high-grade mineralization. Visible and disseminated gold occurs predominantly in quartz veins with minor mineralization occurring in the adjacent breccia zones.

The Madrid Trend deposits are located in the northern portion of the Hope Bay belt south of the Doris deposit, and consist of the Naartok East and West, Spur, Rand, Suluk, East Patch, Patch 7, Patch 14, and Wolverine occurrences. The gold-bearing trend is associated with brecciated hanging wall splays off a northwest-southeast to east-west striking deformation zone and the deposits are characterized by sulphidation and replacement of favourable mafic volcanic units. Gold mineralization is associated with disseminated pyrite, albitization, and carbonitization with secondary paragonite and hematite.

The southern end of the Hope Bay belt hosts the Boston deposit, which is set in a complexly-folded bimodal suite of volcanic rocks in contact with metasedimentary rocks. Gold mineralization occurs in three major steeply dipping anastomosing quartz-carbonate vein systems within a high



Snowmobiles on the ice at a winter drilling site, Agnico Eagle's Meliadine project – Courtesy of INAC

strain zone. Mineralization is associated with pyrite within the vein systems and can be found in the wall rocks, marked by distal chlorite-calcite and proximal ankerite, quartz, and sericite alteration assemblages.

Work completed in the first three quarters of 2015 involved the drilling of 38 surface drill holes totaling 4,382 metres at Doris and 65 diamond drill holes (a total of 24,326 metres) at Madrid's Naartok and Suluk zones. Drilling at Suluk was successful in intersecting high-grade mineralization at depth, indicating that there is potential for the expansion of the existing resource. In total, 8,671 line-kilometres of EM surveys were flown, mostly over the northern part of the Hope Bay belt. A second part of the planned survey designed to cover the Boston deposit and a gravity survey over the entire belt were not completed and have been postponed until the 2016 exploration season. The focus of 2016 work will be the construction of processing facilities at Doris and advancing the deposit through the permitting and regulatory processes. Construction of the mill building is scheduled to commence in April 2016, with completion in time for the processing plant delivery scheduled during the 2016 sealift. The company is in a good financial position having raised more than \$150 million through its initial public offering in July 2015 and having secured an additional debt facility for \$120 million.



Helicopter's eye view of Amaruq camp  
– Courtesy of Agnico Eagle Mines Ltd.

TMAC has modified the project design at the Doris North site and has begun the process with NIRB to have the project certificate amended. The proposed project is currently undergoing a technical review and a public hearing will follow.

The Madrid deposit is also under review by NIRB in a separate process (Hope Bay Phase II). TMAC has indicated that it will submit its Draft Environmental Impact Statement in the summer of 2016. The company has applied to NIRB to allow a bulk sampling program to begin on the Madrid deposit prior to the completion of the Hope Bay Phase II review.

316	MEADOWBANK MINE
Operator/Owner	Agnico Eagle Mines Limited
Commodity	Gold
NTS	56E04, 66A16, 66H01
Land Tenure	Crown, Subsurface IOL
Location	75 km northeast of Baker Lake

The Meadowbank Mine is 100 per cent owned by Agnico Eagle Mines Limited. Production began at the open pit mine in 2010, and the mine has produced 2 million ounces of gold as of September 2015. The mine has a workforce of approximately 788 people, of whom 34 per cent are Inuit from across the Kivalliq region. Operations at the mine support a variety of businesses in Baker Lake and elsewhere in Nunavut.

In 2014, the mine produced a record 452,877 ounces of gold, and Agnico Eagle expected to reach 85% of that production in 2015, with an estimated production of 380,000 oz. In the first nine months of 2015, the company reported 279,224 ounces of gold produced. In the fourth quarter, production is expected to be similar due to higher grades being mined from the Portage pit. Gold output at Meadowbank is expected to decrease to 310,000 ounces in 2016 as the mine enters later stages of operation and as ore grades and available reserves decrease.

The 77,774 ha Meadowbank property includes the Goose Island, Portage, and Vault deposits that together make up the Meadowbank Mine site. The deposits and all mine infrastructure are located on IOL with grandfathered Crown mining leases. A Mineral Production Lease with



NTI is in place for the Vault deposit, including the Vault extension which is also located on subsurface IOL.

The geology at the Goose Island and Portage deposits comprises deformed and metamorphosed Archean quartzites, iron formation, ultramafics, and felsic to intermediate volcano-sedimentary rocks of the Woodburn Lake group. Locally, the Woodburn Lake group is tightly folded, structurally complex, and located between regional-scale granitic plutons. Host rocks and associated gold deposits are at the greenschist to amphibolite grade of metamorphism.

The Goose Island and Portage deposits are separated by only 500 m, and both are hosted by magnetite-rich iron formation. Gold mineralization at Goose Island and Portage is associated with quartz veining and pyrite-pyrrhotite replacement of magnetite in the iron formation, which at Goose Island has a north-south strike-length of over 750 m, dips steeply to the west and splays at depth to 500 m. The Portage deposit is approximately 1.85 km long and all its lithologies are highly folded along a north-northwest-trending deformation zone. Both fold limbs on the Portage deposit dip moderately to the west. The mineralized zones have true thicknesses ranging from three to 12 m and may be up to 20 m thick in the hinge zone.

The 1.2 km-long Vault deposit is located three kilometres northeast of Portage pit. At Vault, the deposit is hosted by an assemblage of gently-dipping intermediate to felsic volcanic rocks and porphyry dykes that exhibit evident hydrothermal alteration over widths of several metres. An intersecting set of faults at oblique angles within the rocks seems to control the degree of mineralization. The majority of the gold mineralization is confined to shear zones that are continuous for several hundred metres, contain disseminated sulfides, and are discordant to geological contacts. Sericite and silicic alteration is confined to the gold-bearing ore zone and is typically eight to 12 m thick. Additional mineralized lenses can be found in the hanging wall up to five metres thick. This style of mineralization at Vault is distinct from the banded iron formation-hosted deposits at Goose and Portage.

In 2014, reserves at Vault were reduced by 246,000 ounces due to lower gold prices and associated productions costs. However, with favourable US to Canadian dollar currency exchange rates and lower fuel costs, Vault expansion studies were undertaken and a decision was made in July 2015 to re-include 150,000 to 200,000 ounces of those reserves as part of the Vault Expansion.



Meadowbank all weather road in the winter  
– Courtesy of Government of Nunavut

Proven and probable open pit reserves at Meadowbank, including the Vault expansion, are presently estimated at 1.2 million ounces of gold from 11.8 million tonnes grading 3.08 g/t Au. Unchanged from 2014 estimates are measured and indicated resources at 0.8 million ounces and inferred resources at 0.4 million ounces.

Agnico Eagle has submitted a revised project description to NIRB, and the board is currently conducting a technical review. It is anticipated that this process will be completed in the first half of 2016. If the revised project description including the Vault Extension is approved, a three-year remaining mine life is expected at Meadowbank with production continuing through to 2018.

317	MELIADINE
Operator/Owner	Agnico Eagle Mines Limited
Commodity	Gold
NTS	55J13, 55J14, 55K16, 55N01, 55N02, 55O04
Land Tenure	Crown, Subsurface IOL
Location	20 km northeast of Rankin Inlet

The Meliadine project is 100 per cent owned by Agnico Eagle Mines Limited and was acquired from Comaplex Minerals Corporation in 2010. The property consists of 111,757 ha, with Crown mineral claims covering 105,999 ha and Crown mineral leases covering 931 ha, as well as a smaller area of subsurface IOL. On the subsurface IOL an Exploration Agreement with NTI covers 4,827 ha, and in July 2015, Agnico Eagle announced the signing of an Inuit Impact Benefit Agreement for the project with NTI. Agnico Eagle recently acquired an additional 68,012 ha of mineral tenure on Crown land that covers the west-northwest extension of the regional fault structure at Meliadine. The property is accessible from the community of Rankin Inlet via an all-season road constructed by Agnico Eagle in 2013.

The deposits at Meliadine are structurally controlled and gold mineralization occurs in association with multiple quartz-carbonate-bearing shear zones or laminated vein quartz systems within the polydeformed turbidites and sulphidized iron formation of the Tiriganiaq formation. Several distinct deposits have been outlined within the regional Meliadine gold trend that extends for at least 80 km along the Pyke fault in a west-northwest direction.

During the past year, Agnico Eagle added significant resources to the Meliadine project. In March 2015, Agnico Eagle filed a NI 43-101 report that updated the resource calculation, based solely on the Tiriganiaq and Wesmeg deposits. The company considers these estimates to be conservative because a significant amount of measured and indicated gold resources could be added to the reserves through conversion drilling in the future. Combined proven and probable reserves on the property total 3.31 million ounces of gold (an increase of 494,000 ounces from 2013 estimates) from 13.9 million tonnes of ore at a grade of 7.44 g/t Au (an increase over the 7.38 g/t obtained in 2013). Indicated resources are estimated at 3.29 million ounces and inferred resources have been increased 28 per cent to

3.46 million ounces in 14.1 million tonnes grading 7.65 g/t Au. Metallurgical studies indicate that gold recovery would be approximately 96 per cent for the ore reserve.

For 2015, Agnico Eagle budgeted \$64 million for capital and development costs at Meliadine, with \$21 million devoted to extending the underground ramp an additional 2,500 m from a vertical depth of 215 m. This extension will enable future resource conversion drilling into the deeper parts of the Tiriganiaq and Wesmeg/Normeg zones. The 3 km-long Tiriganiaq deposit remains open at depth and open to the west.

In February of 2015, NIRB issued a project certificate for the Meliadine project following the successful completion of its environmental assessment. The project certificate allows Agnico Eagle to proceed with applications for the remaining permits and licences. In October 2015, a type B water licence was issued by the Nunavut Water Board for the construction phase and pre-development work. Public hearings on the company's type A water licence application are scheduled for January 2016. Once the type A water licence is issued, mine production can begin.

The cost to construct the mill and all facilities is estimated to be \$911 million, with an expected mine life of 9 years. Annual gold production of the future mine is estimated at 326,000 ounces per year in years one to three and 362,000 ounces per year in years four to nine. Underground operations are planned throughout the life of the mine, while open pit activity would take place in years four to seven.

318	PISTOL BAY
Operator/Owner	Northquest Ltd.
Commodity	Gold
NTS	55K05 – 55K07, 55K12, 55L08, 55L09
Land Tenure	Crown, Surface IOL
Location	50 km north of Whale Cove

The Pistol Bay project was acquired in December 2010 by Northquest Ltd. and consists of 104 mineral claims covering 86,129 ha. Gold mineralization on the property is associated with magnetic anomalies confined within a narrow 2 km-wide zone along a west-trending fault-bounded corridor within the Rankin-Ennadai greenstone belt that extends from Hudson Bay inland for at least 90 km.





Night drilling on the Vickers target, Pistol Bay project  
– Courtesy of Northquest Ltd.

From 2011 to 2015, the company invested approximately \$13 million and completed 100 drill holes in the eastern part of the property for a total of 21,750 m. Of this drilling, 17,195 metres and 69 drill holes were dedicated to the Vickers target. Eighteen holes (a total of 4,550 m) were completed in 2014 and limited results were reported in early 2015. The mineralized strike length of Vickers was extended from 200 to 400 m.

Planned exploration expenditures of \$2.8 million were announced for 2015. Northquest completed 8,090 m of drilling in 34 holes and carried out 50 line-kilometres of ground IP surveying. The majority of the drill program focussed on the Vickers target, a steeply dipping gabbro-

diorite intrusive complex in fault contact with altered clastic metasedimentary units in the footwall, mainly represented by quartzite and sandstone. In-fill drilling tested the extensions of mineralization to the east and west. Numerous holes intersected gold mineralization, as visible gold grains, from 100 m to 200 m vertical depth both in the hanging wall and in the footwall. Mineralization appears to be open at depth and results obtained are consistent with similar grades from historic drill hole results both up-dip and down-dip. Outside the zone of strong silicification, gold grade values continued to be encountered outside the gabbro diorite complex where deeper drilling into less altered footwall metasedimentary units returned assays of 1.09 g/t Au over 73.4 m including 1.61 g/t Au over 45.0 m. A second drill target at Bazooka was selected to establish the extent of mineralization along fold closures and testing of an EM anomaly along a fold axis structure at Defender, a third target.

In March of 2014, Northquest filed a NI 43-101 technical report on the Pistol Bay project. Additional financing for the project was obtained in May 2015 through a private placement with Nord Gold N.V. for a total of \$4.4 million.

#### IRON

350	MARY RIVER MINE
<b>Operator/Owner</b>	Baffinland Iron Mines Corporation
<b>Commodity</b>	Iron
<b>NTS</b>	37C09, 37G02, 37G05 – 37G07, 37G11, 37G12, 47H08, 37C10, 37C15, 37C16, 37E13, 37F01, 37F08 – 37F10, 37F14 – 37F16, 37G01
<b>Land Tenure</b>	Crown, Surface IOL, Subsurface IOL
<b>Location</b>	155 km south of Pond Inlet

Baffinland Iron Mines Corporation shipped the first bulk carrier of iron ore from the Mary River iron mine to market in Germany in August 2015. The Mary River mine includes five identified deposits of high-grade iron ore, as well as several additional iron prospects. Regional exploration is continuing to identify further potential resources. ArcelorMittal SA and Nunavut Iron Ore Acquisition Inc. each have 50 per cent ownership of the Mary River mine and project.

Iron mineralization has been known on the property since 1962. The Mary River iron deposits, which occur primarily



Geologists sampling sulphidized iron formation outcrop, Mary River project – *Courtesy of Baffinland Iron Mines Corporation*

as Algoma-type banded iron formation, are hosted within rocks of the Archean Mary River Group, which are part of the Committee Bay granite-greenstone belt. Deposit 1, which is currently being mined, has a total strike length of approximately four kilometres, and contains about 350 million tonnes of iron ore at an average grade of 64% iron.

Baffinland was issued a project certificate by NIRB in December 2012. Shortly thereafter, Baffinland applied to amend its project certificate to allow for the shipment of ore north through Milne Inlet and to continue development of the project using a phased approach. NIRB conducted a technical review that resulted in the modification of the Mary River Project Certificate, which was re-issued in May 2014. Construction on the mine was completed in the summer of 2014 and mining is a year-round operation. Under the amended project certificate, the mine is permitted to produce up to 4.2 million tonnes of ore per year, which is stockpiled at Milne Inlet for shipping during the open-water season.

In October 2014, the company announced that it wished to make further modifications to the project, citing the

decreased demand for and price of iron ore. Under the Phase 2 Amendment, currently under review, Baffinland is proposing to increase the quantity of iron ore shipped from Milne Inlet to 12 million tonnes per year, with a corresponding increase in the number of haul trucks using the tote road. The company is also proposing to extend the shipping season to ten months of the year, which would require the use of icebreaking ships.

The Nunavut Planning Commission (NPC) determined the Phase 2 proposal did not conform to the North Baffin Regional Land Use Plan, and would require a further review. Baffinland subsequently applied for, and received, an exemption from the Land Use Plan from the Minister of Aboriginal Affairs and Northern Development. This exemption allowed the company to submit its amendment, without a further review by NPC, to NIRB for consideration. The company is expected to submit a new Environmental Impact Statement for Phase 2 in the spring of 2016.

The 2014 field season at Mary River included collection of grab and channel samples for analysis, and a 544-km ground magnetic and gravity geophysical survey. All the exploration took place out of the Steensby Inlet camp. Community consultations, environmental studies, and wildlife and archaeological surveys are ongoing.

The company budgeted \$3 million for its exploration program in the summer of 2015. No results from this work have been reported to date.



### URANIUM

550	ANGILAK
<b>Operator/Owner</b>	Kivalliq Energy Corporation
<b>Commodity</b>	Uranium
<b>NTS</b>	65J06, 65J07, 65J09 – 65J11, 65J15
<b>Land Tenure</b>	Crown, Subsurface IOL
<b>Location</b>	230 km west of Baker Lake

The Angilak project comprises one IOL subsurface parcel (RI-30) surrounded by 110 Crown mineral claims, with a total combined area of 101,111 ha. The property covers part of the Angikuni and Yathkyed sub-basins of the Baker Lake Basin and surrounding Archean basement rocks. Fracture-controlled uranium mineralization occurs with base



metal and precious metal sulfide mineralization in graphitic-chloritic tuffaceous metasedimentary host rocks of the Baker Lake Group. The basin is recognized as an established district for basement-hosted, unconformity-associated, vein-hydrothermal type uranium deposits.

Early exploration work in the region from the 1970s to the early 1990s identified over 150 uranium occurrences. Kivalliq Energy Corporation has invested over \$55 million to date on more than 89,500 metres of diamond and reverse circulation drilling, geophysics, mapping, and sampling programs since acquiring the property in 2008. Efforts have largely focused along the west-northwest Lac 50 Trend where the company has identified a number of new mineralized occurrences, including the ML, J1, Nine Iron, Flare, Hot, and Southwest prospects.

In 2013, Kivalliq Energy released an updated NI 43-101 compliant resource estimate for the Lac 50 Trend deposit including the Main Zone, Western and Eastern extensions, J4, and Ray zones. Using a cut-off grade of 0.2% U<sub>3</sub>O<sub>8</sub>, an inferred resource currently is 2.83 million tonnes grading 0.692% U<sub>3</sub>O<sub>8</sub> for a total of 43.3 million lbs of U<sub>3</sub>O<sub>8</sub>. Within the same cut-off grades, the deposit also has the potential to be mined for other commodities as it contains 1.88 million ounces of silver, 10.4 million lbs of molybdenum, and 15.6 million lbs of copper.

The Dipole prospect lies between the Yathkyed and Angikuni Basins and is located 27 km southwest of the Lac 50 Trend. Dipole is considered one of the most prospective targets based on anomalous geochemical soil, and EM survey results. The anomaly extends for 2 km in a northeast direction from the discovery and is contained within a 3.4 km long coincident uranium soil anomaly.

The 2015 exploration program at Angilak focused on drilling at Dipole, collection of 408 enzyme leach soil samples from Rib and Dipole (two targets identified as high-priority anomalies from work conducted in 2014), and regional sampling; \$1.5 million was allocated in 2015 and the work was successfully completed for \$900,000. The company reports that the results from the geochemical soil sampling combined with airborne EM and ground surveys has helped to identify prospective uranium mineralization.

A nine-hole drill program, totaling 958 m, tested an anomaly over a 150-metre strike-length. All holes encountered anomalous levels of uranium mineralization hosted in brecciated carbonate and iron-oxide altered volcanoclastic

horizons between thicker sequences of metabasalt, similar to the style of mineralization associated with the Lac 50 Trend deposits. Notable intersections include assays of 0.17% U<sub>3</sub>O<sub>8</sub>, 6.7 g/t Ag, and 0.16% Mo over 8.0 m, including 0.42% U<sub>3</sub>O<sub>8</sub>, 27.4 g/t Ag, and 0.71% Mo over 1.0 m in one hole, and 0.88% U<sub>3</sub>O<sub>8</sub>, 17.6 g/t Ag, and 0.46% Mo over 3.5 m, including 2.34% U<sub>3</sub>O<sub>8</sub>, 44.0 g/t Ag, and 1.13% Mo over 1.3 m in a second hole. Drilling at Dipole reached mineralization at relatively shallow depths (15 to 110 m) and remains open along strike and at depth.

Other targets include the Yat, Rib, IM-76, Forte, and PWR prospects as well as numerous other historical showings and mineralized occurrences. Yat occurs as a 200 m diameter negative magnetic anomaly along the northern margin of the Angikuni basin, and forms part of a linear northeast alignment with other prospects. Both Dipole and Rib lie along similar northeast-trending electromagnetic conductors indicating that several prospective corridors for mineralization appear to lie along at least two orientations: the west-northwest Lac 50 trend and the northeast Dipole-Rib trend, increasing exploration potential in the area. Surface samples with macroscopic pitchblende mineralization at Dipole and Rib also contain silver, molybdenum, and copper mineralization. Assays from one grab sample at Yat were reported to contain 1.82% U<sub>3</sub>O<sub>8</sub>, 6.8% Cu, 80,900 g/t Ag, 211 g/t Au, 3.1 g/t Pt and 6.7 g/t Pd, which are the best results known on the property.

551 <sup>1</sup> 552 <sup>2</sup>	KIGGAVIK <sup>1</sup> , ST. TROPEZ <sup>2</sup>
<b>Operator/Partner</b>	AREVA Resources Canada Inc., DAEWOO International Corporation, JCU Exploration (Canada) Co. Ltd. <sup>1</sup> ; AREVA Resources Canada Inc. <sup>2</sup>
<b>Commodity</b>	Uranium
<b>NTS</b>	66A05, 66A06, 66A11, 66A12 <sup>1</sup> ; 66A05 – 66A07, 66A10 – 66A12 <sup>2</sup>
<b>Land Tenure</b>	Crown, Subsurface IOL <sup>1</sup> ; Crown, Surface IOL <sup>2</sup>
<b>Location</b>	80 km northwest of Baker Lake <sup>1</sup> ; 70 km north of Baker Lake <sup>2</sup>

The Kiggavik uranium project, west of Baker Lake in the Thelon Basin, covers an area of 32,203 ha on 37 Crown and IOL mining leases at Kiggavik and Sissons, and

16,682 ha on 18 Crown mineral claims at the St. Tropez prospect. The Kiggavik project is a joint venture with JCU Exploration (Canada) Co. Ltd. (33.5 per cent) and DAEWOO International Corp. (1.7 per cent) with AREVA Resources Canada as the majority partner (64.8 per cent) and operator of the project. The St. Tropez project is 100 per cent owned by AREVA Resources Canada.

Since 2007, AREVA has invested more than \$100 million at Kiggavik and surrounding interests. The property has seen extensive exploration work carried out on five main mineralized deposits: Main, Centre, East, Andrew Lake, and End Grid. Several other deposits and prospects on the property have also been investigated, including Bong, Sleek, Jane, and Granite. The Kiggavik Main, Centre, and East deposits lie about two kilometres south of the Thelon fault zone that juxtaposes older basement metasedimentary units against younger Thelon sandstone. Approximately 10 km farther south is a parallel east-trending fault zone called the Judge Sissons fault zone where the Andrew Lake and End Grid deposits are located. Polyphase and extensive illite-sericite altered metasedimentary units host the majority of the uranium mineralization discovered in the area. Mineralization also occurs in altered granite and late intrusive dykes. The primary uranium mineral is pitchblende with coffinite as a minor component.

Exploration in 2015 at Kiggavik consisted of a drilling program and a small ground-based gravity survey on a number of grids. Objectives of the drill program were to follow-up on initial results from 2014 discoveries of mineralization at the Contact and 85 West prospects to better determine their size and style of mineralization. In these two areas, 18 holes were completed for a total of 4,512 m. Exploration started in 2014 continued, and followed-up on targets identified by AREVA through mineral prospectivity analyses using geophysical surveys data (ground and airborne gravity, magnetic and resistivity) and new detailed structural and lithological interpretations. A number of drilling targets were determined and 11 holes were completed for a total of 2,821 m. A small program of ground gravity work was completed in 2015 on a number of grids.

At the St. Tropez showing, work in 2015 consisted of ground geophysical surveys and a diamond drilling program. Additional fieldwork involved a scintillometer survey and detailed ground mapping over known anomalous areas. The mapping confirmed the geology in the area and verified structural information and alteration and mineralization relationships. Small ground geophysical surveys (gravity, magnetics, and electromagnetics) and the resulting data was merged with historical surveys to assist with the selection of drilling targets. Diamond drilling was also completed in 2015, with a total of 1,051 m drilled in four holes.



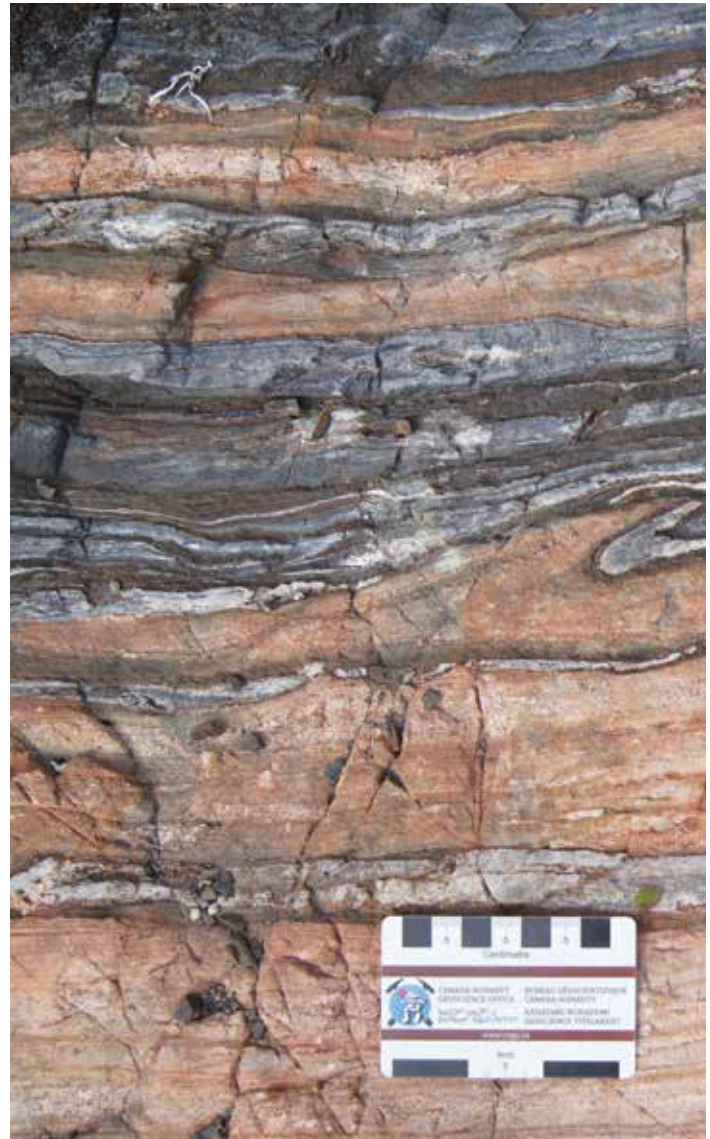
Moonrise over core boxes, AREVA Canada's Kiggavik project – *Courtesy of AREVA Resources Canada Inc.*



Kiggavik is the most advanced uranium exploration project in Nunavut and has been in the permitting and regulatory processes for several years. AREVA has developed a mine plan that consists of four deposits to be exploited using open pit mining and a fifth deposit that would be accessed as an underground mining operation. One open pit and the underground workings would be built at the Sissons site, approximately 20 km southwest of Kiggavik. The \$2.1 billion project proposal indicates an initial three to four year period to construct the mine, a 14-year operating mine life, and a ten-year closure, decommissioning, and monitoring period. The mine construction phase would require about 750 workers and the mine, once in operation, would provide up to 600 jobs.

The environmental assessment process for the Kiggavik project was concluded in the spring of 2015. In its report on the project's Final EIS, NIRB cited a lack of detail regarding baseline data and uncertainty relating to the project start date, and concluded that it could not make a determination relating to the significance of ecosystemic and socio-economic impacts. This uncertainty led the NIRB to recommend to the then-Minister of Aboriginal Affairs and Northern Development that the project not be issued a project certificate. NIRB did not preclude a positive recommendation at a future point when AREVA could provide more certainty around the project start date. As of publication, there has been no decision on the project certificate.




















<div> <div>553<sup>1</sup></div> <div>554<sup>2</sup></div> <div>555<sup>3</sup></div> <div>556<sup>4</sup></div> <div>557<sup>5</sup></div> </div>	<p>NORTH THELON (KIGGAVIK NORTH<sup>1</sup>, KIGGAVIK SOUTH<sup>2</sup>, JUDGE SISSONS<sup>3</sup>, UKALIQ (BL-21)<sup>4</sup>, UKALIQ (BL-32)<sup>5</sup>)</p>
<b>Operator/Owner</b>	Forum Uranium Corp. <sup>1,2,3,4,5</sup>
<b>Commodity</b>	Uranium
<b>NTS</b>	66A05 – 66A07, 66A10 – 66A12 <sup>1</sup> ; 66A04, 66A05, 66B01, 66B08 <sup>2</sup> ; 66A05, 66A06 <sup>3</sup> ; 66A06, 66A07 <sup>4</sup> ; 66B02, 66B07, 66B08 <sup>5</sup>
<b>Land Tenure</b>	Crown, Surface IOL <sup>1-3</sup> ; Subsurface IOL <sup>4,5</sup>
<b>Location</b>	65 km north of Baker Lake <sup>1</sup> ; 95 km northwest of Baker Lake <sup>2</sup> ; 70 km northwest of Baker Lake <sup>3</sup> ; 55 km northwest of Baker Lake <sup>4</sup> ; 120 km west of Baker Lake <sup>5</sup>



Banded iron formation interbedded with tuffaceous sediments, Angilik project – *Courtesy of INAC*

The North Thelon project near Baker Lake is located on 198,000 ha in the Thelon Basin on both IOL and Crown lands. The project is 100 per cent owned and operated by Forum Uranium Corp. The Judge, Long Lake, and Pyro South showings on the property, as well as IOL parcel BL-32, were the focus of limited exploration work carried out in 2014. A new showing was identified at Long Lake with assay values from boulder and outcrop samples of 34 ppm  $U_3O_8$  to 128 ppm  $U_3O_8$ . Arkosic boulders from the BL-32 area returned assays of up to 98 ppm  $U_3O_8$ . A prospecting, mapping, and sampling program was conducted in 2015 along the Andrew Lake fault. In addition, two areas with historic mineralization were prospected, resulting in the discovery of a new showing in the Long Lake area.

## INACTIVE PROJECTS

NUMBER	PROJECT	REGION	OPERATOR
<b>BASE METALS</b>			
 145	ATLAS	Kivalliq	Anconia Resources Corp.
 146	Borden	Qikiqtani	MMG Limited
 147	Hackett River	Kitikmeot	Glencore plc
 148	Hood	Kitikmeot	MMG Limited
 149	Wishbone	Kitikmeot	Glencore plc
<b>COAL</b>			
 199	Fosheim Peninsula	Qikiqtani	Canada Coal Inc.
<b>DIAMONDS</b>			
 300	Jericho Mine	Kitikmeot	Shear Diamonds Ltd.
<b>GOLD</b>			
 345	Itchen Lake	Kitikmeot	Transition Metals Corp.
 346	Kiyuk	Kivalliq	Northern Empire Resources Corp.
 347	Lupin Mine	Kitikmeot	WPC Resources Inc.
 348	Ulu	Kitikmeot	WPC Resources Inc.
 349	Wishbone Gold	Kitikmeot	Sabina Gold & Silver Corp.
<b>IRON</b>			
 397	Haig Inlet	Qikiqtani	Canadian Orebodies Inc.
 398	Roche Bay	Qikiqtani	Advanced Explorations Inc.
 399	Tuktu	Qikiqtani	Advanced Explorations Inc.
<b>NICKEL-COPPER-PLATINUM GROUP ELEMENTS</b>			
 499	West Melville	Qikiqtani	Vale Canada Limited
<b>URANIUM</b>			
 597	Aberdeen	Kivalliq	Cameco Corporation
 598	Baker Basin	Kivalliq	Kivalliq Energy Corporation
 599	Turqavik	Kivalliq	Cameco Corporation



Anconia Resources Corp.'s **ATLAS** base metal property is located 165 km northwest of Whale Cove. This property hosts two stratiform volcanogenic massive sulphide exploration targets, ATLAS-1 and ZAC. Anomalously high gold and silver values found at ATLAS-1, suggest a secondary stage of mineralization may have occurred there. The last reported geological work on the property was diamond drilling in 2013.

The **Borden** base metal property is located 130 km west of Pond Inlet in the southeast part of the Borden Basin and covers five prospecting permits acquired by MMG Limited in 2014. The Borden Basin hosts the past-producing Nanisivik lead-zinc mine. No work has been reported by MMG to date.

Glencore plc's world class silver-zinc VMS **Hackett River** deposit is located in the northern tip of the Hackett River greenstone belt. Xstrata acquired the property, along with the adjacent Wishbone project, in 2011 from Sabina Gold & Silver Corp. Ownership of both transferred to Glencore following the Glencore-Xstrata merger. Hackett River includes three main deposits and a satellite deposit. An updated resource estimate was released in 2013 that includes 25 million tonnes of indicated resources at average grades of 4.2% Zn, 0.6% Pb, 0.5% Cu, 130 g/t Ag, and 0.3 g/t Au and 57 million tonnes of inferred resources grading 3.0% Zn, 0.5% Pb, 0.4% Cu, 100 g/t Ag, and 0.2 g/t Au. Glencore plc initially indicated that it would submit a Draft Environmental Impact Statement to NIRB in December 2014 but later announced that plans for the property are on hold indefinitely due to uncertainty and volatility in markets and the global economy. The Wishbone base metal property occupies approximately 2,000 km<sup>2</sup> of the western portion of the Hackett River greenstone belt. The last reported work on the property was airborne geophysics in 2013.

MMG Limited's **Hood** base metal property is located within the Hood River supracrustal belt northeast of Izok Lake. The property hosts three defined copper-zinc deposits and numerous showings. All three deposits have historic non-NI 43-101 compliant resources. The last reported work was diamond drilling and downhole electromagnetic surveys in 2012.

The **Fosheim Peninsula** coal property, consisting of 38 coal licences owned by Canada Coal, is located 390 km northeast of Grise Fiord on Ellesmere Island. Canada Coal has identified numerous targets at surface over a five-kilometre strike-length and comprising multiple, aggregating seams over 15 metres wide of low-sulphur and low-ash, thermal coal. The last reported geological work was in 2012 and consisted of geological mapping and sampling.

In September 2012, Shear Diamonds Ltd. ceased operations at the **Jericho** diamond mine site. In January 2014, after Shear was unable to restart the past-producing diamond mine and meet terms and conditions of its authorizations, INAC declared the site abandoned. INAC has worked to ensure that the environmental integrity of the site is maintained and to move towards long-term solutions, including being open to private sector solutions or remediation.

Transition Metals Corp. and Nunavut Resources Corp.'s **Itchen Lake** joint venture property is located just east of MMG's Izok Lake project, straddling the Nunavut-Northwest Territories border. This gold property has had extensive historic work, including 80 drill holes on more than 70 gold occurrences. The joint venture has compiled the historic data and conducted exploration work in 2012 and 2013. The work verified historic assays and identified seventeen drill targets. The targets were to be drilled in 2015, but the program was not carried out.

The **Kiyuk** gold project is located 350 km west of Arviat and owned by Northern Empire Resources Corp. (formerly Prosperity Goldfields Corp.). Gold mineralization occurs in a sequence of conglomerates and breccias along an unconformity between two extensive sedimentary units. The mineralizing fluids are intrusion related and mineralization is associated with sulphide minerals but also occurs as native gold grains. The last work reported was in 2013 when diamond drilling and re-logging of core occurred.

WPC Resources Inc. entered into a non-binding letter of intent in January 2015 with Mandalay Resources Corporation to acquire Lupin Mines Incorporated, which owns the past-producing **Lupin** gold mine, and the Ulu gold property.

The past-producing Lupin gold mine, located on the western side of Contwoyto Lake, was in production from 1982 to December 2004 and produced around 3.4 million ounces of gold. Elgin Mining Inc. acquired the past-producing mine and the Ulu property in 2011 and was working towards reopening the mine. Instead, in 2013 the company placed the project in care and maintenance. WPC had indicated that the company planned to do work in 2015 but no work took place.

The **Ulu** property is located 155 km north of Lupin, and contains the Flood deposit where approximately 135,000 m of drilling and 1.7 km of underground development were completed by previous operators. Elgin Mining produced a NI 43-101 compliant resource in 2011 and carried out

a surface exploration and drilling program in 2012 before placing this project into care and maintenance in 2013. After reviewing existing data, WPC released an updated NI 43-101 compliant resource estimating 2.50 million tonnes with 605,000 ounces of gold in the measured and indicated categories and 1.26 million tonnes with 226,000 ounces of gold in the inferred category in April 2015. This new estimate represents a significant increase over the 2011 resource estimate.

Sabina Gold & Silver Corp.'s **Wishbone Gold** property covers the southeastern portion of the Hackett River greenstone belt and is located approximately 60 km west of Sabina's Back River property. Sabina Gold & Silver Corp. retained this portion of the original Wishbone property when it sold off its VMS assets (Hackett River and the VMS portion of Wishbone) to Xstrata in 2011. Wishbone Gold is prospective for banded iron formation-hosted gold and hosts multiple prospects. Work ranging from diamond drilling to geophysical surveys, geological mapping, and prospecting has been conducted. The last reported work was a surface reconnaissance program conducted in 2013.

Canadian Orebodies Inc.'s **Haig Inlet** iron ore property encompasses land within the municipal boundary and to the south and southwest of the hamlet of Sanikiluaq. The deposit is a Paleoproterozoic Lake Superior type iron formation, located at the western edge of the Superior Province. The last reported work was in 2012 and consisted of a 38 hole, 6,470 m drill program on four targets (Haig West, Haig South, the Haig North Extension, and Kihl Bay). A NI 43-101 compliant resource estimate on the project (Haig North and South) was released in early 2012.

The **Roche Bay** and **Tuktu** iron projects are owned by Advanced Explorations Inc. (AEI) and are located on the Melville Peninsula, about 70 km southwest and west of Hall Beach, respectively. Roche Bay is described as an Algoma-type banded iron formation and consists of five mineralized zones A through E. The last reported geological work on Roche Bay was done in 2012 when AEI released a feasibility study conducted on the C Zone. Tuktu has two main prospects: Tuktu 1, a banded iron formation with a NI 43-101 compliant inferred resource estimate of 465 million tonnes of 31.1% total iron and Tuktu 2, with high-grade zones of iron mineralization occurring within an alteration zone of the banded iron formation host. The last reported geological work on Tuktu took place in 2012. On July 10, 2015, Advanced Explorations announced that it has filed a 'Notice of Intention to Make a Proposal' under the

provisions of Part III of the *Bankruptcy and Insolvency Act* (Canada). No further information has been released.

Vale Canada Limited's **West Melville** nickel-copper-platinum group elements property is located on the western side of Melville Peninsula. The property was acquired based on a nickel-sulphide discovery reported by the Geological Survey of Canada as part of the Geo-Mapping for Energy and Minerals program. Mineralization is hosted within ultramafic cumulate textured peridotite that occurs as narrow, northeast-trending units within the Archean Prince Albert greenstone belt. The last reported geological work was in 2013 and consisted of geophysics and diamond drilling.

Cameco Corporation's **Aberdeen** and **Turqavik** uranium properties are located northwest of Baker Lake in the Thelon Basin. The properties host several significant uranium targets: Tatiggaq, Qavvik, Ayra, Sandbould, Judge Sissons, and Mammoth. Mineralization occurs in veins and fracture-hosted zones as disseminated to massive pitchblende along distinct oxidation-reduction boundaries over wide intervals at depths between 80 and 180 m. The last reported work was in 2013 and consisted of land surveying, and quaternary, structural, and geochemical studies.

Kivalliq Energy Corporation's **Baker Basin** uranium property is located 65 km southeast of Baker Lake. In October 2013, Kivalliq Energy acquired the mineral rights, excluding diamonds, for the property from Pacific Ridge Exploration Ltd. The property hosts several uranium occurrences. Mineralization is associated with brittle fracturing in basement gneisses and with alteration zones in Kazan sandstone. Kivalliq Energy indicated in 2013 that plans and budgets would be disclosed after a review of existing data has been completed. No new information has been released.



Fold hinge in core at Izok camp – Courtesy of INAC



## GUIDE TO ACRONYMS

<b>CNGO</b>	Canada-Nunavut Geoscience Office
<b>EDT</b>	Department of Economic Development and Transportation, Government of Nunavut
<b>EIS</b>	Environmental Impact Statement
<b>EM</b>	electromagnetic
<b>GN</b>	Government of Nunavut
<b>INAC</b>	Indigenous and Northern Affairs Canada
<b>IOL</b>	Inuit Owned Lands
<b>IQ</b>	Inuit Qaujimajatuqangit (Inuit traditional knowledge)

<b>KIM</b>	kimberlite indicator minerals
<b>MPR</b>	Minerals and Petroleum Resources Division, Department of Economic Development and Transportation, Government of Nunavut
<b>NI 43-101</b>	National Instrument 43-101
<b>NIRB</b>	Nunavut Impact Review Board
<b>NTI</b>	Nunavut Tunngavik Incorporated
<b>PGE</b>	platinum-group-elements
<b>SEDAR</b>	system for electronic document analysis and retrieval
<b>VMS</b>	volcanogenic massive sulphide

## GLOSSARY

**base metal** – a general term applied to metals that corrode or oxidize easily, such as iron, lead, copper, or zinc.

**breccia** – a type of rock made up of angular rock or mineral fragments that have been broken apart by forces within the Earth and then cemented together. Breccia can be a good host for mineral deposits because the spaces created after the rock is fractured provide space 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 whose traits need a more detailed study to be classified as a resource. Also known as a mineral deposit.

**drilling** – the operation of extracting a vertical sample of bedrock or other surface material such as glacial till or clay in order to examine the occurrence of rock types and understand the geological structure

**Environmental Impact Statement** – a document outlining the effects of a development project on the environment prepared by the proponent of that project and presented to regulators, decision makers, and the public.

**fee simple** – a form 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.

**geochemical survey** – the chemical analysis in a laboratory of soil, rock, or water from a defined area to identify abnormal concentrations of chemical elements that indicate the presence of metals, petroleum, or gemstones. Also known as geochemical exploration.

**geophysical survey** – the collection of information associated with bedrock using sensors that record electric, magnetic, seismic, or thermal data. The survey can be conducted from the air or the ground and is used by mineral exploration companies to detect physical properties of rocks such as magnetism, gravity or conductivity.

**grab sample** – a rock sample, collected by hand, in order to analyse whether valuable minerals or metals are present.

**greenstone belt** – a linear zone or “belt” of metamorphosed volcanic rocks known to host deposits of gold and other valuable metals. The 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 extrusive rock. Kimberlite indicator minerals (KIM) are minerals found in glacial or other sediments that suggest the nearby presence of a kimberlite.

**mafic rock** – any igneous rock composed primarily of dark-coloured minerals, usually with a high iron and magnesium content; this term is also applied to those minerals as a group. Ultramafic rocks are rocks made up of greater than 90% mafic minerals, and some can be used as carving stone.

**reserve** – a published estimate of the amount of naturally occurring metal, gemstone, or other mineral substance in a mineral 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 mineral 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. This group includes a large number of metal-bearing minerals that are sources for metals such as iron, zinc, and copper and 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).



Raised beaches on Coronation Gulf – *Courtesy of Government of Nunavut*



**MAP NUMBER (PAGE)** Bold project number and name signifies major or advancing project.

**Advanced Explorations Inc.**

398 Roche Bay (50, 52)  
399 Tuktu (50, 52)

**Agnico Eagle Mines Limited**

300 Amaruq (14, 23, 34)  
310 Greyhound (39)  
**316 Meadowbank Mine (14, 23, 42)**  
**317 Meliadine (14, 23, 44)**

**Anconia Resources Corp.**

145 ATLAS (50, 51)

**Arctic Copper Corp.**

100 Arctic Copper (26)

**Arctic Star Exploration Corp.**

210 Stein (26)

**AREVA Resources Canada Inc.**

**551 Kiggavik (23, 47)**  
552 Kiggavik – St. Tropez (47)

**Aston Bay Holdings Ltd.**

104 Seal (29)  
105 Storm (25, 29)

**Aura Silver Resources Inc.**

521 Greyhound (39)

**Auryn Resources Inc.**

304-308 Committee Bay Gold  
(Anuri-Raven, Four Hills-Cop,  
Inuk, Three Bluffs, West Plains)  
(21, 37)

**Baffinland Iron Mines Corporation**

(ArcelorMittal S.A., Iron Ore  
Holdings LP)

**350 Mary River (14, 25, 45)**

**Cameco Corporation**

597 Aberdeen (50, 52)  
599 Turqavik (50, 52)

**Canada Coal Inc.**

199 Fosheim Peninsula (50, 51)

**Canadian Orebodies Inc.**

397 Haig Inlet (14, 50, 52)

**Churchill Diamond Corporation**

207 Pelly Bay (26)

**Commander Resources Ltd.**

105 Storm (29)

**Crystal Exploration**

201 Hood River (26)  
205 Muskox (26)

**DAEWOO International Corporation**

**551 Kiggavik (47)**

**Dunnedin Ventures Inc.**

202 Kahuna (31)

**Forum Uranium Corp.**

553-557 North Thelon (Kiggavik South,  
Judge Sissons, Kiggavik North,  
Ukaliq (BL-21), Ukaliq (BL-32))  
(14, 49)

**Glencore plc**

147 Hackett River (50, 51)  
149 Wishbone (50, 51)

**JCU Exploration (Canada) Co. Ltd.**

**551 Kiggavik (47)**

**Kaizen Discovery Inc.**

101 Coppermine River (21, 27)

**Kivalliq Energy Corporation**

550 Angilak (14, 46)  
598 Baker Basin (46)

**MMG Limited**

146 Borden (50, 51)  
148 Hood (50, 51)  
**102, 103 Izok Corridor**  
**(High Lake, Izok Lake)**  
**(14, 28)**

**North Arrow Minerals Inc.**

203 Luxx (31)  
204 Mel (32)  
208 Qilalugaq (33)

**Northern Empire Resources Corp.**

346 Kiyuk (50, 51)

**Northquest Ltd.**

318 Pistol Bay (44)

**Nunavut Resources Corp.**

345 Itchen Lake (50, 51)

**Nunavut Tunngavik Inc.**

550 Angilak (46)

**Peregrine Diamonds Ltd.**

200 Chidliak (25, 30)  
206 Nanuq (33)  
209 Qilaq (34)

**Sabina Gold & Silver Corp.**

**301, 302 Back River (George Lake,**  
**Goose Lake) (21, 35)**  
349 Wishbone Gold (50, 52)

**Shear Diamonds Ltd.**

249 Jericho Mine (50, 51)

**Stornoway Diamond Corporation**

208 Qilalugaq (33)

**TMAC Resources Inc.**

309 Elu Belt (21, 38)  
312-315 Hope Bay (Boston, Chicago,  
Doris, Madrid) (14, 21, 41)

**Transition Metals Corp.**

303 CO-20 (37)  
345 Itchen Lake (50, 51)

**Vale Canada Limited**

499 West Melville (50, 52)

**WPC Resources Inc.**

311 Hood River (14, 40)  
347 Lupin Mine (21, 50, 51)  
348 Ulu (50, 51)

# DISCOVER

THE GEOSCIENCE OF NUNAVUT THROUGH THREE INTERACTIVE TOOLS:

## EXPLORATION OVERVIEW

THE ONLINE VERSION OF THIS ANNUAL PUBLICATION OF EXPLORATION  
ACTIVITIES THROUGHOUT NUNAVUT

## REFERENCES

A DOWNLOADABLE LIBRARY OF SCIENTIFIC PUBLICATIONS, MAPS AND DATA

## SHOWINGS

FOR BROWSING THE MINERAL OCCURRENCES DATABASE  
WITH LINKS TO SUPPORTING REFERENCES

**[www.NunavutGeoscience.ca](http://www.NunavutGeoscience.ca)**

THE MOST AUTHORITATIVE STOP FOR NUNAVUT GEOSCIENCE INFORMATION.

