

# nunavut

Mining Mineral Exploration and Geoscience Overview 2006



Indian and Northern  
Affairs Canada

Affaires indiennes  
et du Nord Canada





Cover photo:  
Jericho Diamond Mine-site –  
maintenance shop, diamond plant,  
accommodations and offices  
and fuel farm - 350 km southwest  
of Cambridge Bay, Nunavut.  
  
Photo Credit:  
Tahera Diamond Corporation

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## About the Nunavut: Mining, Mineral Exploration and Geoscience Overview 2006

This exploration overview is a combined effort of four partners: Minerals & Petroleum Resources Division, Government of Nunavut; Mineral Resources Division, Indian and Northern Affairs Canada; Department of Lands and Resources, Nunavut Tunngavik Incorporated (NTI) and the Canada-Nunavut Geoscience Office. The intent of this publication is to capture information on exploration and mining activities in 2006, and to make this information available to the public. All exploration information was gathered prior to mid-November 2006.

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 for inclusion in the next Overview. Feedback and comments are appreciated.

### NOTE TO READERS

This document has been prepared on the basis of 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 in each resource and reserve estimate. 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.

## Land Tenure in Nunavut

Nunavut Territory was created in April 1999 as a result of the Nunavut Land Claims Agreement (NLCA), the largest Aboriginal land settlement in Canadian history. Spanning two million kilometres (km), the Territory has 26 communities and an approximate population of 30,000 people. Inuit represent 85 per cent of Nunavut’s population, creating the foundation of the Territory’s culture and values. This culture is inherently connected to the land, shaping government, business and day-to-day life.

In addition to the creation of the new territory, the NLCA gave Inuit fee simple title to 356,000 km<sup>2</sup> of land. There are 944 parcels (16 per cent of Nunavut) of Inuit Owned Lands (IOL) where Inuit hold surface title only (surface IOL). The Government of Canada or “Crown” retains the mineral rights to these lands. Inuit also hold fee simple title including mineral rights to the remaining 150 parcels of IOL (subsurface IOL), which total 38,000 km<sup>2</sup> and represent approximately two per cent of the territory. Surface title to all IOL is held in each region by one of the three Regional Inuit Associations (RIAs) while Inuit subsurface title with respect to subsurface IOL is held and administered by Nunavut Tunngavik Incorporated (NTI). NTI issues rights to explore

and mine through its own mineral tenure regime. Mineral rights (mineral claims or leases) that existed at the time of the signing of the NLCA – known as grandfathered rights – continue to be administered by Indian and Northern Affairs Canada (INAC) until they terminate or the holder transfers its interests to the NTI regime. For both surface and subsurface IOL, access to the land, through a Land Use Licence or Commercial Lease, must be obtained from the appropriate RIA.

The Crown owns mineral rights to 98 per cent of Nunavut. INAC administers these rights through the Canada Mining Regulations (CMR). This includes surface IOL, for which access to the land must be obtained from the RIAs as explained above.

The NLCA is a final settlement whereby all land claims in Nunavut have been settled with the Inuit of Nunavut, thus providing an unmatched level of land tenure certainty. However, land claims overlapping Hudson Bay and the southernmost Kivalliq are being negotiated with residents of northern Quebec and northern Manitoba respectively.

For more information on the location of IOL and Crown Land in the Territory take a look at the 2006 Nunavut Exploration and Activity Map in the centre of this publication. ■

### GUIDE TO ACRONYMS

CMR – Canada Mining Regulations  
CNGO – Canada-Nunavut Geoscience Office  
EA – Inuit Owned Lands Mineral Exploration Agreement  
ED&T – Department of Economic Development and Transportation, Government of Nunavut  
EIS – Environmental Impact Statement  
GIS – Geographic Information System  
GN – Government of Nunavut  
GSC – Geological Survey of Canada  
IIBA – Inuit Impact Benefit Agreement  
INAC – Indian and Northern Affairs Canada  
IOL – Inuit Owned Land  
KIA – Kitikmeot Inuit Association  
KIM – Kimberlite Indicator Mineral(s)

KivIA – Kivalliq Inuit Association  
NIRB – Nunavut Impact Review Board  
NLCA – Nunavut Land Claims Agreement  
NT – Northwest Territories  
NTI – Nunavut Tunngavik Incorporated  
NTS – National Topographic System  
QIA – Qikiqtani Inuit Association  
PGE – Platinum Group Elements  
RIA – Regional Inuit Association



# Indian and Northern Affairs Canada

Indian and Northern Affairs Canada (INAC) administers mineral tenure on Crown land in Nunavut. This is done through the Nunavut Regional Office (NRO) in Iqaluit, Nunavut, by the Mineral Resources Division and the Mining Recorder's Office (MRO) of the Land Administration Division.

As an advocate of sustainable resource development in Nunavut, INAC's Mineral Resources Division:

- Participates in and provides technical advice during environmental reviews;
- Reviews assessment reports filed by mining and exploration companies ensuring compliance with the Canada Mining Regulations (CMR);
- Co-manages the Canada-Nunavut Geoscience Office (CNGO) together with Natural Resources Canada and the Government of Nunavut;
- Maintains a digital archive of assessment data filed in Nunavut dating back to the 1940's;
- Promotes mineral exploration within the Territory through community outreach, publications, professional networking and events such as Nunavut Mining Week;
- Completes targeted geoscience with CNGO and/or Industry.

The MRO administers all other aspects of mineral tenure on Crown land in Nunavut. Administration of these rights is regulated by the CMR under the Territorial Lands Act. The MRO also administers coal tenure under the Territorial Coal Regulations and is your main point of contact to acquire Crown mineral or coal tenure. As well, the MRO sells claim maps, claim tags and assists individuals and companies in interpreting the CMR with information on how to keep their properties in good standing.

Interest in Nunavut's mineral potential remained strong in 2006 with industry investing close to \$200 million in exploration. The sustained high level for commodity prices is driving exploration for commodities such as diamonds, gold, base metals, nickel, Platinum Group Elements (PGE), iron, and uranium. Overall exploration expenditures are slightly ahead of the 2005 industry investment. In February 2006, 161 prospecting permits were issued by the MRO, encompassing over 6.4 million hectares (ha) of Crown land. At the time of writing, over 32.8 million (32,833,687) hectares of Crown land in Nunavut was covered by prospecting permits, mineral leases and mineral claims. ■

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# Government of Nunavut

The Government of Nunavut (GN), through its Department of Economic Development and Transportation (ED&T), envisages a vibrant and sustainable minerals industry based on the “triple bottom line” concept, where success in the industry is measured by:

- the adherence to best environmental practices;
- the sustained flow of benefits to local residents; and
- the return of healthy profits to shareholders.

The past several field seasons have seen unprecedented levels of exploration undertaken in Nunavut. A number of quality discoveries have been made recently and there will be substantial opportunities to be realized in the Territory as exploration continues and as exploration projects potentially evolve into mines. ED&T is working to ensure all Nunavummiut are in a position to benefit from these coming opportunities, and that they have the option of becoming full participants in developments in the Territory.

At the same time, it is recognized that exploration and mining companies have the option of investing in many jurisdictions throughout the world. Therefore, ED&T is committed to working with its partners in NTI and the Government of Canada to make the legislation, policies and regulatory environment of Nunavut efficient, internationally competitive and attractive to investors.

Current Government of Nunavut initiatives include:

## Nunavut Mineral Exploration and Mining Strategy

To maintain Nunavut’s position as a jurisdiction of choice for mineral investment, the GN has developed the Nunavut Mineral Exploration and Mining Strategy, which provides a framework of policies and actions to be implemented to help retain the territory’s strong position in international investment. Most notably, the Strategy addresses Nunavut’s regulatory and taxation regimes, workforce training, infrastructure development and environmental baseline availability.

Over the past two years, during the preparation of the Strategy, the GN consulted with stakeholders to understand their views on a wide range of mining and exploration issues. Nunavummiut from across the territory, Inuit Organizations, Institutions of Public Government, the Government of Canada, Community Governments, other GN departments, private Nunavut-based businesses, and Nunavut Arctic College were participants in these consultations and provided strong and valuable input into the Strategy. In addition, meetings were held with representatives of the mining and exploration industries and environmental non-governmental organizations.

The views expressed in these consultations have been compiled and form the basis of the Nunavut



Mineral Exploration and Mining Strategy to be released in January 2007. This document clarifies the GN’s position on mining and exploration, and will guide the government as it deals with the opportunities and challenges that arise from development of the territory’s mineral wealth.

## Nunavut Prospectors’ Program (NPP)

ED&T provides technical and financial assistance to Nunavummiut with demonstrated prospecting skills to carry out their own prospecting projects. While this program has been in existence since 1999, this past year saw the amount of financial assistance available for each prospector increased from \$5000 to \$8000 per year.

## Introductory Prospecting Course

Every year, ED&T geologists present a six-day Introductory Prospecting Course to interested residents in communities throughout the territory. Since 2000, the course has been offered in each community, with nearly 500 graduates to date. Graduates of the course often apply for NPP grants, and are sought after as field assistants on mineral exploration programs.

## Community Minerals

## Education and Training

ED&T works with many other stakeholders, including the Department of Education, the Government of Canada, and the mining and exploration industries in a number of programs designed to inform Nunavummiut of all ages of the opportunities in the minerals industries. ED&T programs and information include:

- Nunavut High School Math and Science Awards Program;
- Mineral Exploration Field Assistant’s Course;
- Nunavut Mine Training Focus Group;
- Earth Sciences and Mining Teacher Workshops;
- Careers in Mining school and Community Presentations;
- Mineral exploration company contact list for communities; and
- Nunavut Science Outreach Network.

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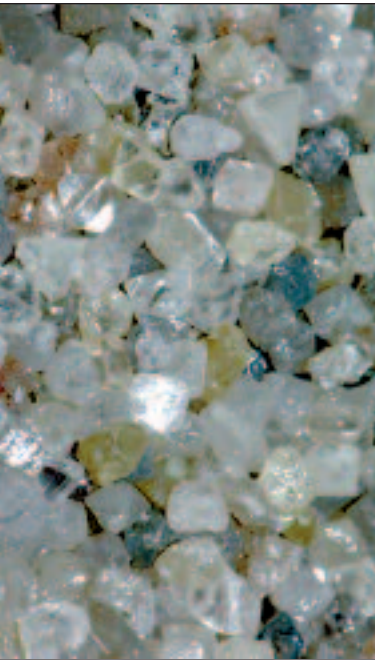
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# Nunavut Tunngavik Incorporated

Nunavut Tunngavik Incorporated (NTI) is the Inuit corporation responsible for overseeing implementation of the Nunavut Land Claims Agreement (NLCA). 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 Lands and Resources Department of NTI is responsible for the implementation of Inuit responsibilities to management of Inuit Owned Lands (IOL), the environment, minerals, oil and gas, and marine areas.

There are two forms of mineral tenure that grant exclusive rights on Subsurface IOL administered by NTI. These are the Inuit Owned Lands Mineral Exploration Agreement (usually referred to as the “Exploration Agreement”, or “EA”) and the Inuit Owned Lands Mineral Production Lease (referred to as the “Production Lease”). The Exploration Agreement grants a company or individual the exclusive right to explore and prospect for minerals (excluding oil and gas, and specified substances such as construction materials and carving stone) on a portion of Subsurface IOL. This area, referred to as the Exploration Area, is similar in many ways to a mineral claim under the CMR. The Production Lease grants the holder of an Exploration Agreement the right to produce minerals from a portion of the Exploration Area known as the Production Lease Area.

Since 1999, NTI has had in place a system of application that does not require staking when applying for an Exploration Agreement. Rather, the application requires only a description of the Exploration Area based on latitude and longitude. The applicant must submit to NTI a completed application form, *Application for an Inuit Owned Lands Mineral Exploration Agreement* (available upon request from NTI or from our Lands Department website). The completed application includes a description of the proposed Exploration Area defined by latitude and longitude

of the boundaries as well as a map showing the proposed Exploration Area. Applications are received during designated months and are processed at the start of the subsequent month, at which time NTI will decide whether or not to accept an application and issue an Exploration Agreement. Applications are kept confidential until the close of the application period in which they are received, thus ensuring that all applicants are treated fairly. Further details on the application process are included in the application form.

It should be noted that although the process and documents described here normally apply, NTI, as a private organization, has complete discretion as to whether it will issue an Exploration Agreement (or other agreement), what the process will be for obtaining an agreement, and what the terms of the agreement will be. The terms may include, for example, NTI holding a direct interest in a project.

Under the standard terms, successful applicants, upon executing the new Exploration Agreement and submitting the first year’s annual fees, will be granted the exclusive right to explore for minerals on the Exploration Area. In order to gain access to the land, however, the applicant must obtain a surface right issued by the Regional Inuit Association (RIA).

NTI currently has 54 active Exploration Agreements with prospectors and exploration and mining companies. These cover more than 12 per cent of the total subsurface IOL. (In addition, grandfathered claims and leases comprise approximately two per cent of all subsurface IOL.) Holders of Exploration Agreements are required to submit annual exploration work reports to NTI that remain confidential for a period of up to three years.

Many of the advanced exploration projects in Nunavut fall on subsurface IOL. The following table summarizes the current active Exploration Agreements and their locations. ■

PROJECT/DEPOSIT	HOLDER(S)	IOL PARCEL(S)	EXPLORATION AGREEMENTS
<b>QIKIQTANI REGION</b>			
Piling Project <sup>1</sup> Melville	BHP-Billiton, Commander Resources Comaplex	BI-35 HB-15, HB-16	Qimmiq 1,2,4,5,6; Talik (6 EAs) Melville 1-2 (2 EAs)
<b>KIVALLIQ REGION</b>			
Meliadine <sup>2</sup>	Resource Capital Fund	RI-01, RI-12	Ant 1-4, Fay 1-4, W1, Tan 1-4, Felsic (14 EAs) Meadowbank 1-3 (3 EAs) Spi Lake Square Lake Sedna 1-5 (5 EAs) Cache SDS 1-3 (3 EAs)
Meadowbank <sup>3</sup> Spi Lake Square Lake Sedna Cache SDS	Cumberland Comaplex Comaplex 4579 Nunavut Ltd Full Metal Minerals Adam Vary	BL-14 AR-16 BL-21 RI-01 WC-08 RE-27	
<b>KITIKMEOT REGION</b>			
Hope Bay <sup>4</sup>	Miramar Mining	BB-57, BB-60	Akungani 1-3, Aimaokatuk, Tok 1-3 (7 EAs) Doris Production Lease (application) Contwoyto agreements (4 EAs) Hood River Hilk Muskox agreements (3 EAs) Arcadia Bay Rockinghorse Strongbow
Contwoyto Hood River High Lake <sup>5</sup> Muskox <sup>6</sup> Arcadia Bay Rockinghorse <sup>7</sup> Strongbow	Tahera Tahera Wolfden Gordon Addie Full Metal Minerals Kennecott Strongbow Resources	CO-08 CO-20 CO-29 CO-62 CO-31 CO-44 1800 km² in the Kitikmeot	

- Note: All projects referenced below are discussed in this report.**
1. Overall project involves Crown land and subsurface IOL.
  2. The project involves land held under NTI Exploration Agreements as well as grandfathered claims and leases.
  3. The project involves land held under NTI Exploration Agreements and grandfathered leases.
  4. The Boston deposit is located on surface IOL, while the Doris, Madrid, South Patch, Naartok and Suluk are on subsurface IOL, distributed among grandfathered leases and NTI Exploration Agreements. Potential extension of the Boston deposit down-dip or along strike to the north will also be on subsurface IOL.
  5. The project involves Crown land and land held under NTI Exploration Agreements and grandfathered leases.
  6. The project involves Crown land, surface IOL, and subsurface IOL under NTI Exploration Agreements.
  7. The project involves Crown land, surface IOL, and subsurface IOL under NTI Exploration Agreements.

## MINING PROJECTS

The Doris North and Meadowbank projects have both recently received approval to proceed to construction and operation. Both are currently undergoing permitting.

Wolfden’s High Lake project, consisting of the High Lake Deposits (the West Zone which is on IOL) and Ulu (grandfathered lease) has begun the permitting process.

Baffinland’s Mary River iron project, located on a grandfathered lease, is proceeding with the permitting required to conduct a bulk sample.

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# Canada - Nunavut Geoscience Office



The Canada – Nunavut Geoscience Office (CNGO) is a partnership between the Geological Survey of Canada (GSC), Indian and Northern Affairs Canada (INAC), and the Government of Nunavut’s Department of Economic Development and Transportation (ED&T). The mandate of the CNGO is to provide accessible geoscience information and expertise in Nunavut in support of responsible development of mineral and energy resources, geoscience education, training opportunities, and to assist with Geographic Information System (GIS) requirements of Nunavut-based partners. In 2006, the CNGO participated in multi-component field-based projects, was a principal partner in development of a web-based system of data delivery ([nunavutgeoscience.ca](http://nunavutgeoscience.ca)), and provided GIS, cartographic, Remote Predictive Mapping (RPM) support, and outreach activities.

### CNGO Projects

CNGO projects are designed to ultimately improve the quality of life for Nunavummiut by allowing them to gain economic and social benefits from responsible development of mineral and energy resources in Nunavut. The purpose of each project is to reduce risk of investment and improve chances of successful discoveries by mineral and energy exploration companies, and increase and/or sustain current levels of exploration in the regions studied.

Projects are designed to make a significant contribution to the geoscience knowledge base of Nunavut, and address critical knowledge gaps. The projects are multi-faceted and may consist of components of ground-based field activities, including bedrock and surficial geology mapping, geophysical, geochemical and geochronological surveys, and comprehensive data compilation activities. In addition, field-based projects include components of community consultations and public outreach activities. The outreach activities are intended to demonstrate the importance of mineral

and energy resources, to provide awareness of employment opportunities in geosciences, and to promote Earth science education for students.

### The Southwest Baffin Integrated Geoscience Baffin Project

The Southwest Baffin Integrated Geoscience Project (SWBIG) included regional-scale bedrock and surficial mapping in the Foxe Peninsula area on southwest Baffin Island (NTS map sheets 36 A to C and 36 F to H) during the 2006 field season. These activities, co-managed by the CNGO and the GSC, are intended to enhance mineral exploration and development opportunities in the region by improving the level of geoscience information. The area is underlain by supracrustal and intrusive rocks having significant exploration potential for base-metal mineralization. Targeted SWBIG field activities follow acquisition of a new, detailed aeromagnetic survey of the eastern part of the Foxe Peninsula in 2006.

### SWBIG:Surficial Mapping

Understanding the surficial geology and glacial history are critical aids to mineral exploration in Nunavut, especially in poorly exposed regions. As part of the SWBIG project, the CNGO and the GSC, in collaboration with researchers from Simon Fraser and Dalhousie universities, initiated a surficial mapping project in 2006.

Based on observations of ice flow indicators, marine-limit features, the distribution and identification of erratics, a complex, preliminary glacial chronology of the Foxe Peninsula can be constructed. At the Last Glacial Maximum, ice flowed towards the east in Hudson Strait. Ice flow was strongly affected by the Amadjuak Ice Divide to the north, and possibly from the Foxe Ice Divide to the northwest. During deglaciation, ice is inferred to have evacuated from the Hudson Strait relatively quickly. As marine inundation continued around Foxe Strait and Foxe Basin,

the remnants of the Foxe dome retreated onto Baffin Island. This resulted in disintegration of the Amadjuak Ice Divide, and formation of the Amadjuak Dome. In parts of the eastern Foxe Peninsula, this affected a change of ice-flow direction of more than 90 degrees. In western Foxe Peninsula, marine incursion played a similar significant control on deglaciation, but with less dramatic changes in ice-flow directions.

In 2006, SWBIG surficial geologists collected 250 ice-flow indicator measurements, 141 samples for till geochemistry and Kimberlite Indicator Mineral analysis, and made more than 1100 field examinations that will be used as ‘ground-truthing’ sites, essential for constructing the surficial geology map. To better understand ice flow, field examinations also included estimating the quantity and type (e.g., Precambrian vs. Paleozoic) of erratics. To quantify glacial chronology, samples were collected for radiocarbon analysis, Terrestrial Cosmogenic Nuclide dating, and Optically Stimulated Luminescence dating. Chronological and geochemical analyses are in progress.

### SWBIG: Bedrock Mapping

Bedrock mapping included 1:250 000-scale mapping of Precambrian units, and sampling for geochronology, geochemistry, and metal concentrations in mineralized outcrops. Rock units prospective for base — and precious metal mineralization include a package of mafic-ultramafic ± intermediate volcanic rocks, informally named the Schooner Harbour belt, that extend approximately 100 km from Schooner Harbour on the southwest coast of the Foxe Peninsula to the West Foxe Islands. Also prospective are a suite of mafic to ultramafic (meta-peridotite) rocks that intrude Paleoproterozoic metasedimentary rocks correlated with the <1.93 Ga Lake Harbour Group. Some of the metasedimentary units are conspicuously sulphide-bearing, providing compelling exploration targets where ultramafic rocks intrude a sulphide-bearing metasedimentary host.

In addition to assessing some of the traditional exploration targets for metals, the bedrock mapping team also attempted to gain a better understanding of the geological context of carving stone occurrences. In Cape Dorset, renowned for producing



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Inuit art, carving is a \$3 million per year industry. Locating new sources of carving stone is vital to sustaining that activity. In the 2006 field season, two distinct settings for carving stone were identified. The first is deformed and hydrated ultramafic rock, generally occurring as peridotite sills but also as ultramafic flows, yielding a dark green to black carving stone. The second occurrence is a skarn rock derived from metacarbonate and formed at the contact between granitoid intrusions and Lake Harbour Group marble. The skarn setting produces a highly valued yellow-green carving stone. Potential new sources of both types of carving stone were identified in coastal regions of the study area.

Based on occurrences of sapphire associated with metasomatized marble and granitic pegmatite in the Kimmirut area, and that there are similar rocks and settings in the SWBIG study area, there is inferred potential for sapphire occurrences in the western Foxe Peninsula region. Of particular interest with respect to the 2006 study area are common occurrences of Lake Harbour Group metacarbonate rocks in contact with felsic intrusive rocks. The contacts are locally marked by pale pink-violet titaniferous diopside and blue-green spinel that are interpreted to be ‘pathfinders’ at known sapphire occurrences.

In 2006, the bedrock and surficial mapping projects were assisted by Remote Predictive Maps (RPM) produced in advance of field work. The RPM products were produced by compiling and integrating new and archival geophysical and geological data in addition to remotely sensed data (e.g., Landsat maps, shaded relief and winter Landsat images, hyperspectral data). Field work in 2006 also included obtaining measurements of properties of representative rock units intended to provide ‘ground-truthing’ for hyperspectral studies.

SWBIG: Traditional Place-Names Maps

The CNGO is committed to providing GIS expertise to communities and researchers in developing traditional place-names maps. The SWBIG study area, which includes the Foxe Peninsula — Cape Dorset area, is a culturally rich region of Nunavut. To record and preserve Inuit culture, SWBIG and the CNGO are assisting Norman Hallenday and Anne Henshaw (Bowdoin College, Maine) to document locations of Inuit sites, travel routes, place names, and traditional land uses in the SWBIG project area. This may provide useful background data for potential exploration projects in the region.

Web-based Data Delivery: www.nunavutgeoscience.ca

Working with INAC, GSC and with assistance from the Northwest Territories Geoscience Office (NTGO), CNGO developed and implemented a data delivery project in 2006. Nunavutgeoscience.ca is intended to be the ‘single-door’, web-entry point for clients looking for components of geoscience data from Nunavut. This site will help meet demands for searching, viewing and accessing integrated spatial data and other types of geoscience data (e.g., assessment files, mineral occurrences, maps (MIRAGE), geoscience data sets, reference lists), and to place Nunavut in a competitive position serving a global mineral exploration industry. This is a multi-partnered, collaborative project involving geologists, compilers, data managers, and IT specialists from the CNGO, INAC (Iqaluit), GSC, NTGO, and NTI. The first components of nunavutgeoscience.ca went on line in September 2006.

The Borden Basin Project: Base-Metal Mineralization, Northern Baffin Island

The Borden Basin project is a collaborative project between Dr. E. Turner of Laurentian University and the CNGO.



The project began in 2003 and will provide a regional context and new interpretations for the mineralization in the Milne Inlet Graben (MIG). Current stratigraphy and sedimentology of the basin needs to be re-interpreted new knowledge in the field of Precambrian carbonates. Moreover, no work had been done on regional controls on base-metal mineralization or regional patterns in metallogeny.

The Borden Basin is a Mesoproterozoic aulacogen comprising three northwest-trending grabens that developed on Archean (Rae domain) rocks. Carbonate strata of the Bylot Supergroup in the Borden Basin host numerous base-metal showings, including the Zn-Pb-Ag deposit mined at Nanisivik from 1976 to 2002. Base-metal showings in the MIG are hosted by the Society Cliffs Formation, which is expressed as a peritidal carbonate platform in the eastern part of the graben, and as a laterally equivalent basinal laminite with local deep-water carbonate mounds in the western part.

The nature and age of the mineralising event at Nanisivik and at base-metal showings throughout the basin are controversial. Ongoing work indicates that mineralisation is controlled by three structural phenomena, including:

- 1) Antiform — gas-cap type replacement-style mineralization;
- 2) Fracture-controlled mineralisation in the vicinity of major, northwest-trending intra-graben faults; and
- 3) The graben-bounding White Bay Fault zone on the north side of the MIG. A variety of dating methods have yielded mineralisation ages for the Nanisivik ore-body that range from Mesoproterozoic (ca. 1.2 Ga) to Paleozoic (461 Ma).

A better understanding of the age and factors influencing mineralization will be essential for directing renewed exploration in the Borden Basin.

Nunavut Stratigraphy

Ordovician – Silurian Biostratigraphy and Hudson Bay Thermal Maturation Studies

Samples from exploration wells intersecting Ordovician and Silurian rocks of the Hudson Bay offshore and Lowlands areas are being studied to demonstrate thermal maturity and hydrocarbon potential. The study will examine more than 400 conodont-bearing samples, and will result in improved biostratigraphic correlations for a region that may have exploration potential for hydrocarbon resources. Thermal maturity is being evaluated using conodont CAI and Rock-Eval Pyrolysis data. ■

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# Summary of Exploration Activities 2006

## Kitikmeot Region



The Kitikmeot region spans the western and northern mainland of Nunavut, and parts of Victoria, Prince of Wales, King William, and Somerset islands. Kugluktuk and Cambridge Bay are the largest communities and provide services to exploration projects. Yellowknife, to the south in the Northwest Territories, is also an important logistical centre.

The Kitikmeot is geologically diverse and the commodities being sought are varied with over 60 active exploration projects. In the past, mines (Roberts Bay, Ida Bay, Ida Point) in the western Kitikmeot have generally been small. One exception, the Lupin gold mine, produced over 3.1 million oz of gold from 1982 to 2005. Current owners are considering re-opening the mine.

Gold and diamonds were the two primary commodities sought by companies in the Kitikmeot. A highlight on the diamond front was the official opening of Nunavut’s first diamond mine, the Jericho Diamond Mine. Development plans for production at the Doris North gold deposit in the Hope Bay belt are in the permitting

stage with plans to open the mine in 2008. The George and Goose lakes gold deposits are the focus of an active advanced exploration program.

Recent diamond exploration covered parts of the western mainland and projects were active on Victoria and Prince of Wales islands. The Boothia Peninsula and areas south of Kugaaruk in the eastern Kitikmeot had strong exploration activity with a new diamond district being identified in 2005.

Traditional exploration targets in the region have included massive sulphide-hosted base metals. The Amaqqut Group of Projects include Gondor, High Lake, Hood, Izok (all base metals) and the Ulu gold deposit. The High Lake deposit, the most advanced of these projects, is in the permitting process for the development of a mine. The Hackett River base and precious metal deposit is also returning impressive numbers

Uranium exploration is seeing a resurgence of interest in Nunavut and specifically in the Hornby Bay Basin in the Kitikmeot with programs ranging from initial exploration efforts to well-developed drill programs.

## Base Metals

### ANIALIK

**Operator, Owners**  
Strongbow Exploration Inc.

**Commodity**  
Polymetallic VMS

**NTS**  
76M/06

**Location**  
Approximately 7 km west of Wolfden’s High Lake;  
150 km southeast of Kugluktuk

The proximity and similar geological setting to Wolfden Resources’ High Lake VMS deposit encouraged Strongbow to explore on the 62,519 ha Anialik property located within the Anialik River volcanic belt in the northern Archean Slave Province. This volcanic belt, like many in Nunavut, is an under-explored greenstone belt. Some parts of the Anialik property are on Inuit Owned Land (IOL) parcels of land and subject to an agreement that Strongbow negotiated with NTI. Strongbow has completed exploratory work on Anialik although no work was done in 2006. The company is currently evaluating plans for the 2007 program.



### CANOE LAKE

**Operator, Owners**  
Strongbow Exploration Inc.

**Commodities**  
Copper, Zinc, Lead, Gold, Silver

**NTS**  
76M/02, 03

**Location**  
25 km south of Wolfden’s High Lake;  
190 km southeast of Kugluktuk

The Canoe Lake property comprises approximately 15,860 ha of mining leases, mineral claims and IOL within the High Lake greenstone belt. The property is centred on two Canada Mining Leases, currently under option from Canadian Natural Resources, and is host to a number of known showings, including the Canoe Lake massive sulphide occurrence and several gold showings.

Copper-zinc mineralization occurs as massive to stringer sulphides within the volcanic-sedimentary pile at the same stratigraphic position as Wolfden’s High Lake VMS deposit. Limited previous diamond drilling by earlier operators returned values of 0.8% Cu, 4.8% Zn, 89 g/t Ag and 1.0 g/t Au over 1.8 m. In 2006, Strongbow completed a limited program of mapping, prospecting and soil sampling and are contemplating program plans for 2007.

### GONDOR DEPOSIT <sup>1,2</sup>, HOOD DEPOSIT <sup>1</sup>

**Operator, Owners**  
Wolfden Resources Inc.<sup>1,2</sup>;  
Falconbridge Ltd.<sup>1</sup>  
(a subsidiary of Xstrata)

**Commodities**  
Copper, Zinc, Lead, Gold, Silver

**NTS**  
86H/09<sup>1</sup>;  
86H/14<sup>2</sup>

**Location**  
50-75 km southwest of Lupin

Wolfden recently expanded their land holdings in Nunavut to form the Amaqqut Group of Projects. These projects include Izok, High Lake, Hood (all base metals), the Ulu gold deposit, and the Gondor base metal project (60 per cent owned with Falconbridge Ltd., a subsidiary of the Xstrata group). The Gondor Deposit contains a high grade core (historical resource of 4,380,000 tonnes of 0.1% Cu, 1.2% Pb, 9.7% Zn, 0.78 g/t Au and 64.6 g/t Ag). The deposit could become an important source of future ore for the Lupin Mill. Wolfden is planning an aggressive 2007 exploration program at Gondor. The deepest hole drilled into the deposit returned 20.4 m grading 10.4% Zn, 1.6% Pb, 0.5 g/t Au and 79.4 g/t Ag. The deposit is open for expansion in all directions.

Wolfden’s 100 per cent owned Hood Deposit is located north of Izok and is host to several copper-rich deposits. Exploration at Hood was scheduled to begin in 2006.





**HIGH LAKE**

**Operator, Owners**  
Wolfdén Resources Inc.

**Commodities**  
Copper, Zinc, Gold, Silver

**NTS**  
76M/07

**Location**  
175 km east-southeast of Kugluktuk

The High Lake Cu-Zn-Ag-Au deposit is the most advanced, in terms of permitting, of all Wolfdén’s projects in Nunavut. Wolfdén submitted their comprehensive project proposal for the High Lake Project to the Nunavut Impact Review Board (NIRB) and Federal and Territorial regulatory authorities in November 2006. This filing is the next step in the regulatory process for the proposed High Lake Mine. In submitting the documents, Wolfdén requested that NIRB consider the information provided in the project proposal to be sufficiently comprehensive for consideration as a full environmental impact statement.

The property consists of 15 leases (1,710 ha) located mainly within a land claim on which both surface and subsurface rights belong to NTI. The indicated resource of 18 million tonnes, using a 2.5% CuEqv cut-off, averages 5.01% CuEqv and these values place the High Lake deposit amongst the highest grade undeveloped copper deposits in the world. Mineralized zones are the AB, D and West Zones, Sand Lake, WW Zone and Cairo Zone.

The 2006 program in the High Lake area had a renewed focus on exploration. Drilling focussed on the new showings of Sand Lake, WW Zone and the Cairo Zone. The most favourable hole at Sand

Lake intersected 45 m of mineralization with the best section assaying 3.29% Cu across 15.05 metres. This prospective horizon remains open at depth. Other work in 2006 involved continued engineering, geotechnical work, environmental programs and feasibility of all Wolfdén’s northern projects.

**IZOK**

**Operator, Owners**  
Wolfdén Resources Inc.

**Commodities**  
Copper, Zinc, Gold, Silver

**NTS**  
86H/10

**Location**  
175 km south-southeast of Kugluktuk

Part of the Amaqqut Group of Projects, the Izok deposit is host to one of the highest grade copper-zinc deposits in the world with an indicated resource of 14.4 million tonnes grading 2.52% Cu, 1.28% Pb, 12.94% Zn and 71 g/t Ag, plus an inferred resource of 370,000 tonnes grading 3.79% Cu, 0.27% Pb, 6.40% Zn and 54.2 g/t Ag. Core samples from Izok indicate the deposit has potential for significant gallium with values returned up to 105 g/t. Wolfdén has retained Wardrop Engineering Inc. to complete a full feasibility study for placing the Izok deposit into production. This feasibility study is expected in the second quarter of 2007.

Evaluation work to date shows that the majority of Izok can be mined by low-cost open pit mining methods and suggests that the Lupin mill should be used for processing the ore. To use that existing infrastructure would represent a major reduction in capital and simplify

the permitting requirements for development of the Izok deposit.

A Land Use Permit from INAC and Water Use License from the Nunavut Water Board have been granted to Wolfdén which allow construction of a new camp at Izok. Significant drilling programs are planned for the property. Geotechnical drilling will be completed for engineering and final open pit mine designs. Exploration drilling to expand the deposit at depth where it remains open, and to better define inferred resources, will begin in the near future.

A new showing, the Point Lake Zone, was found in 2006, 45 km south of, and in the same greenstone belt as, Izok. The surface expression of the zone is more extensive than the High Lake West Zone. Grab samples returned assays of 2.04% Cu, 9.00% Zn and 58 g/t Ag and 2.46% Cu, 7.23% Zn and 70 g/t Ag. Historical drilling (three holes) traced the mineralized horizon to the south; however, the prospective northern extension under Point Lake remains open.

## Diamonds

**AMARUK**

**Operator, Owners**  
Diamonds North Resources Ltd.

**Commodity**  
Diamonds

**NTS**  
57A, 56O

**Location**  
45 km south of Kugaaruk

This property covers approximately 3.24 million hectares (ha) and includes the Deep, Dar and Hood claims. One kimberlite, Umingmak, was defined in outcrop in 2005 with a 500 kg sample collected for



analysis. In 2006, the kimberlite was drill-confirmed, four other kimberlites (Qavvik, Walrus, Beluga, Char) were intersected and more than 30 kimberlite prospects were identified. Nineteen new float occurrences were identified with all but one in discrete and separate locations. All are associated with at least one geophysical anomaly. The kimberlites, mainly comprised of macrocrystic hypabyssal rock, vary from site to site.

Over 1400 till samples were collected from Amaruk and 240 have been processed to date. These results identified four new kimberlite float occurrences, two of which indicate proximity to source. These areas will be followed-up by further prospecting and geophysics. Detailed aeromagnetic surveying (25,000 line-km) is planned over parts of the property not previously flown. Preliminary interpretation has identified numerous targets for drilling.

To date, approximately \$10 million worth of data has been collected on the property and the project is being advanced to the drill testing stage. The discovery of multiple kimberlite occurrences, some with high diamond counts and favourable stone size distribution, and the abundance of indicator minerals with positive diamond inclusion chemistry demonstrate the diamond potential of Amaruk.

**BARROW**

**Operator, Owners**  
Indicator Minerals Inc.;  
Hunter Exploration Group

**Commodity**  
Diamonds

**NTS**  
57A/07

**Location**  
15 km south of Kugaarak

Barrow is one of Indicator Minerals’ key projects in the newly emerging kimberlite district in the Kugaaruk area. The property covers 44 Mineral Claims (45,986 ha) with the rights being 80 per cent Indicator Minerals and 20 per cent Hunter Exploration Group. In 2005, Indicator discovered kimberlite float close to a high priority geophysical target and recovered a single macrodiamond during analysis. Caustic fusion analysis on a 25.5 kg sample collected from the same site yielded 176 diamonds (five macrodiamonds, 171 microdiamonds) with an abundance of clear, colourless stones with good crystal form.

Detailed prospecting, till sampling and geophysics were conducted during the 2006 field season to delineate drill targets for 2007. The diamond results verify that Barrow has the potential to host diamond-bearing kimberlite sources.

**BRSC/WM**

**Operator, Owners**  
Nordic Diamonds Ltd.

**Commodity**  
Diamonds

**NTS**  
76L

**Location**  
North of Contwoyto Lake, 350 km southwest of Cambridge Bay

Nordic is currently developing its 100 per cent owned BRSC and WM claims located immediately north of Contwoyto Lake and the Jericho Diamond Mine. Nordic completed an extensive till sampling program that has resulted in the discovery of a kimberlite boulder train on the WM claim. A team of Russian geologists under the direction of Dr. Nick Pokhilenko carried out the 2006 program of till sampling and prospecting. Exploration focused on the indicator mineral trains, as well as the kimberlite boulder train, identified during the 2005 summer regional work program. The program will help prioritize airborne geophysical anomalies for drill testing.

**CORONATION GULF**

**Operator, Owners**  
Ashton Mining of Canada Inc./  
Vaalidam Resources Ltd.

**Commodity**  
Diamonds

**NTS**  
86P/03

**Location**  
100 km southeast of Kugluktuk

The Coronation Gulf Diamond District, southeast of Kugluktuk, covers the northern portion of the Archean Slave Province: 21 kimberlites, including 11 that



contain diamonds, have been discovered in the area. The Coronation Gulf project encompasses 91,400 ha covering the Eokuk, James River, Kim, Ric and Vic properties. Kimberlites discovered on all the properties in this area include the Artemisia and Thrift kimberlites on the Kim property, the Potentilla and Stellaria kimberlites on the Kikerk property and the Hydra, Perseus, Caltha, Ric-97 and Ric-26 on the Ric property. In addition to these known kimberlites, Ashton has identified more than 10 indicator mineral anomalies that warrant investigation.

In July 2006, Ashton granted Vaaldiam Resources Ltd. an exclusive option to earn a 40 per cent interest in their wholly owned properties. Vaaldiam completed a summer exploration program over the Artemisia kimberlite. This kimberlite is well exposed in outcrop and has a surface area of approximately three hectares. A 1.16 tonne mini-bulk sample was previously analysed in 2002 and returned a total of 0.20 carats of diamonds larger than 0.8 mm. An additional 11 tonnes of kimberlite drilled from seven holes returned a total

of 1.18 carats of diamonds larger than 0.8 mm. The largest diamond recovered was a colourless aggregate crystal weighing 0.08 carats. Vaaldiam collected a 100 tonne mini-bulk sample from the kimberlite in 2006; results are pending.

DARBY

**Operator, Owners**  
Indicator Minerals Inc.;  
Hunter Exploration Group;  
Teck Cominco Limited

**Commodity**  
Diamonds

**NTS**  
56N/06, 56N/11

**Location**  
200 km southwest of Kugaaruk

The Darby Project includes more than 160,000 ha of 77 mineral claims and six prospecting permits. Indicator Minerals is the operator and the project is currently under option to Teck Cominco Limited who can earn a 51 per cent interest by spending \$14 million over four years.

Five targets were drill-tested in 2006 and five kimberlite bodies were confirmed

with ‘Iceberg’, the largest kimberlite, estimated to encompass 11 ha. A detailed airborne geophysical survey expanded coverage from 10 to 40 per cent of the property and identified new anomalies, bringing the total number of untested high-priority geophysical targets to 23.

Results from the first two holes (462 kg) drilled into the Iceberg kimberlite returned a total of 24 diamonds, including three macrodiamonds. Property-wide prospecting identified 95 new kimberlite float occurrences down-ice from associated geophysical anomalies. The float occurrences represent several visually distinct kimberlite types.

Plans for Darby in 2007 include the analysis of select kimberlite float occurrences, completing airborne geophysical coverage of the property and drill testing a minimum of 10 new targets.

HEEQOU

**Operator, Owners**  
Diamondex Resources Ltd.

**Commodity**  
Diamonds

**NTS**  
86I/01, 86I/02, 86H/15, 86H/16

**Location**  
225 km southeast of Kugluktuk

The Heeqou property encompasses 56 mineral claims that cover 50,554 ha and is located 40 km southeast of the Anuri kimberlite pipes and 30 km west of the Rockinghorse kimberlite cluster. The property is owned 100 per cent by Diamondex who have spent C\$1.06 million to date.

Heequo was staked in 2002 and initial work included the collection of till samples and surficial geologic mapping. Further exploration involved the collection of



infill till samples which returned positive indicator anomalies across the property. A RESOLVE helicopter-borne mag/EM survey which defined several geophysical targets was completed over the property in 2005. Detailed sampling was also conducted and several well-defined kimberlite indicator mineral trains were located. Exploration work was conducted on the property in 2006; results are pending.

HOOD RIVER CLAIMS

**Operator, Owners**  
Tahera Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
76L/13

**Location**  
100 km north of the Jericho diamond mine

The diamondiferous Tenacity kimberlite, with a surface expression of approximately 80 x 100 m, was discovered on the Hood River property in 2000. Subsequent processing of kimberlite samples returned 218 diamonds measuring greater than 0.15 mm. These results indicate that the Tenacity kimberlite probably does not have sufficient grade or size to be economic on a stand-alone basis. However, the property is considered to have potential for additional discoveries. Although no work was conducted during 2006, Tahera continues to assess the diamond potential of this region.

HEPBURN

**Operator, Owners**  
Diamonds North Resources Ltd.

**Commodity**  
Diamonds

**NTS**  
86J, 86K

**Location**  
150 km south of Kugluktuk

The Hepburn property is owned by Diamonds North and is a trans-border property with the majority of the property and work being conducted in the NT. This project was initiated through Diamonds North’s Northern Recon Initiative in 2003. Since starting work on the Hepburn project, Diamonds North had advanced the program from initial exploration to delineating drill targets and outlined two potential kimberlite fields. One of these targets is outlined by a circular lake and is coincident with a magnetic anomaly. Kimberlite indicator minerals have been recovered in till samples.

In 2006, over 24,000 line-kms of airborne surveying were completed as well as additional till sampling and target follow-up. Preliminary interpretation of the airborne data has identified numerous high priority geophysical targets. Planning is currently underway for a drill program plus additional airborne and detailed geophysical surveying.

IC

**Operator, Owners**  
Trigon Diamond Corporation Ltd.;  
Contact Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
56P/10, 56P/11

**Location**  
Located about 90 km  
southeast of Kugaaruk

The IC Project is a joint venture program between Trigon (49 per cent) and Contact Diamond Corporation (51 per cent) and is located in the new diamond district in the Kugaaruk area. With the addition of 16,492 ha staked this past summer, the property now covers 62,667 ha. Contact is currently exercising its option to earn up to a 60 per cent interest in the project by sole-funding a further \$3 million of exploration expenditures.

Exploration on the IC block has established a well-defined train of kimberlite indicator minerals with mineral chemistry indicative of a diamondiferous kimberlite source. Airborne geophysical surveying has identified a number of high-priority geophysical targets in the vicinity of the train. The results of up-ice sampling, as well as the nature of the indicator minerals recovered, suggest multiple, local sources.

In September 2006, Trigon commenced a second phase of exploration which included the collection of in-fill till samples in an area of high-interest indicator mineral anomalies discovered on the property in 2005. Using available knowledge and research on other properties in the region, Trigon feels the sources of the KIM trains lie within the IC property.





The company is conducting a more detailed till sampling program (50 m spacing) in anticipation of an upcoming drill program.

Trigon is also investigating a 50 m<sup>2</sup> mineralized showing on the property, where a single grab sample in 2005 returned highly anomalous levels of precious and base metals, including 1,220 g/t silver. The showing occurs within a 20 m wide metasedimentary unit containing mineralized zones that can be traced for 1.7 km. Sampling, mapping, and geophysical surveying was completed over the zones; however, 33 grab samples taken returned only modest results. Given the extent of the mineralized zone and the highly anomalous initial grab sample, further mapping and prospecting have been initiated to investigate the geophysical anomalies.

**JERICO DIAMOND MINE**

**Operator, Owners**  
Tahera Diamond Corporation;  
Teck Cominco Limited

**Commodity**  
Diamonds

**NTS**  
76E/14

**Location**  
350 km southwest of Cambridge Bay

2006 saw an outstanding event in exploration for Nunavut — the opening of Jericho, the Territory’s first diamond mine. Mine construction was substantially completed during 2005 and the first diamonds were produced in January 2006. Commercial production started on July 1, 2006 and Tahera recognized its first revenues from diamond production in the third quarter. The mine-life is estimated at 9 years with a planned average rate of

2,000 tonnes per day. Processed tonnes and carats produced during the second quarter of 2006 rose to 147,000 tonnes and 98,600 carats respectively, from 63,000 tonnes and 28,318 carats in the first quarter; carat production decreased slightly to 96,500 carats in the third quarter of 2006.

The overall expected grade of the Jericho kimberlite resource material remains at 0.85 carats per tonne as per the October 2004 Preliminary Assessment resource grade estimate. A sparkling highlight of production to date is the recovery of a 59 carat gemstone with excellent shape and good colour and clarity valued in excess of \$400,000 US.

The company signed a formal Inuit Impact Benefit Agreement (IIBA) with the Kitikmeot Inuit Association (KIA) prior to the opening of the mine. Tahera also entered into an agreement with Tiffany & Co. for the purchase and marketing of the diamonds and Tiffany provided \$35 million to assist with the project’s financing. Mid-November 2006, Tahera announced a strategic alliance with Teck Cominco in which Teck Cominco purchased \$30 million in a private placement. This agreement gives Teck



Cominco 16 per cent of shares of Tahera on a non-diluted basis and 24.9 per cent on a fully diluted basis.

**PEREGRINE**

**Operator, Owners**  
Diamondex Resources Ltd;  
Stornoway Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
86P/03, 86P/04, 86P/05

**Location**  
90 km southeast of Kugluktuk

The Peregrine property is a joint venture between Diamondex (70 per cent) and Stornoway (30 per cent) and located in the Coronation diamond district of the western Kitikmeot. The partners have spent C\$1.9 million to date. The property is immediately west of the Vic and Kim claims, where Ashton Mining has discovered several diamond-bearing kimberlites including the Artemisia kimberlite.

Earlier work by Diamondex involved an airborne geophysical survey which outlined numerous anomalies, follow-up on the anomalies, till sampling and geological mapping. A total of 24 high-priority magnetic targets have been

identified with 11 anomalies selected for further evaluation. Diamondex had a limited work project on this ground in 2006; results are pending.

**POLAR PROJECT**

**Operator, Owners**  
Tahera Diamond Corporation;  
De Beers Canada Inc.

**Commodity**  
Diamonds

**NTS**  
76L/04, 86I/01

**Location**  
225 km southeast of Kugluktuk

Tahera and De Beers have a joint venture agreement on the Polar project on land adjacent to the Jericho property. The significantly diamondiferous Muskox kimberlite is situated on this property. In addition to the known kimberlites, the property also hosts a number of unresolved kimberlite indicator mineral trains.

In 2006, Tahera conducted a large-scale kimberlite evaluation program with the exploration strategy for increasing reserves in the Jericho area. The Muskox kimberlite occupies a surface area of approximately four hectares, 2.5 times larger than that covered by the Jericho kimberlite. Muskox is comprised of at least two volumetrically significant units, the MKU-A and MKU-B. Approximately 865 dry tonnes from MKU-A and 63 dry tonnes from MKU-B were extracted and processed in 2006. The MKU-A unit yielded 13,890 stones representing 455.3 carats for a recovered sample grade of 0.53 carats/tonne. The MKU-B unit yielded 692 stones representing 21.8 carats for a recovered grade of 0.35 carats/tonne. Diamond valuation, detailed description and characterization of the

materials will be reported in early 2007.

Both large diameter (17.5”) reverse circulation (RC) drilling and core delineation drilling were undertaken with a budget at approximately \$13 million. 5,730 m (21 holes) of core drilling penetrated the kimberlite to a maximum depth of 382 m and allowed for further interpretation of the extents and nature of the body. The Muskox kimberlite is now interpreted to cover less surface area, be more voluminous at depth and have steeper sides than previously thought. An updated estimate of the in-situ tonnage of the body is 10 to 11 million tonnes to a depth of 200 m, and 15 to 16.5 million tonnes to a depth of 300 m.

**ROCKINGHORSE**

**Operator, Owners**  
Tahera Diamond Corporation;  
De Beers Canada Inc.

**Commodity**  
Diamonds

**NTS**  
86I/10, 86I/11

**Location**  
160 km southeast of Kugluktuk

The Rockinghorse property containing the Anuri kimberlite body is a joint venture project between Tahera and De Beers. The partners consider the property to be prospective for further discovery, as several unresolved kimberlite indicator mineral trains have been identified. The diamondiferous Anuri kimberlite, a multi-phase body that covers 3.5 ha, is made up of two lobes that coalesce into a single pipe near the surface. The western lobe measures approximately 225 x 150 m and the eastern lobe is interpreted to measure 100 m<sup>2</sup>. Drilling and drill sampling provided 5,600 kg for analysis. There has

been insufficient exploration to define a mineral resource and it is uncertain if further exploration will result in such a delineation.

**SAKARI**

**Operator, Owners**  
Diamonds North,  
Shear Minerals Ltd.

**Commodity**  
Diamonds

**NTS**  
56N/05, 56N/11, 56N/12

**Location**  
190 km southwest of Kugaaruk

The Sakari Property, covering 16,997 ha and located adjacent to the Darby project, is owned and operated by Diamonds North with a 50 per cent option agreement with Shear Minerals Ltd. This project was initiated mid-2006 and to date minimal work has been completed on the project with the exception of till sampling on a regional grid where kimberlite indicator minerals were recovered. The partners are planning airborne geophysical surveying at 100 m line spacing.

**SANAGAK**

**Operator, Owners**  
Indicator Minerals Inc.;  
Hunter Exploration Group

**Commodity**  
Diamonds

**NTS**  
57F, 57G

**Location**  
Boothia Peninsula,  
northwest of Taloyoak

The Sanagak Project is operated by Indicator Minerals Inc. and consists of approximately 450,000 ha of prospecting permits. Kimberlite indicator minerals,



some with diamond indicator chemistry, were recovered in five spatially separate areas on the property from heavy mineral samples collected in 2004. During 2005, 99 heavy mineral samples were collected to follow up anomalies. The Boundary anomaly is located along the eastern boundary of the project area. Samples collected east of this anomaly confirmed that kimberlite indicator minerals are present outside the project area and the company staked 42 mineral claims covering more than 43,700 ha. Plans for 2006 included additional heavy mineral sample collection to delineate the extent of the indicator mineral anomalies and to acquire airborne geophysical data to identify kimberlite targets.

SIKU
<b>Operator, Owners</b> Diamonds North Resources Ltd.; Arctic Star Diamond Corp.
<b>Commodity</b> Diamonds
<b>NTS</b> 56N/05, 56N/07, 56N/10
<b>Location</b> 175 km southwest of Kugaaruk

The Siku property, owned and operated by Diamonds North with a 50 per cent option agreement with Arctic Star Diamond Corp, surrounds the Darby project on three sides and covers 182,000 ha. Till samples collected from the Siku property have yielded indicator minerals indicating that the Darby kimberlite field may extend onto the property. An airborne magnetic survey over the claims has been initiated for drill target delineation.

TIM
<b>Operator, Owners</b> Trigon Exploration Canada Ltd.; Committee Bay Resources; Indicator Minerals Inc.
<b>Commodity</b> Diamonds
<b>NTS</b> 56P
<b>Location</b> 90 km southeast of Kugaaruk

This property is under agreement with Trigon, Committee Bay Resources and Indicator Minerals Inc. The TIM property comprises 32,171 ha and is contiguous with the IC property. A total of 37 reconnaissance samples were collected and results from concentrating and picking are expected by the end of the year.

UALLIQ
<b>Operator, Owners</b> Diamonds North Resources Ltd.; International Samuel Exploration Corp.
<b>Commodity</b> Diamonds
<b>NTS</b> 57A, 57B
<b>Location</b> West-southwest of Kugaaruk

The Ualliq property covers 440,000 ha and is owned and operated by Diamonds North with a 30 per cent option agreement with International Samuel Exploration. The project borders Diamond North's Amaruk project. 2006 exploration included detailed airborne geophysical surveys and detailed sampling. Targets were identified in areas with kimberlite indicator minerals and a strong cut-off associated with several KIM clusters supports the possibility of multiple kimberlites on this

property. Planning for a drill program is underway.

VICTORIA ISLAND
<b>Operator, Owners</b> Diamonds North Resources Ltd.
<b>Commodity</b> Diamonds
<b>NTS</b> 77F
<b>Location</b> Central Victoria Island

This property covers an estimated 440,000 ha in central Victoria Island and is trans-border with NWT. Diamonds North and Teck Cominco had an earlier option agreement which terminated in 2005. Diamonds North now holds 100 per cent interest in a total of 39 kimberlites on the property.

Kimberlites and trends that have been identified are the Galaxy, Jaeger, King Eider, Pintail, Sanderling, Sand Piper, Snow Bunting and Turnstone. More than 80 per cent of the kimberlites are diamondiferous, with several bodies returning significant diamond counts and favourable stone size distribution. Exploration efforts have focussed on the 20 km-long Galaxy and 25 km-long King Eider confirmed kimberlite trends, two semi-parallel, northwest-southeast trending structures 30 km apart. In 2006, Diamonds North received the complete 2005 diamond results for the King Eider kimberlite. These results from 1697.5 kg of drill core submitted by Teck Cominco and 576.9 kg of drill core and a 1053.6 kg trench sample submitted by Diamonds North returned, amongst other stones, a 0.31 carat diamond recovered from the trench sample. Diamonds North now considers that the best potential

for Victoria Island is for small high-value deposits with the King Edier kimberlite having the potential of 4 - 5 million tonnes. With important targets as the Snowy Owl kimberlite and the Southeast Galaxy trend, there is potential for an additional 15 to 20 million tonnes of kimberlite. Diamonds North plans to collect a 5-10 tonne drill sample from King Eider.

VICTORIA ISLAND - BYRON BAY, MOUNT PELLY
<b>Operator, Owners</b> Pure Diamonds Exploration Inc.; De Beers Canada Inc.
<b>Commodity</b> Diamonds
<b>NTS</b> 77A, 77B, 77C, 77D, 67C
<b>Location</b> South Coast of Victoria Island

Pure Gold Gold Minerals Inc. changed their name to Pure Diamonds Exploration Inc. early December 2006. This company and De Beers Canada Inc. are working the High Arctic Joint Venture on several projects. These properties were acquired by De Beers based on historic KIM results from stream sediment samples collected over 20 years ago during broad regional sampling programs. On the south coast of Victoria Island, two projects were active. The Byron Bay project consists of eight permits and the Mount Pelly project consists of 21 permits centred over Cambridge Bay. A total of 238 till samples were collected over the two projects in 2006. Sampling results indicate that little KIMs will be recovered over the properties, so all permits are being relinquished.

## Energy Sources

ASIAK RIVER
<b>Operator, Owners</b> UNOR Inc.
<b>Commodities</b> Uranium, Diamonds
<b>NTS</b> 86J/10-16, 86K/01, 86N/01, 86 O/3-4
<b>Location</b> 50 km south of Kugluktuk

The Asiak River property consists of a single large claim block with a total of 90 claims covering 89,700 ha within the Hornby Bay Basin. UNOR has identified 19 diamond targets and four uranium showings on this claim block since 2004.

At Tara West, located on the east/central area of the Asiak claim block, results of the 2006 surface samples from a one metre wide east-west striking shear zone run up to 0.43% U<sub>3</sub>O<sub>8</sub> and 2.7% copper. The zone is traceable for 50 m along strike within Epworth metasediments. The zone continues to the east beneath thick overburden for 400 m to the Asiak River and is traced on the east side on the river as the Tara East showing. Little Grey Owl Lake, located in the central area of block, was test-drilled in 2004 by the company with the best results being 0.86% U<sub>3</sub>O<sub>8</sub> over 0.6 m.

Harzburgitic garnets, kimberlitic ilmenites and chromium clinopyroxenes were found in 212 till samples of the 2005 samples. Combined with anomalies from 2003-04, two major mineral trends have been identified that extend for seven and 6.5 km, respectively. Results from the 2006 till sampling program are pending.

BEAR VALLEY
<b>Operator, Owners</b> Adriana Resources Inc.
<b>Commodity</b> Uranium
<b>NTS</b> 86J/14, 86N/01, 86O/03, 86O/04
<b>Location</b> 130 km southwest of Kugluktuk

The Bear Valley Uranium Project covers 350 km<sup>2</sup> along the eastern edge of the Hornby Bay Basin. Prospecting, sampling, geological mapping, and geophysical surveying was undertaken in 2006. Previously reported uranium occurrences were confirmed during fieldwork. This program was part of a larger exploration program that included work on the company's MIE Ni-Cu-PGE project and the UNAD JV project. The Bear Valley property has two main target areas: Tabb Lake in the south end of the property, and the newly discovered Alpha Horizon located northwest of All Night Lake. Ten samples collected along a 280 m mineralized trend during UNOR's 2005 reconnaissance program in the Tabb Lake area returned values of 0.067% U<sub>3</sub>O<sub>8</sub> to 4.803% U<sub>3</sub>O<sub>8</sub>. Two samples collected during the 2006 program returned anomalous uranium mineralization. Over the Alpha Horizon, Fugro Airborne Surveys was contracted to acquire 1,300 line-km of detailed airborne electromagnetic data to define the horizon more accurately; the survey confirmed the existence and extent of the conductor.



CAMECO OPTION

**Operator, Owners**  
 Cameco Corporation;  
 UNOR Inc.

**Commodity**  
 Uranium

**NTS**  
 86N/01-06

**Location**  
 110 km southwest of Kugluktuk

In October 2006, UNOR announced it had entered into an option agreement with Cameco Corporation on 190 uranium mineral claims staked by Cameco in 2006 and covering 208,600 ha in the western Hornby Bay Basin to the west of the Coppermine Property. To earn a 60 per cent interest, UNOR must incur exploration and development expenditures of \$3.0 million by March 31, 2010, of which a minimum of \$2.0 million must be incurred on or before June 30, 2008. UNOR is the operator on the Cameco Option, Coppermine, and Asiatic properties, subject to the guidance of a joint UNOR/Cameco Technical Committee and the Strategic Alliance Agreement between the parties covering the UNOR operated projects.



COPPERMINE RIVER<sup>1</sup>, UNAD<sup>2</sup>

**Operator, Owners**  
 UNOR Inc.<sup>1,2</sup>;  
 Adriana Resources Inc.<sup>2</sup>

**Commodity**  
 Uranium

**NTS**  
 86J/10, 86J/11, 86J/12,  
 86J/13, 86J/14, 86K/16,  
 86N/01, 86O/04

**Location**  
 100 km South-southwest  
 of Kugluktuk

The Coppermine River Property consists of two claim blocks referred to as the Coppermine Block and the East Block, with a total of 144 claims covering 125,000 ha in the Hornby Bay Basin. This basin offers unconformity type uranium deposit potential and is relatively under explored in relation to the Athabasca Basin. Potential for other uranium deposit types on the property include IOCG and vein type deposits. The structural setting of the property area is similar to that of Cameco's Eagle Point deposit of the Athabasca Basin. UNOR has discovered several uranium zones on the Coppermine River claims including Contact Lake, Wolf Creek, Bog, Hot Creek, and Alteration Zone Lake.

In 2006 UNOR drilled 10 additional holes on the southern panhandle of the claim block. These 10 holes, plus 17 historical drill holes by BP Minerals, all intersected uranium mineralization that occurs over an area of 800 x 200 m. All 10 holes had uranium mineralization in core with the best intersection in the first six holes being 0.12% U<sub>3</sub>O<sub>8</sub> across 9.1 m. Assaying results from the remaining four holes are pending. A ground magnetic survey and three lines of IP/resistivity were completed and will be used to

guide 2007 drilling.

The Hot Creek showing, numerous large sandstone boulders with uranium-copper mineralization over 1.5 km, was discovered in the north/central area of the claim block. The zone of interest is three kilometres wide and lies along the western margin of a major graben that displaces the Dismal Lake/Hornby Bay contact. This structural setting and style of mineralization is analogous to that of the Mountain Lake deposit located 40 km to the west. Hot Creek is a top priority for 2007 drilling.

Detailed mapping and ground magnetic surveys were completed over the Alteration Zone located in the southern panhandle of the claim block. Complex silicification and clay alteration within the Hornby Bay sandstone is controlled by a series of cross faults intersecting the southeastern marginal fault of a major graben. Two holes were drilled to test the zone at depth. The basal contact is approximately 800 m deep and multiple fault zones with clay-dravite alteration and anomalous uranium occur within the sandstone. Dravite, a boron-rich mineral, is found in many of the uranium deposits in the Athabasca Basin. The Alteration Zone will also be a top priority for 2007 drilling.

On the northwest corner of the company's Coppermine claim block, ground geophysical surveys outlined two well-defined airborne magnetic anomalies for kimberlitic targets. Results from the 2006 till sampling are pending.

The UNAD project covers 19,427 ha of land adjacent to the Coppermine River project and is a 50:50 joint venture project between UNOR and Adriana Resources. In 2006, the companies

confirmed high grade uranium mineralization (7.281% U<sub>3</sub>O<sub>8</sub>) from subcrop from the Tabb Lake area. Previous exploration work conducted in the late 1970's reported anomalous uranium mineralization in the basement rocks and overlying Hornby Bay sandstone.

DISMAL LAKE PROPERTY<sup>1</sup>;  
WEST DISMAL PROPERTY<sup>2</sup>

**Operator, Owners**  
 Triex Minerals Corporation<sup>1,2</sup>;  
 Pitchstone Exploration Ltd.<sup>1,2</sup>;  
 Ur-Energy Ltd.<sup>2</sup>

**Commodity**  
 Uranium

**NTS**  
 86N/05, 86N/06, 86N/11, 86N/12<sup>1</sup>;  
 86M/08<sup>2</sup>

**Location**  
 110-140 km west of Kugluktuk

Triex Minerals Corporation has a 50 per cent interest in seven exploration permits and 14 claims forming the Dismal Lake Property. The permits are located in both the Nunavut and Northwest Territories. Pitchstone Exploration Ltd. holds the remaining 50 per cent of the permits. The area was explored for uranium in the late 1970's and several uranium boulder and frost heave anomalies within sandstone were discovered 30 — 50 km to the south of the permit area. The area contains favourable lithology and structure required to host sandstone unconformity style uranium mineralization in a setting similar in nature to the Mountain Lake uranium deposit located approximately 70 km to the east.

Triex and Pitchstone entered into a joint venture with Ur-Energy on the West Dismal property in 2006. The claims cover part of an historic field of uranium



mineralized boulders located 40 km northwest of the Mountain Lake deposit. During 2006, the Joint Venture followed up on the GEOTEM survey flown in 2005 with 730 line-km of airborne radiometrics and 100 line-km of ground magnetics, each at 200 m line spacing, and 400 soil samples. Potential drill targets within the Dismal Lake sandstone were identified, and will be evaluated further in 2007.

HEPBURN -  
NORTH HEPBURN PROJECT

**Operator, Owners**  
 Uranium North Resources Corp.

**Commodity**  
 Uranium

**NTS**  
 86J, 86K

**Location**  
 On the NWT/NU border, 150 km  
 south-southwest of Kugluktuk

The Hepburn, North Hepburn project overlies segments of the Hornby Bay Basin. These are trans-border properties between Nunavut and NWT with the North Hepburn property within Nunavut. Diamonds North holds 50 per cent interest on five claims of the North Hepburn project. Six uranium occurrences with up to 0.82% U<sub>3</sub>O<sub>8</sub> have been previously identified. At BB Lake, lake sediments have returned uranium values ranging from 23.7 ppm to 115 ppm U<sub>3</sub>O<sub>8</sub>. This is reported as the highest known uranium concentration in a lake sediment sample in the region.

KENDALL RIVER

**Operator, Owners**  
 Triex Minerals Corp.;  
 Pitchstone Explorations Inc.;  
 Aramis Ventures Inc.

**Commodity**  
 Uranium

**NTS**  
 86N/01, 86N/02

**Location**  
 100 km southwest of Kugluktuk

Sandstone boulders in the Kendall River train are from the same unit of the Dismal Lakes Group that hosts the Mountain Lake Deposit. A total of 145 radioactive boulders form a tightly defined northeast-trending train 3,400 m long and up to 230 m wide. The boulders are angular to sub-angular and contain disseminated uranium oxide minerals with minor pyrite and chalcopyrite. A regional structure parallels the train immediately to the south. The boulders were discovered by regional exploration in the 1970s by Esso Resources Canada, but the property was not drill-tested.

In August 2006, Triex and Pitchstone acquired the Kendall River claims from Aramis Ventures, a private Alberta company. As operator, Triex completed 388 line-km of airborne radiometrics, 124 line-km of ground magnetics, and collected 1200 soil samples. From the 2006 results, the company is working to define follow-up targets for 2007 work.



**MOUNTAIN LAKE<sup>1</sup>;  
MOUNTAIN LAKE OPTION<sup>2</sup>**

**Operator, Owners**  
Triex Minerals Corporation<sup>1,2</sup>;  
Pitchstone Explorations Ltd.<sup>1,2</sup>;  
Ur-Energy Inc.<sup>2</sup>  
**Commodity**  
Uranium  
**NTS**  
86N/02, 86N/03, 86N/06, 86N/07  
**Location**  
100 km southwest of Kugluktuk

The Mountain Lake properties are located within the Hornby Bay Basin. Stratabound uranium mineralization is hosted within sandstone of the Proterozoic Dismal Lakes Group. Past workers completed 190 drill holes (approximately 22,000 m) on the project and defined the Mountain Lake uranium deposit. This deposit contains an inferred resource of 8.2 million pounds U<sub>3</sub>O<sub>8</sub> with an average grade of 0.23% U<sub>3</sub>O<sub>8</sub> contained in 1.6 million tonnes of rock. The depth of mineralization is between 28 and 136 m. The deposit is not fully delineated and the estimated resource does not include mineralization reported in 2006. An updated resource model is currently being developed using the 2006 drill results integrated with historical data. Triex and Pitchstone are 50:50 partners in the Mountain Lake property, with Triex as operator.

Triex completed 20 drill holes on the property in 2006. Results confirmed the uranium mineralization within the deposit, and extended it below Fran Lake. Grades of 0.1 to 0.3% U<sub>3</sub>O<sub>8</sub> over widths of one to 4.5 m define the main deposit, with an envelope of 0.03 to 0.1% U<sub>3</sub>O<sub>8</sub> over 10 – 30 m widths. Anomalous uranium

values were returned in drill core from testing the Jenny Lake area, northwest of the main deposit. This prospect is open to the north and west.

In 2006, Triex entered into an arrangement with Ur-Energy on 41 claims covering about 38,545 ha, herein referenced as the Mountain Lake option, that adjoin the eight claims hosting the Mountain Lake deposit.

**Gold, Precious Metals**

**COMMITTEE BAY**

**Operator, Owners**  
Committee Bay Resources Ltd.  
**Commodity**  
Gold  
**NTS**  
56J, 56K  
**Location**  
300 km north of Baker Lake

The Committee Bay Greenstone Belt is over 300 km long and is geologically comparable to the gold-producing greenstone belts of Red Lake, Timmins and Kirkland Lake. Committee Bay Resources holds greater than 360,000 ha of land with prospective geology and controls over 85 per cent of the belt.

In 2005, Committee Bay spent over \$9 million on exploration. This work included detailed grid work and ground magnetic surveying over high priority targets, and drill testing of the Raven and Three Bluffs zones. Significant mineralization was outlined at Raven, Three Bluffs, West Plains, Antler and Anuri, although the total number of zones with gold potential on the belt exceeds 60. A near surface high grade inferred mineral resource of 1.3 million tonnes grading 10.2 g/t Au for 417,000 oz has been defined by 49 drill

holes at Three Bluffs. Using a lower cut-off grade this inferred mineral resource is expanded to 5.1 million tonnes grading 4.0 g/t Au for 657,000 oz. About 85 per cent of these resources are within 120 m of surface and the bulk of the high grade gold mineralization is along a shallow plunging structure.

For 2006, Committee Bay budgeted \$3 million to follow up on 2005 results. Phase 1 of the program involved drilling (3,500 m) followed by a further Phase 2 drilling of high priority targets. Drilling at Anuri outlined a broad alteration zone (up to 20 m wide) and gold over a 400 m strike-length adjacent to a major structural zone. The alteration zone is geologically and geochemically similar to a high grade gold and silver-bearing boulder train discovered at Anuri in 2004. Drill core intersections in 2006 also contain highly anomalous silver, copper, bismuth and tungsten. 2007 drilling will expand upon this program and continue to search for higher grade zones within the Anuri trend.

The West Plains gold showing is in the southwest corner of the Committee Bay Greenstone belt approximately 65 km southwest of the Raven occurrence. Mineralization is hosted in sheared iron formation and localized within a flexure in the shear zone. 2006 drilling at West Plains confirmed a high grade gold zone that is open down-plunge and to depth and extends over 200 m along strike and to 80 m below surface. This zone also coincides with a strong EM anomaly that extends for eight km along strike. Drilling returned intersections of 13.14 g/t Au over 8.0 m, 19.65 g/t Au over 2.0 m and 8.39 g/t Au over 2.05 m. Further exploration and drilling are planned for 2007.



**COMMITTEE BAY NORTHEAST**

**Operator, Owners**  
Strongbow Exploration Inc.  
**Commodity**  
Gold  
**NTS**  
56J, 56K  
**Location**  
300 km north of Baker Lake

**GEORGE LAKE/GOOSE LAKE  
(BACK RIVER PROJECT)**

**Operator, Owners**  
Dundee Precious Metals Inc.  
**Commodity**  
Gold  
**NTS**  
76G/09, 76G/10, 76G/13, 76G/14  
**Location**  
100 km south of Bathurst Inlet

The Back River Joint Venture project is owned and operated by Dundee Precious Metals and is one of the larger gold

projects within Nunavut. The Back River deposits are quartz-vein hosted gold deposits found within Archean banded iron formation within greywacke units folded into an anticline, with the apex of the fold forming a hinge zone near surface.

The most important properties of the Back River area are the George Lake and Goose Lake deposits with combined indicated resources of 1.4 million oz Au and inferred resources of 600,000 oz Au. Gold mineralization occurs in both the high-grade fold hinge zone and greywackes within the fold core. Much of the gold occurs as fine grains on sulphide boundaries, although visible gold, generally as small (<1 mm) isolated specks, is common in clearly defined bands within the iron formation. Disseminated gold also occurs and associated minerals are arsenopyrite, pyrrhotite, pyrite, quartz and Fe-Mg-Al silicates.

Occurrences within the George Lake deposit area include Locale 1, Locale 2, Lone Cow, GH, Boot Lake, Boulder Pond, Needle Lake, Bath 1 claim and the Slave occurrences. Five showings comprise the Goose Lake deposit — Llama Lake, Round Pond, Goose Neck, Goose South (or Goose Lake showing) and Goose Tail.

Gold exploration in this area began in 1982 and various companies have worked the deposits. Early 2005, Dundee purchased the option to earn a 60 per cent interest in the project and by year-end had invested \$20.8 million. Mid-2006, the company purchased a 100 per cent interest and this year conducted an extensive exploration program spending over \$17 million. This work was conducted to delineate extensions of

previously defined mineralized zones at the two major deposits and to conduct further exploratory work over targets at Boulder Pond, Boot Lake and on the George Lake claim groups. Seventy-nine holes (24,030 m) in both step-out and infill drilling were completed. 7546 line-kilometres of airborne geophysics was conducted, bringing to the total of geophysical data collected in 2005 and 2006 to 14,1045 line-km. Several EM and magnetic anomalies have been defined which are being integrated and interpreted with geological mapping, structural studies and review of historical sampling. Dundee is also collecting environmental baseline data (hydrological, meteorological and fish studies, bathymetry) and metallurgical testwork is being conducted.

**HACKETT RIVER**

**Operator, Owners**  
Sabina Silver Corporation  
**Commodities**  
Silver, Zinc, Gold, Copper, Lead  
**NTS**  
76F/15, 76F/16  
**Location**  
90 km South-southwest  
of Bathurst Inlet

The Hackett River silver-zinc property hosts at least eight known massive sulphide occurrences; of these the most significant are the East Cleaver, Boot Lake and Main Zone (also called “A” Zone) with other significant showings being the Knob Hill Zone, Downie, Finger Lake and Jo Zone. The property covers nine mining leases with an aggregate area of 12,250 ha. Hackett River is one of the largest undeveloped massive sulphide deposits in Canada.





Sabina recently expanded the indicated resources to be 205 million oz silver and 4.3 billion pounds Zn with 305 million pounds Cu, 644 million pounds Pb and 433,000 oz Au, all at above a 5.0 oz/t Ag-equivalent grade cut-off. This new resource estimate is based on 300 drill holes with an aggregate length of 63,745 m. The company has also retained Wardrop Engineering to develop a NI 43-101 compliant preliminary economic assessment based on the strength of these new estimates.

Sabina had significant results from their 2006 drill program. The exploration highlight was the partial delineation of a new discovery called the “Boot Lake Deep” trough. The structure contains true width drill intercepts up to 50 m wide grading 12% Zn and 300 g/t Ag. 17,293 m (53 holes) were drilled as both infill and stepout work as all three main deposits remain open. In a recent deep stepout hole at Boot Lake, assays include 42.95 m of 8.35% Zn and 180.5 g/t Ag with a second hole containing 49.85 m of 9.18% Zn and 141.6 g/t Ag.

All deposits and showings are located at approximately the same stratigraphic interval and occur over a 6 km-long strike length. The East Cleaver, Boot Lake and Main Zone deposits are hosted within a Mineral Horizon Member characterized by the presence of marble and/or calc-silicate, chert and variable quantities of sulphides. Mineralization in each of the three massive sulphide deposits consists primarily of coarse grained pyrite, pyrrhotite, sphalerite, chalcopyrite, galena and rare tetrahedrite and trace arsenopyrite. Locally, mineral zoning is well developed, both laterally and vertically. The Boot Lake, Finger Lake, Main Zone and Jo

Zone deposits and showings are hosted within a southward dipping stratigraphic sequence. The Knob Hill Zone and East Cleaver deposit are found within an overturned anticline that plunges steeply to the west.

Silver Wheaton became a major shareholder of Sabina Silver in December 2006, stepping in to invest \$12.87 million in the company. Following closure of the financing, Silver Wheaton will own 14.2 per cent of Sabina, and can boost its interest to 19.9 per cent if all warrants were to be exercised. Additionally, Silver Wheaton acquires the right of first refusal on the sale of silver production from any of Sabina’s projects, and the right to maintain its percentage interest by participating in any future financings.

**HOOD RIVER**

**Operator, Owners**  
Golden River Resources

**Commodity**  
Gold

**NTS**  
76L/13

**Location**  
100 km north of the Jericho diamond mine

Golden River Resources has an agreement with Tahera Diamond Corporation to explore for gold and base metals on the Tahera ground in the Contwoyto Lake and Hood River area. Several auriferous iron formations are found on these properties. Golden River also has full access to Tahera’s extensive geophysical and geochemical databases on this ground. Several areas within the properties returned favourable gold up to 33 g/t from sampling by the company in 2004. The Penthouse Zone was the main

focus of 2006 work. Mineralization is associated with silicified shears which can be traced to 200-250 m within a three kilometres zone of sheared and brecciated siliceous basalts and sediments.

**HOPE BAY PROJECT (DORIS NORTH, MADRID, BOSTON)**

**Operator, Owners**  
Miramar Mining Corporation

**Commodity**  
Gold

**NTS**  
76O/09, 76O/10, 76O/15, 76O/16, 77A/02, 77A/03, 77A/06, 77A/07, 77A/10

**Location**  
130 km southwest of Cambridge Bay

The Hope Bay Gold Project covers most of the entire Hope Bay greenstone belt and consists of mineral claims, mineral leases and Inuit Owned Land (IOL) Exploration Agreements with a combined total area of approximately 110,151 ha. The belt was again the focus of the largest exploration project in Nunavut in 2006 with Miramar Mining Corporation spending over \$31 million.

The belt, 80 km long in a north-south direction and seven to 20 km wide, is in the northeast portion of the Slave Structural Province. The belt and its deposits are classified as typical Archean lode-gold-type, comparable to the prolific Abitibi Belt of Central Canada. These belts are typically isoclinally folded, contain belt-parallel shear zones and the deposits are characteristically associated with large-scale regional structures.

Significant gold deposits defined on this property include Doris North, Madrid and Boston. All deposits and showings occur within or in proximity to a major

structure or structural zone. Current estimates are: total indicated resources of 17,834,00 tonnes at 6.0 g/t Au (3.4 M oz Au) and inferred resources of 34,197,000 tonnes at 4.9 g/t Au (5.4 M oz Au).

The Doris deposits (Doris North, Doris Central, Doris Connector) occur at an inferred inflexion in the Hope Bay structural break. Gold occurs within a steeply-dipping quartz vein system in folded and metamorphosed pillow basalts. At the north end of the system (Doris North), the veins are folded into a doubly plunging anticline with the high-grade hinge zone lying close to the surface. Measured and indicated resources are 1.169 million tonnes at 19.3 g/t Au (726,000 contained ounces) and inferred resources are 1.634 million tonnes at 14.5 g/t. (for 766,000 contained ounces). The Doris North project is currently in the permitting process with a mine scheduled to open mid-2008 with a two-year mine-life.

The Madrid deposit area hosts the Rand, Naartok (Naartok East, Naartok West) and Suluk showings. The Madrid Trend corridor hosts the Rand Spur, Marianas, Patch 7 and Patch 14 zones. Gold mineralization is structurally controlled by a complex, large-scale zone traced for 11 km of intense strain and alteration termed the Deformation Zone. Most resources lie within the northern 2 km of this zone. The 2006 drilling, infill and expansion, indicates the potential for much larger-scale operations than previously recognized.

The Boston deposit, one of the largest known gold resources in the belt, is located near the south end of the belt and associated with a flexure in the Hope Bay

structural break. A new zone, BN, with a style of mineralization not previously recognized at Boston, was discovered in 2006 north of known Boston resources (B2, B3, B4). Thirteen holes (3,785 m) were drilled at BN and the pending results will help define a second phase of production following the proposed Doris North Project. The current Boston resource, not including 2006 drilling, is 2,312,000 tonnes of 10.7 g/t Au indicated and 2,431,000 tonnes of 9.5 g/t Au inferred.

**LACH GOLD-COPPER PROPERTY**

**Operator, Owners**  
Kaminak Gold Corporation

**Commodities**  
Gold, Copper, Bismuth

**NTS**  
76N/06

**Location**  
100 km northwest of Bathurst Inlet

Kaminak Gold Corporation owns 100 per cent of three prospecting permits totalling 44,000 ha that are highly prospective for hosting fault-related gold mineralization. The property hosts over 30 individual untested gold occurrences with minimum assays of at least 10.0 g/t Au. It straddles the Bathurst Fault Zone, a major zone that separates Archean greenstones from younger Proterozoic sedimentary rocks and is traceable for over 500 km. Gold occurrences are spatially related to the fault zone and hosted in brecciated quartz and iron-carbonate rich veins which also carry arsenopyrite, galena, chalcopyrite, pyrite, sphalerite and bornite.

Previous government mapping initiatives have returned encouraging gold assays in this area; 143.6 g/t (Patton Lake), 57.0 g/t (Gela Lake), 34.4 g/t

(Startling Lake) and 23.5 g/t (Arnaud Lake). Visible gold has been noted in quartz veins from each of these occurrences. In 2005, Kaminak discovered additional anomalous mineralization within the Gela Lake showing with a high of 5.21 g/t Au obtained with 5.27% Cu and 0.18% Bi. This new polymetallic showing, the Gela Lake Copper-Bismuth Zone, represents a newly-defined gold target in the North Slave Region. Kaminak planned a 2006 follow-up program to include geophysical surveys and reconnaissance-scale prospecting designed to generate drill targets.

**LUPIN**

**Operator, Owners**  
Wolfden Resources Inc.

**Commodity**  
Gold

**NTS**  
76E/11, 76E/14

**Location**  
300 km south of Kugluktuk

Kinross acquired the Lupin underground gold mine from Echo Bay Mines in 2003 and operated it until the closure in 2005. Gold in iron formation was discovered in 1961. The rocks were repeatedly deformed and mine site stratigraphy consisted of two steeply-plunging, steeply-dipping anticlines separated by a syncline. Three primary ore zones were the West (west limb of the western anticline), Central and East zones (west and east limbs of the syncline). Two other ore bodies, McPherson 1 and 2, occurred in different iron formation lenses, several dozen metres west of the West Zone. At the time of mine closure in 2005, Lupin had produced over 3.37 million oz of gold at an average of 0.259 oz/ton Au.



Wolfden became the owner of Lupin in 2006 subject to a one per cent Net Smelter Return Royalty payable to Kinross. The company is currently completing an assessment of the mine. Following this, Wolfden intends to begin an underground drill program to define the resources and complete a study regarding the potential to re-start the operation in 2007.

**NEEDLE LAKE GOLD, BR GOLD**

**Operator, Owners**  
Kaminak Gold Corporation

**Commodity**  
Gold

**NTS**  
76G/03

**Location**  
Approximately 90 km south of George Lake

Kaminak Gold Corporation owns 100 per cent of the Needle Lake Property which consists of two claims (2066 ha) that are host to numerous high-grade surface gold showings. This property includes showings of the Needle, Jed, Wolverine, Feline and Erin Zones, and is strategically located 70 km southeast of the Dundee’s Back River Project and 220 km south of Miramar’s Hope Bay project. Historical exploration (1983-1989) discovered five gold occurrences within the folded iron formation. Grab samples assayed up to 23.59 g /t Au across 2.11 m. A total of 13 holes (1,287 m) were drilled. Results at the Needle Zone include 9.46 g/t Au over 3.43 m of core length and 11.58 g/t Au over 2.02 m. Further drilling is needed to define this prospective gold zone. A 530 line-km airborne magnetic/electromagnetic survey designed to determine the geophysical

properties of the known zones and map the extent of important host rocks (e.g. banded iron formation) was flown over the property.

The BR Property consists of four claim blocks (BR 1, 2, 3 and 9) totalling 4,180 ha. Iron formation has been mapped intermittently over a 3-km strike-length. Based on historical mapping and aeromagnetic work, this belt of iron formations is complexly folded and can be traced along strike for over 23 km. This property has potential to host base metal mineralization.

**REGAN LAKE**

**Operator, Owners**  
Strongbow Exploration Inc.

**Commodity**  
Gold

**NTS**  
76G/04

**Location**  
Approximately 80 km southwest of George Lake

Strongbow’s Regan Lake gold property consists of 9,860 ha on IOL in the Back River area. Past exploration has focused on two occurrences of folded sulphidic iron formation in the south-eastern part of the property. The property hosts over 19 km of iron formation within the same sedimentary rocks as those at George and Goose lakes gold deposits. Mapping and rock and till sampling in 2005 produced a revised structural interpretation for the area. Geochemical surveys confirmed gold in iron formation horizons within the property with 48 of 205 rock grab samples returning greater than 1 g/t Au with three highest values of 25.8 g/t Au, 29.5 g/t Au, and 26.2

g/t Au. There was no work on the property in 2006 but Strongbow is evaluating plans for the 2007 program.

**SILVERTIP**

**Operator, Owners**  
Strongbow Exploration

**Commodities**  
Gold, Silver, Lead, Zinc

**NTS**  
76B/13, 76C/16

**Location**  
120 km South-southwest of George Lake

The Silvertip project covers over 15 km of prospective volcanic stratigraphy along the western flank of the Back River Intrusive Complex. Strongbow maintains a 100 per cent interest in six mineral claims (6198 ha) which include the Minou gold/silver showing and maintains the right to earn a 100 per cent interest in a seventh mineral claim (1033 ha) that covers the Pale gold/silver showing.

Strongbow acquired the Silvertip property in 2006 after conducting an evaluation of the property, partly because of significant polymetallic concentrations reported by Cominco in the 1970’s. The 2006 program confirmed the nature of mineralization at the showings and established that the currently known mineralized horizons have significant potential to identify new target areas.

Mineralization at the Pale showing consists of quartz veining and locally significant sulphide mineralization, hosted within a thick, north-westerly-striking sequence of variably silicified and carbonate altered felsic volcanic rocks. The mineralization is in a structurally complex northwesterly-plunging zone



of high assay values. This drilling did not test the depth extent of this zone and this is a priority for Strongbow. Surface sampling confirmed mineralization with 11 of 19 grab samples returning high grade precious and base metal values ranging from 1.98 to 15.7 g/t Au, 380 to 6,162 g/t Ag, 0.55 to 5.5% Pb and 1.18 to 18.0% Zn.

The Minou showings, located approximately 2.5 km southeast of the Pale showings, are in altered felsic pyroclastic rocks. Previous mapping and sampling by Cominco returned values up to 17.8 g/t Au, 76 g/t Ag, 3.1% Pb and 24.7% Zn. Strongbow conducted limited prospecting of this showing and seven of 12 grab samples returned values of 1.86 g/t to 14.6 g/t Au and 8.8 g/t to 71.8 g/t Ag, as well as anomalous values of Pb and Zn.

**TWIN PEAKS, CHICAGO**

**Operator, Owners**  
Maximus Ventures Ltd.;  
Miramar Mining Corporation

**Commodity**  
Gold

**NTS**  
76O/10, 76O/15

**Location**  
160 km southwest of Cambridge Bay

Maximus Ventures Ltd. had an original option on the Eastern Contact and Twin Peaks target areas in Miramar Mining Corporation’s Hope Bay Belt with Miramar as the operator. The Twin Peaks showing at the north end of the belt is hosted by argillaceous sediments and conglomerates that overlie volcanics and syenitic intrusives adjacent to a major lineament. Twin Peaks has been interpreted as having the potential to host similar

large-scale gold deposits at or near the volcanic-sedimentary contact.

The Eastern Contact-Twin Peaks agreement was amended March, 2006 at which time Maximus dropped the Eastern Contact area and added the Chicago area. The option property now comprises eight Crown claims, three Crown leases, three pending Crown leases and portions of two NTI Exploration Agreements, totalling 11,147 ha. Required expenditures remain at \$7.5 million, now to be incurred by April 30, 2009. Geophysical surveys (magnetic and horizontal loop EM) along with mapping and 3,000 m of drilling was planned for various portions of the properties during 2006.

**Nickel - Copper – PGE**

**MIE**

**Operator, Owners**  
Adriana Resources

**Commodities**  
Nickel, Copper, Cobalt,  
Platinum, Palladium, Gold

**NTS**  
86J/11, 86J/14, 86O/03

**Location**  
90 km south of Kugluktuk

Adriana added to their land holdings on the Mackenzie Igneous Event (MIE) project over the Muskox Intrusion. The Muskox Intrusion is a layered mafic intrusion associated with the Coppermine Volcanics and the Mackenzie Dyke Swarm, which together comprise the Mackenzie Igneous Event. The project covers more than 630 km<sup>2</sup> and is comprised of two properties, McGregor Lake and All Night Lake. 2006 exploration consisted of mapping, prospecting and sampling

to follow-up on anomalies identified from the 2005 airborne electromagnetic survey.

The economic potential of the Muskox Intrusion was first recognized in the 1950’s by Inco Limited exploring for native copper in the Coppermine area. Since then, various companies have spent more than \$20 million on exploration. High-grade copper, nickel and PGE occurrences were historically sampled along the walls of the Intrusion but targets have not been drilled.

The McGregor Lake Property is centred over part of the Intrusion where highly anomalous Ni-Cu-PGE mineralization occurs in the walls. Additionally, the southern part of the property is situated over a major northwest-trending structural corridor which intersects the base of the Intrusion. Adriana considers the base to represent a corridor of opportunity for massive sulphide accumulations of copper, nickel, platinum and palladium, similar to the Russian Norilsk deposit. Twenty line-kilometres of data were collected by a SQUID PEM geophysical survey and outlined a zone of high conductivity in-line with the interpreted “keel” of the Intrusion. Modelling of the data is underway in preparation for a 2007 drill program.

The All Night Lake Property covers the layered series and roof zone of the Intrusion and is being explored for chromitite-PGE reef-style mineralization, similar to the reefs of the South African Bushveld complex. This zone has not been explored thoroughly in the past, partly because of poor outcrop exposure. Sixteen line-kilometres of SQUID PEM data and a further 1,200 line-km of airborne geophysics were collected on the property with results and interpretation pending.



# Kivalliq Region

The Kivalliq District includes the eastern mainland, Southampton Island and several smaller islands. The communities of Rankin Inlet, Baker Lake, and Arviat are often used staging points for exploration projects. Scheduled and charter air services, expediting services, and other supporting businesses are available in these centres.

Past producing mines in the Kivalliq were the North Rankin Nickel Mine at Rankin Inlet and the Cullaton/Shear Lake gold mine north of Nueltin Lake.

More than 45 exploration projects were tracked in 2006, targeting a wide range of commodities: gold, diamonds, Ni-Cu-PGE, uranium, and base metals. Current exploration targets include lode

and iron formation hosted gold, epithermal gold, quartz pebble conglomerate hosted gold, mafic - ultramafic Ni-Cu-PGE deposits, diamondiferous kimberlites, unconformity associated uranium, iron oxide-copper-gold (IOCG), and volcanogenic massive sulphide mineralization.

Exploration for uranium increased significantly in 2006. The majority of the new land acquisitions within Nunavut in 2006 target geological settings favourable for uranium mineralization in the Kivalliq. There were field programs involving airborne geophysics, diamond drilling, mapping, prospecting, and community consultations.

Gold and diamonds were the leading

commodities with strong base metal and uranium prices fuelling increased exploration interest in Nunavut.

The most advanced project in the Kivalliq is Cumberland Resources' Meadowbank Gold Project. In November 2006, the Minister of Indian Affairs and Northern Development accepted the Nunavut Impact Review Board's (NIRB) recommendation that development of the Meadowbank gold project should proceed. The project certificate was issued in December 2006



## Base Metals

**GREYHOUND LAKE**

**Operator, Owners**  
Intrepid Mines Ltd.;  
Aura Silver Resources Inc.

**Commodities**  
Copper, Lead, Zinc, Silver

**NTS**  
66A/08

**Location**  
Approximately 50 km from Baker Lake

The Greyhound Property is a high grade silver and base metal prospect located in the central Churchill region of Nunavut. The prospective area contains a mineralized horizon within an Archean greenstone belt where samples of bedded sulphide-mineralized boulders have returned assays of 0.48% Pb, 0.1% Zn, 0.33% Cu, 1,632 g/t Ag (47.6 ounces per ton) and 0.58% Pb, 1.41% Zn, 0.59% Cu , 3,400 g/t Ag (99.16 ounces per tonne). The horizon that hosts these high metal values is poorly exposed as intermittent sub-crop rubble and sparse outcrop along a strike length in excess of 12 km.

Aura Silver initiated its first phase of exploration on the property in 2006, contracting a MEGATEM airborne survey with Fugro Airborne Surveys Ltd. The property is now under option to Intrepid Mines Ltd.



**KEEWATIN PROJECT**

**Operator, Owners**  
BHP Billiton;  
Tri Origin Exploration Ltd.

**Commodities**  
Copper, Gold, Silver, Lead, Zinc

**NTS**  
65A/05, 06, 11, 12

**Location**  
Approximately 120 km southwest of Arviat

The Keewatin Project lies in a sedimentary basin of Proterozoic age, surrounded by Archean rocks. The basin consists of siliciclastic rocks of the Upper and Lower Hurwitz Group, with iron formation rimming much of the basin.

Tri Origin completed a program of surface prospecting and sampling, VLF-EM and reconnaissance scintillometer geophysical surveying and preliminary drilling to investigate previously defined base metal and gold targets. Uranium mineralization was identified during the program, occurring in 24 boulders, some within the northern parts of the property that were prospected for copper and zinc (KW-07 target). Grab samples from two of these boulders located 60 m apart, returned assays of 8,500 ppm and 3,380 ppm uranium. These boulders were found 30 m from a strong airborne EM conductor that has not been drilled.

At a gold target located eight kilometres southwest of this area, a VLF-EM anomaly was delineated over a length of 1,200 m. Previously reported values of up to 18.7 and 4.8 g/t Au from grab samples of boulders and outcrop, respectively, are associated with it. Drill hole EL-06-7 was drilled to a depth of 40 m to test the VLF-EM anomaly at the head of the gold-bearing boulder train. The hole intersected four zones, each about 1.6 m in length, of quartz-carbonate veined rock containing one to two per cent pyrrhotite and minor amounts of chalcopyrite. Fracture surfaces were also plated with pyrite. These prospective zones within the hole have many similarities to the mineralization observed in gold-bearing boulders at surface, however no significant gold values were returned from assaying.

Copper-bearing float was encountered at several of target areas. The best copper analysis was from a grab sample of a boulder at target KW-04 which assayed 1.49% Cu, 21 g/t Ag and 0.33 g/t Au.



# Diamonds

**AUMALUUKTUUK PROJECT**

**Operator, Owners**  
Stornoway Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
65P/09, 10, 15, 16

**Location**  
50 km south of Baker Lake

The Aumaluuktuuk Project consists of 60 claim blocks covering 55,200 ha. Stornoway maintains a 100 per cent interest in the property and is the operator.

An airborne geophysical survey was flown on the property in 2005. The anomalous results from the survey were ground checked and locally till sampled in 2006.

**CHURCHILL DIAMOND PROJECT**

**Operator, Owners**  
Shear Minerals Ltd.;  
Stornoway Diamond Corporation;  
BHP Billiton

**Commodity**  
Damonds

**NTS**  
55N, O, J

**Location**  
70 km north of Rankin Inlet

The Churchill Diamond Project is comprised of mineral rights to more than 3.64 million hectares located between the communities of Rankin Inlet and Chesterfield Inlet. As operator, Shear conducted a multi-season program in 2006. It consisted of a spring drilling and ground geophysics program: eight drill holes and 145 line-km of ground geophysical surveys. Two new kimberlites



were discovered. A summer program followed, with 30 more drill holes intersecting five new kimberlites, 6715 line-km of ground geophysics, prospecting and till sampling.

Till sample PST-03, collected late in the 2005 field season returned 162 micro-diamonds with kimberlite fragments in the oversize fraction. A ground magnetic survey, followed-up with drill testing in 2006 confirmed a vertically dipping dike over a 150 m length. From 22.8 kg drill core sample 303 diamonds were recovered. The discontinuous magnetic signature extends over 500 m, trending at 040°.

The Notch kimberlite dike was discovered by prospecting along a magnetic feature. It has a similar discontinuous magnetic signature extending more than three kilometres at 015-020°. A mini-bulk sample of 6.1 tonnes was collected, with 836 diamonds recovered.

The Jigsaw kimberlite dike is east-west trending, and has the highest G10 abundancies in its associated mineral train. Prospecting along the mineral train resulted in its discovery. It has a thin discontinuous magnetic signature over one kilometre long. Based on the pits excavated for the min-bulk sample the

dike is about 1.5 m wide with a vertical dip. The mini-bulk sample weighed 5.8 tonnes, with results expected early 2007. 157 diamonds were recovered from a 44.35 kg grab sample.

A magnetic signature greater than six kilometres long marks the Kahuna dike. It is subtle high response, trending 035°. It was drill tested in three locations along 4.5 km of strike length. Drill hole KD-26A intersected an 11.4 m interval of coarse grained highly macrocrystic pyrope-bearing kimberlite. This hole was drilled at a -70° dip across the kimberlite that is interpreted as a four metre-wide vertical dyke. In order to test the northern and southern extensions of the Kahuna trend, additional holes were drilled two kilometres to the south (KD-25) and 2.5 km to the north (KD-32/32a) of the main Kahuna dyke; both locations intersected macrocrystic kimberlite. Samples were collected from two surface pits, total weight 3.6 tonnes. Results are expected in early 2007.

During the summer 850 follow-up till samples were collected and an on-site processing and observation lab was established to expedite indicator mineral determinations. Prospecting located

four new kimberlite outcrops and over 30 locations with kimberlite float

Thirteen high interest G10 indicator mineral dispersion trains remain unsourced in the Josephine Corridor and to date, 43 kimberlites have been identified on the property. Two kimberlite types have now been recognized. Type A is characterized by strong magnetic response, fine grained with dominantly magmatic textures low indicator mineral abundancies (rare garnet but lots of ilmenite), poor mineral chemistry and high geotherm, with generally a low diamond carrying capacity. Type B has a subtle magnetic response, is medium grained, with two generations of olivine macrocrysts, high indicator mineral counts (common pyrope garnets and less ilmenite) and cold geotherm. This type has a moderate to high diamond carrying capacity. The four dikes discovered in 2006 are Type B kimberlites.

**CHURCHILL WEST DIAMOND PROJECT**

**Operator, Owners**  
International Samuel  
Exploration Corp.;  
Shear Minerals Ltd.;  
Stornoway Diamond Corporation;  
BHP Billiton

**Commodity**  
Diamonds

**NTS**  
55M, N

**Location**  
75 km northwest of Rankin Inlet

This 208,016 ha land package is situated immediately west of the Churchill Property, with Shear as the operator. Two kimberlites have been identified on the property to date. Follow-up till sampling was conducted in 2006 and results are pending.

**HYDE PROJECT**

**Operator, Owners**  
Stornoway Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
55D/10, 11, 14

**Location**  
100 km southwest of Arviat

The Hyde Project consists of eight permits covering 151,200 ha in south central Nunavut. A geophysical survey was flown on the property in 2005 and resulted in numerous anomalies followed up in 2006 by ground checks and till sampling. Stornoway maintains a 100 per cent interest in the project.

**KMD PROJECT**

**Operator, Owners**  
Ripple Lake Diamonds Inc.

**Commodity**  
Diamonds

**NTS**  
55M/09, M/16, 55N/12, N/13

**Location**  
130 km northwest of Rankin Inlet

The Property is located within the northern Hearne domain of the Western Churchill Province. It consists of Archean rocks of the Hearne Craton and overlying supracrustal rocks are intensely reworked during the 1.8-1.9 Ga Trans Hudson Orogen. The Thirsty Lake minette dyke occurs near the southeast portion of the claim area.

Ripple Lake Diamonds has completed the mineralogical analysis of 752 samples collected within the KMD property/Brown Lake area in 2005. Kimberlite indicator minerals (pyrope, chrome spinel, chrome-diopside and olivine) were found in 156 of the submitted samples. Pyrope predominates

sharply (more than 4400 grains were found in 127 samples), whereas chrome-spinel, chrome-diopside and olivine occur in amounts of single grains.

Within some local areas, pyrope anomalies are associated with geophysical (magnetic and electromagnetic) anomalies distinguished from the 2005 helicopter-born airborne EM/Mag and resistivity survey completed by Fugro. Further compilation and interpretation of the results is on-going.

**NANUQ PROJECT**

**Operator, Owners**  
Peregrine Diamonds Ltd.

**Commodity**  
Diamonds

**NTS**  
56 G

**Location**  
250 km northeast of Baker Lake

The property is underlain predominantly by undifferentiated granitic and gneissic rocks of Archean age and minor granulite-facies likely of Paleoproterozoic age. A greenstone belt, possibly correlative with Archean Prince Albert and Woodburn Lake groups, occurs in the central part of the property and can be traced on aeromagnetic maps over 70 km.

Paleoproterozoic (ca. 1.8 Ga) calc-alkaline plutonic rocks of the Ford Lake batholith occur in the northernmost part of the property. The near-vertical Wager Bay shear zone cuts the northern part of the property in an east-west direction and displays dextral shear sense indicators. Follow-up till sampling was completed in 2006. Results are pending. Ground magnetic surveys were undertaken over select areas to prioritize possible drill targets.

BHP maintains an option in the project.



## NANUQ NORTH PROPERTY

**Operator, Owners**  
Dunsmuir Ventures Ltd.;  
Indicator Minerals Inc.

**Commodity**  
Diamonds

**NTS**  
56H/02, 03, 06, 07

**Location**  
300 km northeast of Baker Lake

The Nanuq North Property is comprised of more than 32,780 ha of mineral claims located adjacent to the northern boundary of the Nanuq Project. The claims were staked to capture the potential source(s) of one of two kimberlite indicator mineral trains with diamond inclusion chemistry identified by Dunsmuir between 2001 and 2004. Several samples yielded pyrope garnets with kelyphite rims and one sample yielded a pyrope garnet with a kimberlite mantle, indicating a close proximity to source. The project was not active in 2006 pending resolution on land tenure issues.

## PITZ LAKE

**Operator, Owners**  
Kennecott Canada Ltd.

**Commodity**  
Diamonds

**NTS**  
65P/15, 66A/2

**Location**  
40 km south of Baker Lake

Kennecott holds 14 claims in the Pitz Lake area. The company submitted the requisite applications and supporting documentation to obtain a Land Use Permit and Water License for a prospecting, till sampling, and drill program on the



Pitz Lake property. Permits were issued in late 2005. To date, no drilling has been reported.

## QILALUGAQ PROJECT

**Operator, Owners**  
Stornoway Diamond Corporation;  
BHP Billiton

**Commodity**  
Diamonds

**NTS**  
46 L, M

**Location**  
10 km north of Repulse Bay,  
extending across the Rae Isthmus

In July 2006, Stornoway Diamonds announced plans to potentially earn a 50 per cent interest in the 416,000 ha Qilalugaq Property from BHP Billiton subject to certain expenditure requirements. Prior to July 2006, 11 kimberlites had been discovered by BHP Billiton.

Stornoway conducted a three week reconnaissance field program in 2006. It focussed on resolving some outstanding quaternary issues, infill till sampling on unsourced indicator mineral trains, ground geophysics on seven grids over known kimberlite bodies, prospecting, and collection on mini-bulk samples from known kimberlites.

Stornoway collected a 200 kg sample for caustic fusion and mineral indicator analysis and 4.2 tonne sample for dense media separation (DMS) analysis from the A28 kimberlite, part of the Q1-4 complex (Qilalugaq 1, 2, 3, and 4 pipes which coalesce to form a body with an approximate area of 14 ha), identified by BHP Billiton. While collecting the larger kimberlite samples, mantle xenoliths in the cobble size range were recovered.

In 2006, 469 till samples were collected. Additional kimberlite float was found outside of known bodies. Prospecting resulted in the discovery of two new kimberlite dikes, Naujaat 1 and 2. These kimberlites represent two separate parallel linear structures and have been traced at surface over strike lengths of approximately 3000 m and 600 m, and average 4.5 m and 2.3 m in width, respectively. A 200 kg sample of Naujaat 1 was collected for microdiamond determination by caustic fusion analysis and a further 950 kg of material for macro-diamond extraction by DMS. Samples of Naujaat 2 were also extracted for microdiamond analysis. Results are pending.

# Energy Sources

## ABERDEEN

**Operator, Owners**  
Cameco Corp.;  
De Beers Canada Inc.

**Commodity**  
Uranium

**NTS**  
66A and B

**Location**  
120 km West-northwest of Baker Lake

Cameco entered into an agreement to explore 14 prospecting permits held by De Beers Canada in 2005. In 2006, Cameco completed detailed and regional scale ground traverses, mapping, prospecting and sampling for petrography and geochemistry studies.

Through the integration of bedrock structures with magnetics, and EM signatures, targets were identified for follow-up prospecting. Planning is underway for the 2007 field season, including the conversion of some of the prospecting permits into mineral claims.

## AMER, AMER LAKE, TASIQ, SOUTH BAKER, AND KAZAN

**Operator, Owners**  
Uranium North Resources Corp.

**Commodity**  
Uranium

**NTS**  
66H/7, 9, 10

**Location**  
140 km North-northwest  
of Baker Lake

After review of exploration data and historical data, Diamonds North determined approximately 1.6 million ha of its Nunavut land holdings had a

strong potential for uranium. These holdings were transferred into a new company Uranium North. Five properties occur in the Kivalliq: Amer, Amer Lake, Tasiq, South Baker and Kazan.

The Amer Lake property is the most advanced prospect, and comprises four prospecting permits, issued February 2006. Historical work identified uranium mineralization in outcrop, drill core, and boulders at the Main, Faucon, Horned Lake, Split Lake, Uranerz Grid 1 and Showing B locations. Work is planned for 2007.

## BAKER BASIN

**Operator, Owners**  
Pacific Ridge Exploration Ltd.;  
Kaminak Gold Corporation

**Commodity**  
Uranium

**NTS**  
55M/10-15

**Location**  
60 km southeast of Baker Lake

Pacific Ridge Exploration (operator) and partner Kaminak Gold Corporation hold 206,400 ha along the southern edge of

the Baker Lake Basin. The 2006 program included community consultations, prospecting, sampling, and drilling.

The 694 Zone consists of fracture controlled uranium mineralization in basement gneissic rocks. Six mineralized north-south fracture arrays have been mapped, with grab samples of frost heaved bedrock assaying up to 16.4%  $U_3O_8$ . Drilling confirmed the mineralized fractures continue at depth, but are narrow with variable uranium grade.

Drilling at the historically known KZ zone targeted the depth extension of uranium mineralization associated with silicified and hematite altered sandstone within and adjacent to a structurally controlled diking system. Three holes intersected the mineralized structure with uranium grades of 0.56%  $U_3O_8$  over 5.5 m, 0.50%  $U_3O_8$  over 2 m, and 0.27%  $U_3O_8$  over 5.2 m.

The Lucky 7 is a new discovery, a uranium mineralization occurring in bleached Kazan sandstone associated with a northerly trending structure, coincident with a 100–200 m wide by 500 m long radiometric anomaly. Chip





sampling and channel sampling returned values of 0.27% U<sub>3</sub>O<sub>8</sub> over 3.9 m and 0.19% U<sub>3</sub>O<sub>8</sub> over 3.1 m. Drill core samples returned values of 0.14% U<sub>3</sub>O<sub>8</sub> over 1.6 m and 0.32% U<sub>3</sub>O<sub>8</sub> over 3.4 m in sandstone.

Four kilometres northeast of Lucky 7, the '7-1' zone has been outlined by a 300 m long and 100 m wide grid-controlled radiometric anomaly. Frost heaved mineralized sandstone boulders in a north-south trend occur within the radiometric anomaly. Assays of the mineralized boulders range from 0.81% to 1.83% U<sub>3</sub>O<sub>8</sub>, average 1.29% U<sub>3</sub>O<sub>8</sub>. Uranium mineralization appears as disseminated blebs and thin bedding parallel black seams of pitchblende within coarse grained Kazan sandstone. Additional work is planned for 2007.

**BAKER PROPERTY**

**Operator, Owners**  
Majescor Resources Inc.;  
De Beers Canada Inc.;  
Uranium World Energy Inc.

**Commodities**  
Uranium, Diamonds

**NTS**  
65O, P, 66A

**Location**  
50 km to 140 km west of Baker Lake

The Baker Lake uranium project consists of two continuous blocks totaling 19 owned by De Beers Canada Exploration Inc. Majescor has an option to earn up to an 80 per cent interest in the project from De Beers. In August 2006, Majescor spun out its Baker Lake uranium rights for a major stake in a new uranium company, Uranium World Energy Inc.

MPH Consulting Limited of Toronto has been retained by Majescor to conduct a comprehensive technical review of the

historical uranium exploration data for the Baker Lake area and design of a field program. The geological compilation and analysis work has resulted in the identification of high priority areas across the property and the selection of seven target blocks for airborne geophysical surveying. The seven blocks were covered as part a broader 9,287 line-km geophysical survey of De Beer's uranium and diamond permits at Baker Lake. The heli-borne survey consisted of magnetics, EM, and radiometrics.

**BUGS PROPERTY**

**Operator, Owners**  
Ur-Energy Inc.;  
J.D. Charlton

**Commodity**  
Uranium

**NTS**  
65K/03

**Location**  
400 km west of Arviat

The 11 Bugs Claims (1 to 11) cover ultrapotassic Christopher Island volcanic suite rocks, forming what appears to be a collapsed, faulted cauldera. This unconformably overlies Proterozoic radioactive granites and older gneissic basement rock. Historical work by Cominco Ltd. in the 1976-80 period resulted in the discovery of uranium and thorium mineralization in waterlain tuffs and lapilli tuffs, as well as in extensive, east-west younger bostonite dykes. Targets for uranium mineralization are the basal Christopher Island waterlain and lapilli tuff horizons forming synvolcanic pods in basement paleodepressions.

Ur-Energy acquired the claims from J.D. Charlton in 2006. A prospecting program is planned for 2007.

**GARY LAKE**

**Operator, Owners**  
Uravan Minerals Inc.

**Commodity**  
Uranium

**NTS**  
66F/02, 07, 08-10, 16,  
66G/05, 06, 12

**Location**  
240 km northwest of Baker Lake

Uravan Minerals added to its land holdings in the Garry Lake area with the staking of an additional 153,277 ha in 2006.

The Gary Lake claim block covers the Thelon-basement contact as well as extending into the basin. The land package was acquired on the strength of exploration assessment records, favorable basement metasedimentary rocks belonging to the upper Amer Group, overlying coarse-grained sandstones of the Thelon Formation, regional-scale fault zones and previously discovered uranium bearing basement boulder train.

The most significant results from previous exploration on the property was the discovery in 1981 and 1982 of 19 mineralized boulders, defining a three kilometre-long uranium-bearing boulder train, oriented parallel to the interpreted ice flow direction of 330°. These boulders have been interpreted as unconformity-associated type mineralization and yielded assays ranging from 0.87% U<sub>3</sub>O<sub>8</sub> to 27.12% U<sub>3</sub>O<sub>8</sub> with an average of 7.19% U<sub>3</sub>O<sub>8</sub>. Uranium soil anomalies collected in the area define the geometry of this train, and also suggest the presence of a second train located several 100 m to the west of the original train.

The 2006 summer program included airborne geophysical work and additional

surface sampling programs to better define the source of the high-grade uranium bearing boulder train.

**KIGGAVIK PROJECT**

**Operator, Owners**  
Areva Resources;  
Dae Woo;  
JCU (Canada) Exploration  
Company Ltd.

**Commodity**  
Uranium

**NTS**  
66A/05

**Location**  
75 km west of Baker Lake

The Kiggavik project area consists of the Kiggavik and Sissons properties. Areva is the operator of the project on behalf of partners Dae Woo (Kiggavik and Sissons), and JCU (Canada) Exploration Company Ltd. (Sissons).

A 20 km linear trend, Kiggavik Trend, is the dominant control of uranium mineralization in the area. This trend is a fault controlled linear trend, striking northeast and gently convex to the northwest, lying between the Thelon and Sissons Lake faults. It hosts seven uranium deposits: Kiggavik (Main, Centre and East), Bong, Andrew Lake, End, and Jane. Resource figures are:

- Kiggavik zones - 14,872 tonnes uranium at a grade of 0.38%, representing 39 million lbs U<sub>3</sub>O<sub>8</sub>;
- End deposit - 13,598 tonnes uranium at a grade of 0.28% for 35 million lbs U<sub>3</sub>O<sub>8</sub> with one tonne gold and 0.7 tonnes platinum;
- Andrew Lake deposit - 22,160 tonnes uranium at 0.44\$ for 57 million lbs U<sub>3</sub>O<sub>8</sub> with 3.1 tonnes gold and 2.6 tonnes platinum.

In light of recent trends in the uranium price, AREVA has initiated a viability study of this combined project. A community consultation office was opened in Baker Lake in October 2006.

**KIGGAVIK NORTH AND KIGGAVIK SOUTH**

**Operator, Owners**  
Forum Uranium Corp.;  
Superior Diamonds Inc.

**Commodity**  
Uranium

**NTS**  
66B/01, 66A/04, 05, 06, 11, 12

**Location**  
85 km west and  
northwest of Baker Lake

In a 2006 summer staking venture, Forum acquired over 66,670 ha of prospective ground near the Kiggavik-Sissons Project. Forum and Superior have entered into a Letter of Intent to form a 50:50 Joint Venture, with Forum as the Operator, and an Area of Interest that encompasses approximately 39,850 km<sup>2</sup> of the northeastern margin of the Thelon Basin, including the Kiggavik North and Kiggavik South claims. In November 2006, the joint venture acquired additional claims in the Schultz Lake area, bringing the total project area to 101,562 ha.

The companies consider the Kiggavik North and Kiggavik South claims to be situated in favourable structural and lithological environments at the margin of and within the Thelon sandstone basin covered areas where uranium mineralization and alteration were discovered in previous exploration campaigns. The Schultz Lake uranium occurrences are located within hematitized

and brecciated dirty quartzites.

Forum and Superior are reviewing assessment files and compiling a comprehensive geological database of the region. An aggressive exploration is anticipated over the next two years, including airborne geophysics, ground geophysics, prospecting, geological mapping and alteration studies in preparation for a drilling program.

**NORTH THELON PROJECT**

**Operator, Owners**  
Bayswater Uranium Corporation;  
Strongbow Exploration Inc.

**Commodity**  
Uranium

**NTS**  
66F/01, 02, 15, 16, 66G/07

**Location**  
175 km northwest and 220 km  
west-northwest of Baker Lake

The property covers two blocks of permits, totaling 144,868 ha along a northeasterly trending exposure of basement rocks within the north Thelon Basin. During 2006, an airborne radiometric and magnetometer survey was flown over the permit area, with initial field investigations. Data interpretation and integration with historical data is underway, with follow-up ground-work planned for 2007. Strongbow and Bayswater are jointly exploring the North Thelon Project under the terms of the Canada Uranium Joint Venture, announced in January 2006.



NUELTIN LAKE
<b>Operator, Owners</b> Cameco Corporation
<b>Commodity</b> Uranium
<b>NTS</b> 65B/04, 65C/04
<b>Location</b> 325 km West-southwest of Arviat

The Nueltin Lake project consists of 30 claims staked in 2006 and one staked in 1998. In 2006 Cameco completed a high resolution aeromagnetic, radiometric, and gradiometre, survey, covering 3300 line-km over the claims. The geology consists of an early Proterozoic sequence intruded by granitic plutons. Uranium and gold mineralization has been observed in sulphide-rich (mainly pyrrhotite and pyrite) boulders. A field program is planned for 2007.

SOUTHWEST KIGGAVIK, CENTRAL KIGGAVIK, ITZA LAKE, AMER LAKE EAST AND WEST
<b>Operator, Owners</b> Bayswater Uranium Corporation
<b>Commodity</b> Uranium
<b>NTS</b> 65O/15, 66B/01-03, 08, 66G/01, 02, 66H/05-07
<b>Location</b> 135 km west and 140 km northwest of Baker Lake

Bayswater Uranium acquired the claims in late 2006. A compilation of historical data is underway, with plans for field work in 2007.



RUBY HILL PROPERTY
<b>Operator, Owners</b> Western Energy Corporation
<b>Commodity</b> Uranium
<b>NTS</b> 66F/01, 05-08, 66G/07
<b>Location</b> Approximately 200 km northwest of Baker Lake

Western Uranium has exploration rights on nine prospecting permits, issued in February 2006, covering 143,669 hectares in Nunavut. These permits are located along the north and north-east perimeter of the Thelon sandstone basin.

An airborne deep-penetrating electromagnetic (EM) and magnetic survey using Fugro's proprietary MEGATEM II airborne system was completed over the entire property during the latter part of the summer of 2006. The survey consisted of 3700 line-km flown at 300 m line spacing. Preliminary results from this survey have identified a number of strong conductors along structural corridors that appear to be similar to the types of conductors associated with unconformity-type uranium deposits found in the Athabasca Basin. Data interpretation and integration with historical data is underway, with follow-up ground-work planned for 2007.

THELON BASIN
<b>Operator, Owners</b> Titan Uranium Inc.
<b>Commodity</b> Uranium
<b>NTS</b> 66B/15, 66G/01, 02, 08, 66H/05
<b>Location</b> 150 km northwest of Baker Lake

The project area was previously explored by Westmin Resources and its joint-venture partner CEGB Exploration Canada (now part of Cameco). Multiple geochemical and geophysical anomalies were delineated, many to drill-stage, but were not drill-tested.

Titan completed a field program in 2006; including prospecting, ground radiometric surveys, with drill testing on two of the seven properties. Five holes were completed on the RAD lease and claims, and two holes completed on the R-22 property.

Assays from drill hole RAD-06-05 confirmed the presence of uranium values in bedrock. Collared up-ice from a mineralized boulder train in the Outcrop 6 area, this vertical hole encountered several intervals containing visible uranium mineralization, pitchblende as fracture filling on massive pick sandstone (of the Oora Lake Formation). Most of the holes on the RAD property intersected silicified feldspathic sandstone interpreted to be

the Itza Formation. Intense silicification and anomalously low uranium values define a depleted alteration halo at the apex of the RAD boulder train. The source of the RAD lease uraniferous boulder train was not identified in the widely spaced, phase one drill holes. Additional infill holes will be included in the 2007 program.

Drilling on Titan's R-22 property included two holes that both intersected complexly interbedded feldspathic sandstones and graphitic mudstones with uranium values in the eight to 10 ppm range, spiking as high as 96 ppm over 0.3 m near the top of hole R22-06-02. These geochemically anomalous uranium values are considered significant and warrant follow-up drilling. Field crews successfully covered all Thelon claims with ground prospecting. This work resulted in the discovery of several new boulder trains on four of its properties.

TURQAVIK
<b>Operator, Owners</b> Cameco Corporation
<b>Commodity</b> Uranium
<b>NTS</b> 66A and B
<b>Location</b> 100 km west of Baker Lake

In 2006, Cameco completed detailed and regional scale ground traverses, mapping, prospecting and sampling for petrography and geochemistry studies over the 131 claims of the Turqavik project. Through the integration of bedrock structures with magnetics, and EM signatures, targets were identified for follow-up prospecting.

## Gold

BAKER LAKE GOLD
<b>Operator, Owners</b> Tanqueray Resources Ltd.
<b>Commodity</b> Gold
<b>NTS</b> 66A/02, 03, 07, 10, 11
<b>Location</b> 45 km west of Baker Lake

Tanqueray's 100 per cent owned Baker Lake Gold Project covers 117,998 ha, spanning an area 70 km long and greater than 10 km wide of the southern Archean Woodburn Group. This is the southern portion of the same group of rocks that hosts Cumberland Resources' Meadowbank Gold property.

An induced polarization (IP) survey was carried out in the spring of 2006 to further enhance the selection of the drilling targets. A total of four zones were selected for drilling including three zones that had not been drilled (Vein 25, Musk Ox and the East Silver Zone). Drill targets were selected based on the combination of high grade gold values from previous surface samples, the new IP survey and previous drill results from the 2005 program on the Ayak Gossan zone.

A 10-hole 1089 m diamond drilling and surface exploration program was completed in the summer. Assay results confirm the expansion of the area of gold mineralization discovered in 2005 on the Ayak Gossan zone. The 2005 and 2006 drilling programs have defined an area of gold bearing stratigraphy with a down dip length of approximately 350 m and strike length of approximately 180 m. The

complete extent of the mineralization has yet to be determined.

The exploration programs on Baker Lake during the 2004, 2005 and 2006 field seasons resulted in the new gold discovery of the Ayak Gossan zone and approximately seven other surface zones of high grade gold tenure. The mineralized zones returned more than 100 surface samples with values ranging from 10 g/t gold, up 190 g/t gold including more than 50 samples returning greater than 20 g/t gold. The ongoing exploration every year continues to identify new areas or upgrades known zones. The 2006 exploration included the surface re-sampling of Ayak Gossan between drill hole AG06-05 and drill hole AG06-06. One outcrop sample returned 190 g/t AU, the highest grade gold sample found to date on the property.

CHURCHILL PROJECT
<b>Operator, Owners</b> Kaminak Gold Corporation
<b>Commodity</b> Gold
<b>NTS</b> 55N, O, J
<b>Location</b> 70 km north of Rankin Inlet

Kaminak Gold Corporation retains 100 per cent of non-diamond rights covering the Churchill Diamond Project currently operated by Shear Minerals Ltd. As part of this agreement Kaminak has free access to any data collected for diamond exploration, including over 71,000 line-km of airborne geophysics and 7,500 archived till samples. Kaminak identified several high-priority gold targets on the Churchill Property.



The Sedna Region displays highly-deformed, gold-bearing banded-iron-formation over at least a six kilometre strike-length. Limited prospecting at Sedna resulted in the discovery of several gold anomalies in banded-iron-formation outcrop.

During 2006, drilling, prospecting and mapping activities were undertaken on the property. Five drill holes, totaling 459 m tested the first three of several geophysical and geochemical targets in the Sedna area. The most significant result came from drill hole KCF-01. This hole collared in banded-iron-formation and intersected a number of sulphide-bearing quartz veins. Visible gold was noted along the margin of one such vein at a depth of 30 m. An assay of this material yielded 7.06 g/t Au over a core length of 0.69 m. Poor drilling conditions caused the hole to be shut down prematurely at a depth of 45 m while still in banded iron formation. This target is modeled to have a length of approximately 800 m.

A detailed mapping and prospecting program followed the drill program to further evaluate these drill results and also generate new targets. Prospective rock types and associated nickel geochemical

anomalies have been outlined across the Churchill Property and remain to be followed-up.

MATRIX GOLD PROJECT

**Operator, Owners**  
Kaminak Gold Corporation;  
Pacific Ridge Exploration Ltd.

**Commodity**  
Gold

**NTS**  
65H/11, 12, 65G/9

**Location**  
175 km west of Arviat

Kaminak Gold Corporation is exploring the lower units of the Proterozoic Hurwitz Basin in the southern Kivalliq. The geological setting of the project area is considered analogous to that hosting the billion ounce Witwatersrand gold mineralization in South Africa. Initial work done by the Hunter Exploration Group identified three gold-bearing pyritic conglomerate zones with grab samples assaying up to 16.0 g/t Au. During the 2006 season, geological mapping and prospecting done by Newmont uncovered new surface gold showings yielding assays up to 10.56 g/t Au. An additional 56,000 ha were staked, adding to the

project area. In June 2006, Newmont planned a 1,200 m drill program on the property; however, logistical problems prevented the drill program from being completed. As a result, numerous priority targets remaining untested. In August of 2006, Newmont terminated the option agreement on Kaminak’s Matrix Gold Project. Kaminak retained 100 per cent ownership of the additional claims and prospecting permits which are in good standing. The original option agreement between Kaminak and Pacific Ridge Exploration Ltd. has now been revived for the project area.

MEADOWBANK PROJECT

**Operator, Owners**  
Cumberland Resources Ltd.

**Commodity**  
Gold

**NTS**  
66H/01, 56E/04

**Location**  
75 km north of Baker Lake

The Meadowbank gold deposits occur within the Archean Woodburn Lake greenstone belt, approximately 75 km north of Baker Lake, and represent the third largest undeveloped gold resource in Canada. The stratigraphy consists of quartzite overlying komatiite, which in turn overlies intercalated felsic to intermediate volcanic rocks and iron formation. Regionally, four phases of deformation are recognized. The stratigraphy is folded into a northwest-trending, isoclinal, recumbent anticline sandwiched between two large granitoid intrusions.

Mineralization is hosted by interbedded iron formation and felsic to intermediate tuff, with subordinate orthoquartzite and ultramafic schist. Sulphides (pyrrhotite

and pyrite) and gold occur within a structural fabric associated with early progressive isoclinal folding. Alteration includes sericitization, sulphidation, silicification and carbonatization. Six near-surface gold deposits have been identified in the project area: Goose Island, Third Portage and North Portage, Vault, Bay Zone, and PDF. The Connector Zone links the Third and North Portage deposits (three zones collectively termed “Portage Zone”). In early 2005 updated resource figures were released as part of a feasibility study. Based on open-pit mining methods, measured and indicated gold resources stood at 23.3 million tonnes at 4.4 g/t Au, for 3.3 million contained ounces from the Portage, Goose Island and Vault zones.

The 2006 exploration program focused on gold resources and reserves. The Cannu zone, a potential open pit gold zone, was discovered in the fall of 2005 and an inferred mineral resource estimate was reported in early 2006: 440,000 tonnes at 6.0g/t Au, for 85,000 contained ounces. The Cannu zone gold mineralization represents a potential 350 m northern extension to the proposed Portage open pit, which contains an estimated 1.59 million oz of reserves. With the addition of Cannu, continuous mineralization has been defined over a strike length of approximately 2.15 km in the Portage area. Systematic infill and step-out drilling completed during the 2006 program was successful in defining four distinct, high grade lenses of mineralization (Keel, 305, Core and East lenses) at the Cannu zone and an improved Cannu resource estimate will be determined.

The 2006 drill program also discovered the Goose South zone, located approximately 400 m south of the Goose Island deposit. Drill intersections yielded encouraging gold grades over narrow to moderate widths within a similar structural and stratigraphic setting as the Goose Island deposit.

Meadowbank is forecast to produce an average of 330,000 ounces of gold per year over an eight year mine life based on a feasibility study and subsequent due diligence completed in December 2005. In September 2006, NIRB made a positive recommendation on the Meadowbank Project and based on this, Cumberland moved the project closer to production. The company has since secured at least \$254 million for its gold loan facility and has raised approximately \$87 million in equity financing to be used for development of Meadowbank, \$23 million from the sale of its Meliadine East and West interests in October 2006. In November 2006, the Minister of Indian Affairs and Northern Development accepted the NIRB recommendation that development of the Meadowbank gold project should proceed.

Prior to freeze-up, Cumberland staged the necessary equipment and supplies at Baker Lake for the construction of a four season access road to Meadowbank, pending receipt of the necessary permits. Mining operations from three, shallow open pits could commence in late 2008 or early 2009 subject to the receipt of permits and licenses.

MELIADINE EAST

**Operator, Owners**  
Comaplex Minerals Corp.;  
Resource Capital Fund

**Commodity**  
Gold

**NTS**  
55J/13 and 14

**Location**  
30 km northeast of Rankin Inlet

On October 26, 2006, Cumberland Resources sold its 50 per cent interest in Meliadine East to Resource Capital Fund III L.P. and Resource Capital Fund IV L.P. (collectively RCF). The Meliadine East project was not active in 2006, but remains a going concern for the partners.

MELIADINE WEST

**Operator, Owners**  
Comaplex Minerals Corp.;  
Resource Capital Fund

**Commodity**  
Gold

**NTS**  
55K/16, 55N/01 and  
02, 55O/04

**Location**  
24 km northeast of Rankin Inlet

Comaplex is continuing to proceed with an ambitious program to assess the potential development of the Meliadine property. Total drill meterage completed in the 2006 exploration program was 18,043 m in 75 holes. Of this amount, 16,124 m (89%) in 62 holes were completed in the Tiriganiaq zone. The remaining 1,919 m was drilled in 13 shallow holes on the reconnaissance Aklak and Aqpik targets on the far east end of the property.







The main objective of the 2006 drill program was to confirm continuity of mineralization in the 1000 and 1100 lodes within the Tiriganiaq deposit. Some minor meterage was allocated to testing the 1050 lode below the main deposit and to test the upper portion of the shallow west plunging 1150/1250 lodes.

Regional prospecting and sampling to the west of the Tiriganiaq deposit was also completed. Efforts were concentrated on the Musket Bay structure, which hosts the same iron formations and structural deformation as the Tiriganiaq deposit at a location approximately 8 km to the west of Tiriganiaq. This area is a target for the 2007 surface exploration program.

Comaplex is currently in the process of compiling and validating information from its 2006 program to update the amount and classification of the resources in the Tiriganiaq deposit. The most recent resource estimate for the Tiriganiaq deposit was released in January 2006, prepared by Snowden Mining Industry Consultants. Preliminary mine planning and cost estimation studies were undertaken so that reasonable cut-off criteria could be applied in the estimate. The analysis suggests that open pit mining may be possible to approximately 150 m below surface. Snowden suggests it is likely that a small portion of the underground resource may be mined by

more selective, narrow vein mining methods. A gold price of \$450 US per ounce has been assumed in the mine planning analysis.

From surface to 150 m (potential open pit, applied cut-off 2.5 g/t Au), the calculated indicated resource is 4.2 million tonnes at 7.5 g/t Au, (1,009,000 contained oz) plus an inferred resource of 3.244 million tonnes at 4/1 g/t Au (432,000 contained oz). Below 150 m (potential underground, applied cut-off 6.5 g/t Au), the indicated resource estimate is 0.507 million tonnes at 11.3g/t Au (84,000 contained oz), plus inferred resources of 3.188 million tonnes at 10.9 g/t Au (1,120,000 contained oz). The total ounces of gold are 1,193,000 (indicated) and 1,552,000 (inferred).

Comaplex is presently developing engineering information for the deposit that will lead to the completion of a scoping study by early 2007. Some issues to be included are: costing and associated information related to a proposed exploration decline into the deposit, scheduled for late 2007; upgrading and extension of the existing road between the deposits and the camp, with possible surface infrastructure work in the area of the proposed portal; determination of the potential benefits of building a 27 km all-weather road between Rankin Inlet and the deposits site.

On October 26, 2006, Cumberland Resources sold its 22 per cent interest inMeliadine West to Resource Capital Fund III L.P. and Resource Capital Fund IV L.P. (RCF).

The property covers over 48,000 ha of the Archean greenstone belt known as the Yathkyed Lake Greenstone Belt. Kaminak has a 100 per cent interest in the non-diamond rights.

Fugro Ltd. completed a 1,156 line-km airborne magnetic and electromagnetic survey over the property in 2006. The survey successfully defined the extent of known horizons of gold-bearing banded-iron-formation and outlined a new 30 km long magnetic trend which is also interpreted as a highly deformed banded-iron-formation. This previously unknown trend also reveals a number of co-incident electromagnetic anomalies that could represent sulphide-bearing horizons.

**SY PROPERTY**

**Operator, Owners**  
Kaminak Gold Corporation

**Commodity**  
Gold

**NTS**  
65I/14, 15

**Location**  
250 km west of Whale Cove

## Nickel - Copper – PGE

**FERGUSON LAKE PROJECT**

**Operator, Owners**  
Starfield Resources Inc.

**Commodities**  
Nickel, Cobalt, Copper, Platinum, Palladium

**NTS**  
65I/09-15, 65J/14, 16, 65O/01, 65P/03, 04

**Location**  
160 km south of Baker Lake

Starfield Resources acquired this property in 1999, increasing its mineral claim holdings by 200 per cent in 2005. The property now extends 125 km east-west and 71 km north-south at its widest section. The Ferguson Lake deposit is a Ni-Cu-PGE deposit, hosted by moderate to weakly foliated tholeiitic gabbro-hornblendite layered intrusions.

The focus of the 2006 program was the delineation drilling of the ‘potential pit area’ and selected parts of the 4.2 km long West Zone where previous work has identified 8.7 million tonnes of indicated resources and an additional 53.2 million tonnes of inferred resources at a 1% Cu+Ni cut-off grade. Eight kilometres of continuous geophysical conductors have been outlined in the West Zone with only 4.2 km continuously drilled.

Starfield completed 24,000 m of drilling in 2006. Over 5400 one metre core samples were submitted for analyses and assay. The results will be compiled, integrated with previous drill results, and released with an updated resource estimate during 2007. The geological and resource models being developed will form the basis of an assessment of the Ferguson Lake

Property. Starfield is currently advancing its hydrometallurgical testing program. The program includes grindability testing, flotation-concentrate production, and PLATSOL process evaluation of ‘hydrometallurgically-produced’ concentrate.

A new, all-season, base camp and related facilities was built near the West Zone. During 2006, the mineral claims hosting the Ferguson Lake sulphide resources, new base camp, and the proposed airstrip were surveyed in preparation for application of a mining lease to cover this part of the property.

Geological mapping, in conjunction with recent geophysical interpretation on the west side of Ferguson Lake, indicates the layered intrusion extends at surface from the South Discovery Zone to the West Zone South over a distance of 6.8 km.

In addition to the on-going drill program, exploration crews completed detailed follow-up and reconnaissance scale geological mapping, prospecting/rock sampling, and till sampling. This program focussed on priority targets and target areas identified in property scale airborne magnetic-VTEM geophysical surveys and in rock and till surveys completed in 2005. A total of 138 rock samples from outcrop have been submitted for assay and infill till sampling resulted in 781 samples being collected. New mineralized outcrops were discovered, and anomalous base metal and palladium till target patterns were further confirmed in the 2006 regional program.

**TARGET 87**

**Operator, Owners**  
BHP Billiton;  
Jaguar Nickel Inc.

**Commodities**  
Nickel, Cobalt, Copper, Platinum, Palladium

**NTS**  
65F/14

**Location**  
385 km west of Arviat

The Target 87 property consists of two prospecting permits, which host a poorly exposed large gabbro complex. Jaguar Nickel Inc. Is exploring the property for large volume magmatic sulphide deposits, pursuant to an exploration agreement with BHP Billiton whereby the Company may earn a 51 per cent interest in the subject properties. Jaguar Nickel has entered into an exploration alliance with BHP Billiton for the exploration and development of nickel mining properties in Canada, Alaska, the mid-continental United States and Greenland, excluding certain properties currently held by BHP Billiton.

The Target 87 project area has received very little exploration attention historically. The area is spatially related to the Snowbird Tectonic Zone which is a suture zone between tectonic plates that is spatially associated with large mafic and ultramafic intrusions which themselves are prospective hosts of nickel and copper mineralization.

Jaguar Nickel announced an airborne VTEM electromagnetic and magnetic survey in 2006. Six hundred line kilometres of flight lines detailed the gabbro complex at 300m line spacing. Follow-up ground work of prospecting, rock and till sampling was conducted.



# Qikiqtani/Baffin Region

The majority of exploration programs in the Qikiqtani Region focused on diamondiferous kimberlites. The north-western half of Baffin Island and the Melville Peninsula all have been the focus of diamond exploration for the last few years, with more interest developing in the

central and southern portions of Baffin Island as well as the High Arctic.

The largest individual exploration project focused on iron deposits in the Mary River area.

In central Baffin, iron formations are being explored for their gold potential.

Evaluation of the sapphire potential continues in the Kimmirut area. There is also interest in coal on Axel Heiberg and Ellesmere islands in the High Arctic with several companies and individuals having obtained coal exploration licenses.



## Base Metals

### NANISIVIK MINE

**Operator, Owners**  
Canzinc Ltd. (Breakwater Resources)  
**Commodities**  
Zinc, silver  
**NTS**  
48C/01  
**Location**  
Borden Peninsula, Baffin Island

The Nanisivik Mine went into production in 1977. Production ended in 2002 with low metal prices. In the last year of production, the mine produced 516,544 tonnes of ore grading 10.0% Zn and 42 g/t Ag. In June 2004 the Nunavut Water Board (NWB) gave its approval to proceed with a closure and reclamation plan. These closure and reclamation activities were initially anticipated to be finished in 2005; however, the work was delayed and was completed in 2006. Work included removal of the remaining infrastructure, limited maintenance of cover material, finalization of the placement of some cover material, removal of contaminated soils from certain targeted areas and the commencement of post closure monitoring. Beginning in 2007 and for a minimum of five years, geotechnical and environmental monitoring of the site will be conducted to ensure the integrity of the reclamation work.

In 2003, Canzinc entered into an agreement with Wolfden Resources who purchased the Nanisivik industrial complex, including milling equipment and related

infrastructure, four diesel electric generators, the ship loading facility and the concentrate storage building. In return, Wolfden agreed to reclaim the industrial complex site and immediate area to the regulators' satisfaction.

### POLARIS

**Operator, Owners**  
Teck Cominco Ltd.  
**Commodities**  
Lead, Zinc  
**NTS**  
66H/08  
**Location**  
Little Cornwallis Island,  
90 km northwest of Resolute Bay

The Polaris mine, on Little Cornwallis Island and the most northerly mine in the world, commenced production in 1980. The principal metals extracted were zinc, lead and calcium, at a production level of 152,700 tonnes in 1997. Zinc comprised a little over 12% of the ore mined and lead accounted for about 3.5%. Further studies and exploration activities determined that the deposit was not economically viable. The mine closed in 2002; Teck Cominco set about to decommission the mine and reclaim the site. Hazardous materials from the site were transported to southern Canada for recycling or disposal and reclamation was completed in 2004. Site monitoring, particularly related to water quality to ensure that metal levels continue to be well below allowable levels, will continue through to 2011.

## Diamonds

### ALEXIS

**Operator, Owners**  
BHP Billiton;  
Stornoway Diamond Corporation  
**Commodity**  
Diamonds  
**NTS**  
47A, 47B  
**Location**  
Between Repulse Bay and Igloolik  
on the Melville Peninsula

The Alexis property consists of 1.25 million ha of mineral claims. These claims were staked in the fall of 2004 surrounding and adjacent to the Qilalugaq property. BHP Billiton and Stornoway Diamond Corp. hold a 50:50 interest in the property. Approximately 600 till samples were collected during the 2004 field season. BHP Billiton completed field work in 2005. No details are available at this time for 2006.

### AVIAT

**Operator, Owners**  
Stornoway Diamond Corporation;  
BHP Billiton;  
Hunter Exploration Group  
**Commodity**  
Diamonds  
**NTS**  
47C, D  
**Location**  
120 km northeast of Hall Beach,  
Melville Peninsula

The Aviat Joint Venture is a partnership between Stornoway (70 per cent), BHP Billiton (20 per cent), and Hunter Exploration Group (10 per cent) that covers approximately 1.6 million ha





of the Melville Peninsula in eastern Nunavut. The property has been Stornoway's main project since 2003 and was the principal focus for 2006. Till sampling has narrowed the areas of interest on the project from ~ 2.2 million ha in 2004 to just under 1.6 million ha in 2006.

The Tremblay Corridor is a 70 km by 8 km zone of high indicator mineral concentrations that hosts all the known kimberlites on the property. Eleven kimberlite bodies have been discovered to date: AV1, AV1 West, AV2 Upper, AV2 Lower, AV3, AV4 AV5, AV67, AV8 Upper, AV8 Middle, and AV8 Lower. All bodies have proven significantly diamondiferous with average grades of 0.86 c/t.

In 2006, Stornoway drilled a total of 1,833 m (22 holes) and intercepted kimberlite with true thicknesses up to 5.25 m. In the Tremblay Corridor, the intercepted rocks are tentatively interpreted to represent shallowly-dipping (eight to 20°), stacked sheets as eight distinct kimberlite bodies with associated zones of kimberlite breccia were intercepted and intersected in an area 1.5 by 3.5 km. Additional work included prospecting that identified 122 new kimberlite boulder occurrences, and the collection of 2,100 till samples to follow-up on 15 unsourced indicator mineral trains with promising diamond inclusion chemistry.

BAFFIN ISLAND PROJECT

**Operator, Owners**  
Pure Diamonds Exploration Inc.;  
De Beers Canada Inc.  
**Commodity**  
Diamonds  
**NTS**  
47E, 47H, 37C, 37H, 37F, 37G  
**Location**  
150 km north of Igloolik

Pure Diamonds Exploration Inc. and De Beers Canada Inc. are working on the Baffin Island Project, part of the High Arctic Joint Venture between the companies. The Baffin Island Project is the most advanced within the venture and was the focus of exploration for De Beers in this area. Exploration in 2006 included 4,300 line kilometres of airborne magnetic and electromagnetic surveys, prospecting, geological mapping, ground geophysics and 1100 m of diamond drilling. The program keyed in on the core area of the project where a kimberlite boulder train had been discovered.

Diamond drilling resulted in the discovery of a new kimberlite termed “Aliguja”. This discovery was at the head of a boulder train defined by detailed prospecting and geological mapping. The Aliguja kimberlite dyke is over two kilometres east of, and on trend with, the Amon kimberlite discovered

in late 2005. Both kimberlites are located at the south end of a series of boulder trains which, together, form a train over 50 km long. Both are also the sources of the boulder trains that led to their discovery. Mineral chemistry analysis indicates that the kimberlites are highly prospective for diamonds. Micro diamond analyses from the Aliguja and Amon trains returned 263 and 234 microdiamonds from 99.3 and 136.2 kg, respectively. With an ice direction from north to south, the sources of the majority of the boulder trains has yet to be discovered.

The results from the 2006 Baffin Island Exploration Program will be reviewed in detail in anticipation of the continuation of exploration in 2007.

BAUMANN PROJECT

**Operator, Owners**  
Stornoway Diamond Corporation;  
Indicator Minerals Inc.  
**Commodity**  
Diamonds  
**NTS**  
49C, 49D, 49E, 49F  
**Location**  
200 km north of Grise Fiord

The Baumann Project is composed of 87 prospecting permits on Ellesmere Island. The property was optioned to Stornoway Diamond Corp. in March of 2005. Stornoway can earn a 41 per cent interest

in the property by spending \$1 million before 2009 and incurring 100 percent of the cost of staking mineral claims. In the 2005 field season 123 heavy mineral samples were collected on the property. No results were available at the time of writing.

BORDEN PROJECT

**Operator, Owners**  
Indicator Minerals Inc.  
**Commodity**  
Diamonds  
**NTS**  
47H, 48A  
**Location**  
110 km south east of Arctic Bay

The Borden Project is located on the Borden Peninsula and is comprised of 12 prospecting permits. This project is part of an option agreement between Committee Bay Resources and Indicator Minerals Inc.

In 2004, heavy mineral samples yielded kimberlite indicator minerals in one area of the property. In 2005, 30 heavy mineral specimens were collected to identify the source of the indicator minerals. No results were available at the time of writing.

BORDEN PROJECT

**Operator, Owners**  
Patrician Diamonds Inc.  
**Commodity**  
Diamonds  
**NTS**  
48A, 48B  
**Location**  
90 km southeast of Artic Bay

Patrician Diamonds Inc. acquired the property covering 35,416 ha on the Borden Peninsula in 2004. Kimberlite bodies were discovered on the property during the initial staking and a 0.31 carat diamond

was recovered in kimberlite float. Further work discovered eight kimberlite outcrops and five areas of kimberlite float. Airborne magnetic work over the property outlined several anomalous areas that are interpreted to be possible kimberlites.

The Borden Project was a priority for Patrician for the 2006 field season where the company planned a program of prospecting and sampling in addition to collecting larger samples of some of the known kimberlites in order to better evaluate their diamond potential. No results were available at the time of writing.

BRODEUR

**Operator, Owners**  
Diamondex Resources Ltd.;  
Kennecott Canada Exploration Ltd.  
**Commodity**  
Diamonds  
**NTS**  
48C/04-06, 48C/11,  
58D/08, 48G/11-14,  
48H/08, 48H/09, 48B/02-04  
**Location**  
110 km west of Nanisivik

The Brodeur property is centered on the northern half of the Brodeur Peninsula of Baffin Island in Nunavut. The property comprises 32 optioned claims and six prospecting permits totalling 163,608 ha. Diamondex can earn up to 100 per cent on the property, subject to an agreement with Kennecott Canada Inc. The property hosts three known diamond-bearing kimberlite bodies: Tuwawi, Nanuk and Kuuriaq.

The largest kimberlite, Tuwawi, with a surface expression of approximately four hectares is interpreted to increase in size with depth. In 2005, Diamondex spent C\$1.91 million on initial explo-

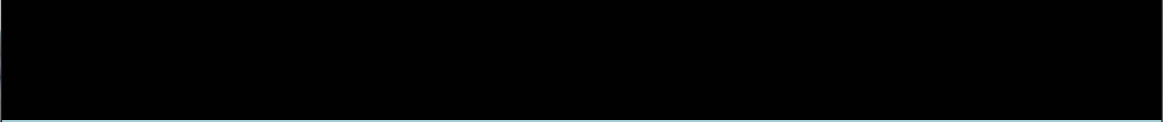
ration that included detailed airborne magnetic/EM surveys, as well as detailed gravity and magnetic ground grids over the previously discovered Tuwawi kimberlite. Stream sediment and till sampling identified numerous kimberlitic boulders which were sent for diamond analysis. This work defined several high-priority targets for follow-up in 2006.

The 2006 work, budgeted at \$0.9 million, included follow-up till and stream sampling, detailed ground based magnetic geophysical surveys and the prospecting of magnetic trends within a 40 km2 area surrounding the three known kimberlite bodies. Two new kimberlite outcrop, subcrop and boulders were located by prospecting along the geophysical expression of the structure known to host the Kuuriaq intrusion, interpreted to be a steeply dipping, sheet-like body with a potential strike length of 5.5 km, 400 m of continuous outcrop, 1.2 to 2.2 m wide, were also found along this structure.

The investigation of a magnetic anomaly 180 m x 100 m led to the discovery in outcrop of Katigia, a dyke-like kimberlite body. Kimberlite boulders were also found. Kimberlite fragments were recovered directly over another magnetic anomaly not associated with any known trends and located three kilometres northwest of Kuuriaq

An aggregate total of nearly 600 kg of kimberlite was collected from the recently discovered sites described above. Results are pending. Upon receipt, the results will be incorporated into design a delineation drilling program scheduled for the second quarter of 2007. A mini-bulk sample will also be collected from Tuwawi.





Kimberlites are found in the “Jackson Inlet cluster” of kimberlites with at least four bodies, including the Freightrain and Cargo 1. The cluster is manifested as three dark brown circular patches within a 500 by 600 m halo of tan colouration. The Freightrain kimberlite contains gem-quality diamonds.

**MIP**

**Operator, Owners**  
Contact Diamond Corporation;  
Stornoway Diamond Corporation

**Commodity**  
Diamonds

**NTS**  
26E/04, 26E/05, 36H/01, 36H/08

**Location**  
225 km northwest of Iqaluit

The MIP project is a joint venture between Contact Diamonds and Stornoway Diamond Corporation located in south central Baffin Island. Following initial research that resulted in a focus on areas of Baffin Island, the companies conducted field work in 2005; work consisted of an aeromagnetic survey, prospecting, claim staking and till sampling.

Aeromagnetic results directly led to the staking of approximately 30,353 ha in this area. One of the three claim blocks staked contains fourteen discrete geophysical anomalies varying in size from 125 m to 800 m in diameter. All of the anomalies are found in a single cluster and in an area considered to be structurally permissive to kimberlite intrusion. The anomalies were drilled in August 2006 but failed to intercept kimberlite although the geophysical targets were explained. No further work is planned at this time.

**MIRAGE, TIMMIJUQ**

**Operator, Owners**  
Peregrine Diamonds Ltd.

**Commodity**  
Diamonds

**NTS**  
26L, 26M, 36I, 36P (Mirage),  
15P (Timmijuuq)

**Location**  
400 km North-northwest of Iqaluit  
(Mirage); 200 km west of Iqaluit  
(Timmijuuq)

The parent company of Peregrine Diamonds Ltd. underwent corporate re-organization in October 2005 when its metal properties were separated from its diamond properties. Properties held by Dunsmuir were amalgamated into Peregrine Diamonds in early 2006. In the Baffin area, two areas of prospecting permits (issued February 1<sup>st</sup>, 2006), the Mirage and the Timmijuuq properties, in the west and east parts of southern Baffin Island, respectively, were the subject of exploratory work conducted in 2006. Reconnaissance exploration activity was conducted on this two properties; no results were available at the time of writing.

**MUSKOX HILL PROJECT**

**Operator, Owners**  
Pure Diamonds Exploration Inc.;  
De Beers Canada Inc.

**Commodity**  
Diamonds

**NTS**  
67G, 67H, 68A, 68B, 68C, 68D

**Location**  
400 km north of Gjoa Haven

Pure Diamonds Exploration Inc. and De Beers Canada Inc. are working on the Muskox Hill Project on Prince of Wales

Island, part of the High Arctic Joint Venture between the companies. The Muskox Project consists of 175 permits covering 3,350,296 ha and all of Prince of Wales Island. The proposed budget for the project in 2006 was \$1,250,000 and 727 till samples were collected.

**PRINCE CHARLES ISLAND**

**Operator, Owners**  
BHP Billiton

**Commodity**  
Diamonds

**NTS**  
36N, 36O, 37A, 37B

**Location**  
Islands west of Baffin Island  
in Foxe Basin

BHP Billiton maintained prospecting permits covering the islands just south of central Baffin Island in the Foxe Basin.

**WALES ISLAND**

**Operator, Owners**  
Strongbow Exploration Inc.;  
Stornoway Diamond Corporation;  
BHP Billiton

**Commodity**  
Diamonds

**NTS**  
46M/15, 46M/16, 47B/03

**Location**  
150 km north of Repulse Bay

In September 2005, Strongbow and partners Stornoway and BHP Billiton announced the discovery of eight new kimberlites on Wales Island, bringing the total number of known kimberlite occurrences on the property to 10. The new discoveries were made during an exploration drilling program. Five of the

new discoveries were made through drilling and three were discovered as subcropping dykes near the W1 kimberlite that was first discovered in 2004. Approximately 708 kg of kimberlite core and 70 kg of surface subcrop were submitted for geochemical and diamond analysis. Results from this work has revealed that four of the kimberlite bodies are weakly diamondiferous and samples from the remainder of the kimberlite bodies were barren of diamonds. The Wales Island partners have reviewed the exploration results received to date and as of May 2006 have no plans for further exploration of the property as of May 2006.

## Energy Sources

**STRAND FIORD COAL PROJECT**

**Operator, Owners**  
James Bay Energy Inc.

**Commodity**  
Coal

**NTS**  
46K, 46L, 46M, 46N

**Location**  
515 km north of Resolute Bay on  
Axel Heiberg Island

James Bay Energy Corp. has held the coal licences that cover the Kangut Peninsula of Strand Fiord on Axel Heiberg Island in Canada’s High Arctic for several years. This island lies immediately west of Ellesmere Island within the Sverdrup sedimentary basin. In 2004, the company team went to Axel Heiberg Island to sample coal seams. The company still holds the licences although the property has been inactive recently.

**EDEN POINT PROJECT**

**Operator, Owners**  
Pure Diamonds Exploration Inc.;  
De Beers Canada Inc.

**Commodity**  
Diamonds

**NTS**  
48E, F, G, H, 58E, F, G, H, 59A, B

**Location**  
250 km north to 450 km east of Resolute Bay, including Resolute Bay area

The Eden Point Project is part of the High Arctic Joint Venture between Pure Diamonds Exploration Inc. and De Beers Canada Inc. This project is comprised of 243 permits totaling just over four million hectares. The property covers all of Devon Island not affected by the Ice Cap and portions of Cornwallis and Little Cornwallis Islands. During 2006, De Beers, as operator of the joint venture, conducted regional sediment sampling program and collected 991 samples. Only small portions of the samples collected has been examined to date for indicator minerals. Positive kimberlite indicator minerals were recovered from several of the early samples and initial results suggest two sources for the mineral trains.

**JACKSON INLET EAST AND WEST**

**Operator, Owners**  
Twin Mining Corporation;  
Stornoway Diamond Corp.

**Commodity**  
Diamonds

**NTS**  
58D/01, 58D/08

**Location**  
120 km west of Nanisivik

Twin Mining entered into a letter agreement dated March 2006 with plans to incorporate a new subsidiary, Diamondco, which will acquire all of Twin Mining's diamond exploration assets, the Brodeur property on Baffin Island and the TORNGAT property in Nunavik, Quebec. Completion of the transaction is subject to receipt of all requisite regulatory approvals.

Twin Mining acquired the property from privately-held Helix Resources in June 2000. Since then, the company has added substantially to its land holdings on the Brodeur Peninsula to hold 5,107 km² in total. 270 tonnes of samples has been analysed resulting in over 50 carats of diamonds with the largest diamond recovered being 1.557 carats.





Coal is found in four formations within the Sverdrup Basin: the Upper Devonian Okse Bay Formation, the Upper Triassic or Lower Jurassic part of the Heiberg Formation, Lower Cretaceous Isachsen formation and the Upper Cretaceous and the Tertiary Eureka Sound Formation. These coal and hydrocarbon resources were examined in the late 1970s and early 1980s by several of the larger petroleum companies and this work has been written up in assessment reports.

## Gemstones

**BELUGA SAPPHIRE PROJECT**

**Operator, Owners**  
True North Gems Inc.

**Commodities**  
Sapphires/Fancy Sapphires

**NTS**  
25K/13

**Location**  
3.5 km southwest of Kimmirut

The sapphires discovered on Southern Baffin Island are hosted in a desilicified syenitic pegmatite lens in the marbles of the Lake Harbour Group of sediments. The sapphires were discovered by independent prospector brothers Nowdluk and Seemeega Akpiq in 2001. In 2003, True North Gems optioned the Beluga Sapphire occurrence from the brothers. At that time there were two known occurrences of sapphires, with the Beluga occurrence being the main showing and the Narwhal being

the second occurrence. The sapphires are natural blue, yellow and colourless.

True North Gems recovered a 4.29 tonne bulk sample in 2004 from the Beluga deposit and the company discovered four additional sapphire occurrences. The results of the bulk sample were encouraging with the recovery of rough sapphire averaging 790.7 c/t. The grade of gem-quality and near-gem quality sapphires was 33.1 c/t and 115.0 c/t respectively. An independent evaluation of a portion of the sapphires that were processed showed an average price of US\$570.85/t.

Prospective outcrops, trenches and drill core intervals were identified during 2005 drilling. The 2006 drilling program consisted of 40 holes (1,482 m) and concentrated on several high priority targets hosting visible, colourless to deep blue, pink and yellow sapphires. Numerous pods exhibiting mineralogical similarities to the main Beluga sapphire occurrence were identified. The intermittent pods ranged in thickness from less than 0.5 m and up to 9.5 m and were intersected from near-surface intervals to depths of more than 35 m. Drilling has also confirmed the widespread presence of several minerals spatially associated with the Beluga sapphire mineralization, in each of the Beluga, Muktuk and Bowhead occurrences. Drilling of other known sapphire occurrences has been deferred pending completion of the geochemical and heavy mineral analysis.

A total of 548 samples of sawn core, ranging from 10 cm to one metre in length, have been shipped to Vancouver for detailed geological, mineralogical, petrographic and geochemical analysis.

## Gold

**CENTRAL BAFFIN  
(BAFFIN ISLAND GOLD)**

**Operator, Owners**  
Commander Resources Inc.;  
BHP Billiton;  
Falconbridge Ltd.;  
Nunavut Tunngavik Incorporated

**Commodities**  
Gold

**NTS**  
37A/09, 37A/10, 27B

**Location**  
360 km northwest of Pangnirtung

The property is underlain by a sequence of Lower Proterozoic sedimentary and volcanic rocks. The Bravo Lake iron formation hosts 15 known gold occurrences including Ridge Lake, Malrok, Durette, QIM 5 and the newly-discovered Brent showing.

The Ridge Lake prospect is 3.5 km long within a prominent east-west structural corridor defined by strong folding, intense local shearing and alteration. Drill results from 2004 to 2006 indicate there is a broad low-grade sheet of gold mineralization across a central zone which contains several higher grade shoots plunging southwest. Recent

drilling highlights include a hole which returned 15.13 g/t Au over 1.67 m and a step-put hole drilled 150 m southwest of the first hole and returned 2.02 g/t Au over 2.09 m. These results suggest that the system is open. A second mineralized zone at Ridge Lake contains gold and arsenopyrite over a strike length of 250 m. Six grab samples from this zone contained 1.34 to 9.23 g/t Au.

The Malrok Prospect, located 30 km west of Ridge Lake, contains gold that is found on surface and through drilling over a strike length of approximately 2 km. Surface samples returned gold values of up to 212 g/t and drilling results down to 50 m depth included 9.15 g/t Au over 6.0 m, 15.12 g/t gold over 3.0 m, and 12.1 g/t Au over 3.3 m. The iron formation-hosted gold mineralization extends down-dip from surface for at least 130 m.

The Durette Prospect is outlined over an area of at least two kilometres and is comprised of the 2369 Prospect and Durette Showing. The best channel samples

are 28.9 g/t Au over two metres and 18.0 g/t Au over two metres, with two chip samples at the Durette Showing returning values of 41.4 and 46.95 g/t Au. Drilling at the Durette Showing intersected 9.61 g/t over 1.56 m at a depth of 14.30 m. This trend is open and continues to the west. Another sampled showing five kilometres south-east of the Durette Showing returned values of 3.98 g/t Au and 0.23% copper. Prospecting outlined an area of 200 m with sulphide-bearing (up to 60% pyrrhotite, pyrite and chalcopyrite) iron formation and mafic volcanic boulders.

At Qim 5, 20 km east of Ridge Lake, a grab sample containing 48.29 g/t Au was found 150 m southeast of a 2004, 100 g/t Au channel sample. The Brent Showing was discovered in 2006, five kilometres southwest of Ridge Lake: it is a 1400 m long shear zone with quartz veining, arsenopyrite and pyrrhotite. Analytical results from 66 grab samples along the length of the shear zone range up to 113.95 g/t Au. Two drill

holes tested the Brent showing and gold mineralization up to 6.14 g/t Au over one metre was intersected 45 m vertical depth beneath surface exposures that carried high-grade gold.

## Iron

**MARY RIVER  
IRON ORE DEPOSITS**

**Operator, Owners**  
Baffinland Iron Mines Corp.

**Commodity**  
Iron

**NTS**  
37G/05

**Location**  
160 km south of Pond Inlet

The iron deposits at Mary River on north central Baffin Island were first discovered by Murray Watts and Ron Sheardown in 1962. Between 1963 and 1965, exploration work identified five high-grade iron deposits. Other work at this time included the construction of 3 gravel airstrips, the establishment of a







haul road between Mary River and Milne Inlet and topographic and hydrographic surveys conducted off Milne Inlet by the Government of Canada. However, a full feasibility study performed at that time to access the viability of the deposit determined the resources to be uneconomic.

Baffinland Iron Mines Corporation re-initiated work on the property in 2004. Drilling in 2005 tested the feasibility of a 10 million tonne per year operation for at least 35 years. In 2006, Baffinland completed 7,067 m in diamond drilling, including geotechnical drilling and in-fill drilling on Deposit No. 1, step out drilling on Deposit No. 2 and first-time drilling on Deposit No. 3. The geotechnical drilling for Deposit No. 1 tested foundation conditions for infrastructure and provided data to assist in pit slope optimization.

Deposit No. 3 is located approximately 700 m south of Deposit No. 2 and about 3.5 km east of Deposit No. 1.

2006 drilling of Deposits Nos. 2 and 3 was designed to provide data for a scoping study to assess the potential of these deposits; this study is being prepared in conjunction with the feasibility study. The scoping study will investigate the implications of subsequent expansion of these satellite deposits using much of the infrastructure established for the development of Deposit No. 1.

The highlight of the 2006 drilling program was a continuous core interval of 169.8 m, true thickness approximately 140 m, of massive specular hematite in Deposit No. 3. Assays are pending. The hole ended in mineralization and ended because of technical drilling difficulties. The current interpretation is that Deposit No. 2 is the faulted westerly extension of Deposit No. 3 and that Deposit No. 3A is the easterly extension of Deposit No. 3.

Aker Kvaerner E&C completed a scoping study in 2006 for Deposit No. 1 which provided cost estimates and an economic analysis for a 10 million tonnes per year production rate of the Mary River Project. A feasibility study is currently being prepared by the same consultants and this study is scheduled for completion in late 2007. Successful exploration to date has encouraged Baffinland to consider an expanded production rate for this feasibility study of 12.5 to 15 million tonnes per year.

In 2006, Baffinland also collected significant data including metallurgical testing, resource modeling, land and marine transportation studies, potential port assessments, environmental baseline collection, socioeconomic assessments, traditional knowledge studies, renewable energy studies and iron ore market reconnaissance. Baffinland has commenced negotiations of the Inuit Impact and Benefits Agreement (IIBA) with the Qikiqtani Inuit Association.

ROCHE BAY

<b>Operator, Owners</b>
Roche Bay plc
<b>Commodity</b>
Iron
<b>NTS</b>
47A/06, 47A/05
<b>Location</b>
60 km southwest of Hall Beach

Roche Bay plc (website: [www.rochebay.gi](http://www.rochebay.gi)) is actively evaluating magnetite iron deposits on the Melville Peninsula. They have seven 21-year renewable mining

leases covering 4,440 ha. The iron formations belong to the Prince Albert Group and consist of highly metamorphosed and deformed volcanic and sedimentary rocks.

In 2006, Roche Bay plc announced that an aeromagnetic survey was flown by Goldak Airborne Surveys of Saskatoon over the company's Adler, B and C bodies, located on the eastern side of the Melville Peninsula (Eastern mining leases). Interpretation of the results suggests that the Eastern mining leases could contain significantly more magnetite iron deposits

than previously recognized. The aeromagnetic signature of the C deposit suggests a length of 5,100 m and a width over 600 m, above previous estimates of 4,270 m in length and 122 m in width. The Company has stated it is cognisant of the fact that the potential quantity and grade of targets are conceptual in nature and that limited exploration drilling has been conducted to date on its leases. Plans are underway to conduct further drilling and metallurgical test work. ■







# nunavut

Nunavut Mining Mineral Exploration and Geoscience Overview 2006



Indian and Northern  
Affairs Canada

Affaires indiennes  
et du Nord Canada