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# NWT & Nunavut Chamber of Mines

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# Diamonds in

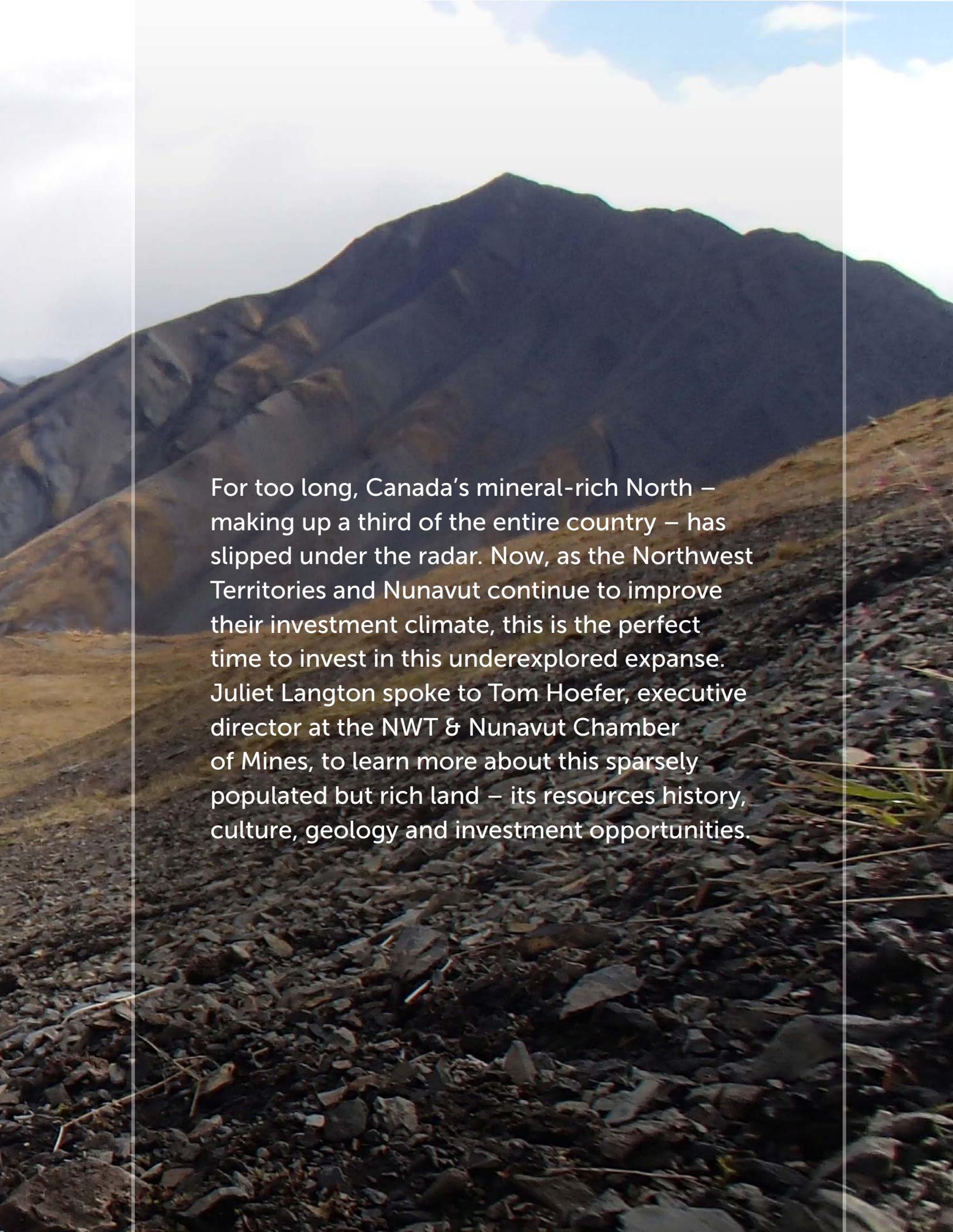
The untold mineral riches and invest



# in the rough

Investment opportunities of Canada's underexplored North



A landscape photograph showing a mountain range in the background under a cloudy sky. The foreground is a rocky, gravelly slope. The text is overlaid on the middle of the image.

For too long, Canada's mineral-rich North – making up a third of the entire country – has slipped under the radar. Now, as the Northwest Territories and Nunavut continue to improve their investment climate, this is the perfect time to invest in this underexplored expanse. Juliet Langton spoke to Tom Hoefer, executive director at the NWT & Nunavut Chamber of Mines, to learn more about this sparsely populated but rich land – its resources history, culture, geology and investment opportunities.



**NUNAVUT IS ONE** of the most remote and sparsely populated regions in the world. Covering 1,877,787km<sup>2</sup> of land and 160,935km<sup>2</sup> of water in Northern Canada, it is Canada's largest territory and simultaneously the least populated, with a mere 31,906 inhabitants in the 2011 census. Until 1999, this vast area of arctic tundra was part of the Northwest Territories (NWT), which it now borders.

Though slightly warmer than Nunavut, with

some boreal forest, NWT is similarly sparsely populated with 41,462 people spread over 1,183,085km<sup>2</sup>. Together, the NWT and Nunavut cover a third of Canada, the world's second largest country. The NWT & Nunavut Chamber of Mines has the daunting task of representing and championing the mining industry of this massive area. Tom Hofer is the Chamber's executive director and extremely passionate about encouraging people to invest in the NWT and Nunavut.



## Buried treasure

Mining in the NWT began in the early 1930s with the production of radium, which was used to perform X-rays. “It was extremely rare, meaning people had to go to the ends of the earth to find it,” comments Hoefer. “At its peak, history reports it fetched up to an incredible US\$120,000 per gram.”

When radium’s role in X-ray technology was replaced by electricity, this radium mine became

a uranium mine and, much later, a silver mine. The evolution of this first mine is a good example of the complex and varied ore deposits native to the NWT and Nunavut; the former being the world’s third largest producer of diamonds by value.

“We have tremendous geological potential in our eight geological provinces; a significant variety of mineral deposits can be found here, and our history has shown that,” says Hoefer.

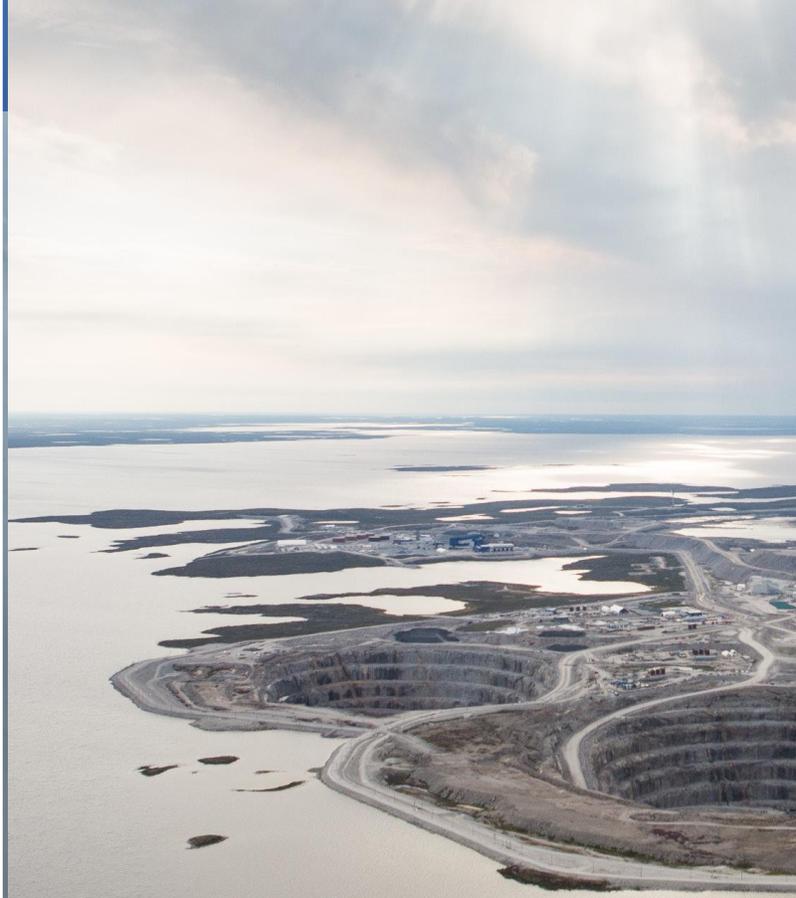
“We have tremendous geological potential in our eight geological provinces; a significant variety of mineral deposits can be found here, and our history has shown that”

– Tom Hoefer,  
executive director,  
NWT & Nunavut  
Chamber of Mines

“If you look at the mines currently being operated, developed or proposed, they run through tungsten, diamonds, iron ore, rare earth metals, gold, silver, uranium, lead, cobalt, bismuth, nickel, copper, zinc, and lead – it’s like the periodic table up here.”

The 2012/2013 Fraser Institute Survey of Mining Companies ranked Nunavut’s and the NWT’s mineral potentials (assuming no land use restrictions in place and assuming industry best practices) as the 15th and 17th most attractive of 96 global jurisdictions.

While the NWT’s and Nunavut’s geologies are well recognised, they remain the most under-mapped territories of Canada and massively underexplored to go with it. On the one hand, this requires mining companies to undertake more geo-scientific research at their expense; on the other,



DIAVIK DIAMOND MINE. PHOTO CREDIT: DAVE BROSHA PHOTOGRAPHY



PHOTO CREDIT: DAVE BROSHA PHOTOGRAPHY/DIAVIK DIAMOND MINE



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“The mines currently being operated, developed or proposed here run through tungsten, diamonds, iron ore, rare earth metals, gold, silver, uranium, lead, cobalt, bismuth, nickel, copper, zinc, and lead – it’s like the periodic table up here”

it improves the odds of finding large and valuable deposits near the surface.

### Obstacles to investment

Given the NWT’s and Nunavut’s mineral richness and sparse populations, it is unsurprising that mining is the North’s largest industry. More than \$60 billion of minerals – primarily diamonds, zinc, gold and lead – have been mined in these two territories since 1932 when commercial mining began. Today, they contain five mines: three diamond mines in the NWT, two of which – Ekati and Diavik, operated by Dominion Diamonds (TSX: DDC, NYSE: DDC) and Rio Tinto (ASX: RIO) – are world-class; the Cantung tungsten mine in the NWT, operated by North American Tungsten Corporation Ltd (TSX-V: NTC), which is the western



PHOTO BY/DIAVIK DIAMOND MINES INC



DRILLING AT CH-6 BULK SAMPLE TRENCH, CHIDLIAK PROJECT, NUNAVUT. PHOTO CREDIT: PEREGRINE DIAMONDS 2013

world's largest producer of tungsten concentrate; and the Meadowbank gold mine in Nunavut, operated by Agnico Eagle Mines (TSX: AEM).

Nevertheless, Hofer believes the NWT and Nunavut have a great deal more to offer that has been overlooked. "The irony is that we're a third the size of Canada, with a combined population of less than 75,000; so we're a massive area with very little development and infrastructure," he says. This means it costs mining companies more to access and operate within the region, but it also

means "many rich deposits still lie hidden beneath the land awaiting the intrepid explorer".

In addition, the regulatory environments in the NWT and Nunavut tend to be less straightforward than other jurisdictions, as they share decision making on resource development with Aboriginal governments. This approach is quite leading edge in Canada, if not the world, but is helping ensure Aboriginal residents are becoming significant participants in the industry. The Chamber is helping with this governance transition by working

with Aboriginal and public governments to reduce complexity and increase certainty in their mining policies. Simultaneously, the NWT government is working with the Canadian government to devolve responsibility for land and non-renewable resources to the NWT government, thus providing more local decision making and directing more mining royalties to Aboriginal groups. Nunavut is also aggressively pursuing the federal government for a similar devolution arrangement. This bodes well for future mining development.

At one time, the large Aboriginal population of both the NWT and Nunavut – approximately 50% and 80% respectively – had been another obstacle to development, primarily due to unsettled Aboriginal land claims. In Nunavut, this was largely resolved through the settlement of a single land claim that saw Inuit residents becoming the largest private property owner in Canada, with a significant portion selected for its mineral development potential.

“Over the last 30 years, our federal government has been negotiating Aboriginal land claims with Aboriginal groups, raising certainty around who owns what land, what role they have in resource management and how activities are controlled,” explains Hoefer.

“Nunavut is a unique region because there was only one land-claim group for that huge area,

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ETULU ANINGMIUQ IN THE MAROOKA, EQUIPMENT MOBILIZATION OVERLAND, CHIDLIAK PROJECT, NUNAVUT. PHOTO CREDIT: PEREGRINE DIAMONDS 2013

## The NWT & Nunavut Chamber of Mines

The Chamber was set up in February 1967 to promote the North and its mining and exploration industry to northerners, Canadians and the world. Operating out of offices in Yellowknife, NWT, and Iqaluit, Nunavut, the Chamber acts as the point of contact for the NWT and Nunavut mining industry. It speaks out on industry opportunities, concerns and issues, and advises governments, investors, the media, educational institutions and the public on industry positions and initiatives. The Chamber also researches current issues, arranges meeting and assists in organising special events such as the annual Geoscience Forum and Nunavut Mining Symposium. New members are always welcome

and that claim was settled. That creates a lot of certainty. The NWT has significantly more groups and we have settled half of the land claims there. It is a work in progress, but we're already seeing companies embracing Aboriginal participation in mining operations."

## Aboriginal development

Nunavut's one land claim was settled in 1993. The agreement shared resource management between Inuit land claimants and the territorial government, and required any company wanting to start a major project there to sign an Inuit Impact Benefit Agreement. Further to this, "the Inuit have produced a very progressive mining policy that helps reinforce investment certainty," says Hoefer. He adds that the Inuit are already reaping royalty benefits from the Meadowbank gold mine, which contributes about 20% of Nunavut's GDP.

The NWT, which has more Aboriginal diversity, has four settled land claims and approximately four still in negotiation. Thus far, the settled claims have resulted in the Canadian government sharing \$34 million in diamond royalties with land claimant groups.

In the 2012/2013 Fraser Institute Survey of Mining Companies, both the NWT and Nunavut improved their Policy Potential Index scores (assessing the attractiveness of mining policies)

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over the last year, with the NWT showing the greatest improvement in score and rank of all Canadian jurisdictions.

Hoefer says that mining has become "a game changer in improving the lives of many Aboriginal residents". The industry is the largest private-sector employer of Aboriginal people, and an economic study carried out by the Chamber in 2011 put figures to this fact. The study found that the NWT's diamond mines had created 19,000 person years of employment to date, half of which was Aboriginal. It also found that almost CA\$4 billion of the total \$9.3 billion spent had been with Aboriginal companies, which have grown significantly in numbers and business capacity – and thus success – over the past 15 years.

Since the 1990s – when Hoefer estimates "there were probably less than a handful of Aboriginal companies in the NWT that could work with industry" – the number of Aboriginal companies has exploded. Hoefer quickly lists more than 50 that were created within the last 15 years and

## The Diavik Diamond Mine

Located on a 20km<sup>2</sup> island in a 60km-long lake, the extraordinary 10km<sup>2</sup> Diavik Diamond Mine is truly a sight to behold. Constructing the open-pit mine on East Island required the waters of Lac de Gras to be held back by a 3.9km rock fill dike built into the lake, and that challenge was additional to those created by the environment's harsh sub-zero climate – it lies 220km south of the Arctic Circle.

Diamonds were first discovered at the site in the early 90s and deemed economic to mine in 1995. The mine began operating in 2003 as an unincorporated joint venture between operator Diavik Diamond Mines Inc. – a wholly owned subsidiary of Rio Tinto, owning 60% – and Dominion Diamond Diavik Limited Partnership, a wholly owned subsidiary of Toronto-based firm Dominion Diamond Corporation. In April this year, Dominion expressed interest in acquiring the controlling stake in the mine if Rio Tinto decides to shed its non-core operations.

Diavik began as an open-pit mine, but in September 2012 it transitioned into an entirely underground mine. It processes up to 2 million tonnes of ore annually, using a gravity-based process to separate the diamonds from the kimberlite host rock. From the point at which production began in 2003, it had an expected mine life of 16 to 22 years.

The mine's power is provided by the Diavik wind farm, which is the largest wind diesel hybrid power station in the world and Rio Tinto's first wind-generation facility. Comprising four 2.3MW turbines, the wind farm reduces Diavik's diesel usage by around 10% and its greenhouse gas emissions by 6%.



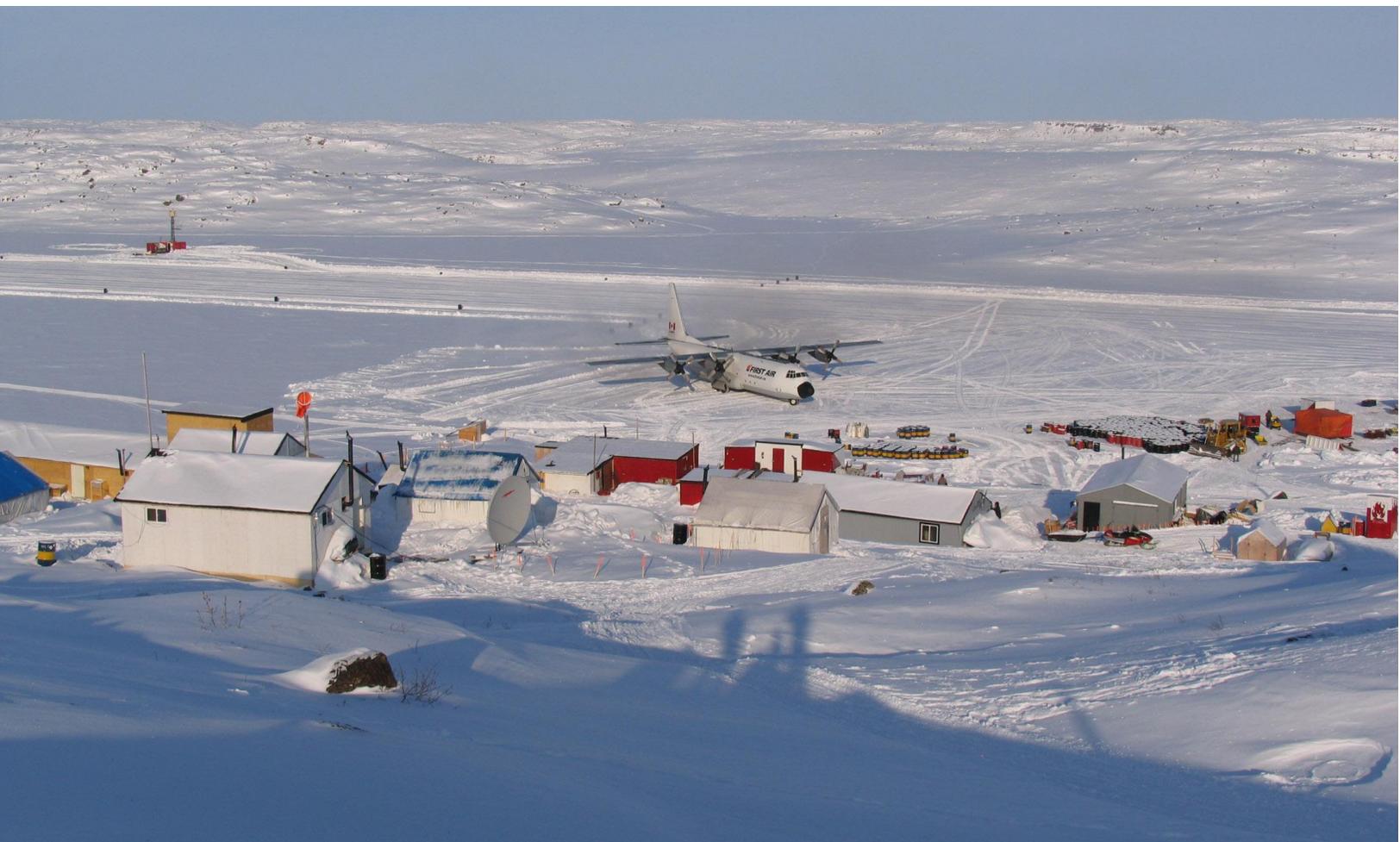
PHOTO CREDIT: DAVE BROSHA PHOTOGRAPHY/DIAVIK DIAMOND MINES INC



PHOTO CREDIT: DAVE BROSHA PHOTOGRAPHY/DIAVIK DIAMOND MINES INC



HIGH LAKE EXPLORATION CAMP. PHOTO CREDIT: MMG LIMITED



LANDING ON ICE - HIGH LAKE EXPLORATION CAMP. PHOTO CREDIT: MMG LIMITED

believes there are more out there: all of them “as self-sufficient, safe and well-managed as any other company”. He calls the growth and success of Aboriginal companies in the NWT “an unsung success story” that needs to be heard.

What’s more, the same thing is starting to happen in Nunavut, with a number of new 100% Aboriginal-owned companies emerging to work within and alongside the resources industry. “Aboriginal people are starting to become more and more part of the industry; they own it as well and we will continue to see proof of that,” Hoefler remarks.

## Benefits for all

Greater Aboriginal independence and success is just one of the many contributions that mining has made to the NWT and Nunavut. Diamond mines in the NWT have contributed more than CA\$100 million for communities, some of which has gone towards scholarships. Hoefler claims this level of benefit creation is significant nationally: “We are amongst the leaders in the country at this,” he says.

Mines in the NWT and Nunavut are operated to the highest of international safety and environmental standards, including ISO 14001 (Environmental Management), ISO 9001 (Quality Management) and ISO 18001 (Occupational

“Within the small communities in both territories, unemployment levels are between 50% and 80%... The mining industry is partnering with communities and government to build our northern education and training capacity, and this will help people to take advantage of the opportunities available”

Health & Safety) and, as previously indicated, offer significant opportunities for local people and businesses.

Hoefler says mining has many socioeconomic benefits, including training, business investment, job creation and tax revenue that governments can reinvest in communities to improve people’s lives. “For example, there’s an anti-poverty initiative underway in Nunavut, to which the solution is employment,” he explains. “Within the small communities in both territories, unemployment levels are between 50% and 80%. This tells you there’s a need for jobs, for which people need skills, education and training. The mining industry is partnering with communities and government to build our northern education



PHOTO CREDIT: AURORA GEOSCIENCES LTD

and training capacity, and this will help people to take advantage of the opportunities available.”

Mining contributes more to the NWT and Nunavut economies than any other private sector and makes additional indirect yet significant contributions to sectors such as real estate, transportation and construction. Furthermore, it is responsible for the construction of important infrastructure. For example, mining operations led to the construction of highways to Yellow-

knife, Pine Point and Fort Resolution; rail lines to Hay River and Pine Point; ports at Nanisivik and Polaris; and all three hydroelectric facilities in the NWT. Mining has also brought creative technologies, such as high-efficiency diesel power, wind technology, dikes and ice highways, to the North.

### **Developments on the horizon**

The Chamber’s priority is championing for mining in the futures of the NWT and Nunavut, whose



PHOTO CREDIT: AURORA GEOSCIENCES LTD

economies frankly hang in the balance given that the mines currently supporting them will one day close. While the Snap Lake diamond mine in the NWT should continue to operate until 2028, the Meadowbank and Ekati mines have until 2019 and Cantung has only two years' life ahead of it. Sustaining these mines and finding new projects is crucial, says Hoefer, if the two territories' economies are to maintain their newfound health and support future growth.

Fortunately, there are plenty of new projects currently at the pre-feasibility and environmental approvals stages that could become mines in the near future. "In the NWT we have six projects in development, which should benefit from a major regulatory reform coming in that will help provide certainty for investors," Hoefer explains. These projects are for base metals, gold, cobalt, bismuth, silver, rare earths and diamonds.

Nunavut has gold, base metals, uranium,



DRILLING AN ICE LENS AT CH-6, CHIDLIAK PROJECT, NUNAVUT. PHOTO CREDIT: PEREGRINE DIAMONDS 2013

diamonds and iron projects in development, some with the potential to open up significant infrastructural opportunities. “Nunavut has a tremendously exciting project in front of it right now, called the Mary River Iron Project,” says Hofer. “It’s a proposal to build a railway north of the Arctic Circle and a major shipping port that will ship iron ore out all year round. Iron looks set to be the new thing in Nunavut, adding to its anchor of gold.”

If the 10 projects in Nunavut become mines, they could lead to more than \$10 billion capital investment; more than 7,000 jobs at their peak; almost 100,000 person years of employment; and total project-life expenditures totalling \$35 billion.

The six mines proposed for the NWT could result in approximately \$2 billion capital investment; 1,650 jobs at their peak; 25,000 person years of employment; and total project-life expenditures totalling \$12 billion. “The challenge for us in the North is to try and get as much of this benefit to stick in our region, so as to help us build an even better future,” says Hofer.

### **The pursuit of independence**

While mining is certainly the NWT and Nunavut’s main industry, there is also significant opportunity in northern Canada’s oil and gas industry. Several years back there was a proposal for a 1,800km

natural gas pipeline running from the Arctic down to southern Canada, but this project fell through with the collapse of the natural gas price in 2012.

“A couple of years later, we’ve determined that we have shale oil in our territories and there is a huge exploration initiative underway in the central NWT that will see more than CA\$600 million in work commitments over the next five years on shale oil exploration,” Hoefer reveals.

“I think oil and gas production could certainly equal the mining industry and even surpass it, depending on the circumstances; we certainly have the potential in the ground, providing we can extract it.”

For Hoefer, every investment in the NWT and Nunavut is a step closer towards the North becoming financially self-sufficient. For a long time, northern Canada has been subsidised not insignificantly by southern Canadians and, as a Northerner himself, he is passionate about building on the North’s strengths: its people and resources. “Increasing our self-reliance is a noble goal; but I think it’s a traditional goal too,” he begins.

“Historically, Aboriginal people lived self-reliant lifestyles and I think regaining that is our goal. The resource industry has the horsepower to help make that happen... Ultimately, it is a tool for governments and the public to use to improve lives; whether through the provision of jobs, the

provision of business or the provision of products people use every day.”

## **An invaluable opportunity**

There are challenges to operating in the largely underexplored NWT and Nunavut, but through the hard work of the Chamber of Mines and the Aboriginal and public governments, these challenges are shrinking all the time. These challenges haven’t deterred companies such as BHP and Rio Tinto from developing world-class diamond mines in the territories, nor the companies currently developing the North’s mines of the future.

When it comes to the NWT’s and Nunavut’s total mineral content, the territories’ existing mines merely scrape the surface. Vast quantities and wide varieties of minerals lie in this large expanse of underexplored land. Those investing in it stand to reap spectacular benefits for not only themselves, but also the local people, businesses and communities whose livelihoods rely upon the mining industry. In the eyes of local people such as Hoefer, resources investors hold the key to enabling the NWT and Nunavut to stand on their own two feet – making it an invaluable opportunity for everyone involved. **IRJ**



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