

# MINING NORTH

## 25 YEARS OF DIAMONDS

DISCOVERY  
DEVELOPMENT  
ECONOMY  
INNOVATION  
LEGACY  
FUTURE



Diavik's Foxfire diamond.

SILVER ANNIVERSARY SPECIAL EDITION

# A MESSAGE FROM PREMIER BOB McLEOD

## Celebrating 25 Years of Diamonds in the Northwest Territories!

In the Northwest Territories, the land has given us what we need to sustain life. Over the millennium our relationship to the land has changed but one thing remains constant, we rely on the land for our economic survival.

This could not be more evident than with the discovery of diamonds 25 years ago. This discovery by Charles Fipke and his team near Lac de Gras triggered the largest staking rush in Canada's history and changed the future of the NWT.

The discovery was the catalyst for diamond mines that have now surpassed \$50 billion in produced mineral value, leading Canada to the top of the international diamond trade.

NWT residents, governments, and businesses across the NWT have benefitted greatly from the industry. Nearly \$12 billion has been spent to date with NWT businesses and service providers. Federal, Territorial, and Aboriginal governments have all realized fiscal gains from resource royalties and taxation on mining activities.

Through our Socio-economic Agreements with diamond producers, we have seen over \$100 million contributed to our communities through scholarships, benefit participation agreements, and donations, each bringing new opportunities to our residents.

And last, but most certainly not least, diamond mining has created 25,000 person-years of employment, nearly half of which has benefitted the Aboriginal residents of our territory.

These tangible benefits are easily recognized. But, as we celebrate this history, it is also important to recognize the areas of innovation and economic growth originating from, or enhanced by, diamond mining.

We lead the world in innovative ice road construction, which now drives our economic fortunes far beyond just mining. Aboriginal development corporations have grown to become multi-faceted investment corporations and northern and Aboriginally-owned companies make up nearly half of all business interests in the NWT.

As we welcomed Mountain Province and De Beers' Gahcho Kué mine to our mining community in September, we celebrated a planned 11-year extension of diamond mining in the Northwest Territories, and all the benefits I've listed here.

Our 25 years of diamonds has provided a solid, steady economic footing we maintain in this time of economic transition. As a government, we will continue to provide the investment required to foster a thriving future in mining.

Enjoy this magazine for its stories celebrating these 25 diamond years in our Northwest Territories, the visionaries and leaders who brought us here and the key players in our mining future.



Robert R. McLeod  
Premier



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## EKATI: It All Started Here

The name "Ekati" means "fat lake" in Tlicho, connecting the wealth of both natural and mineral resources: the prized fatty cuts of the caribou with the diamond riches, both from the land.

Found by junior exploration company Dia Met Minerals in 1990, it started production only eight years later with the financial might of world miner BHP

# DIAMOND DISCOVERY

## A new northern mining era

By Bill Braden

Twenty-five years ago, on the morning of November 7, 1991, a remarkable press release, just 66 words long, buzzed out of fax machines across the mining world. It announced, without fanfare, that 89 tiny diamonds had been found in a 59-kilogram sample of drill core pulled from a lonely outcropping at remote Point Lake in Canada's Northwest Territories.

"Some of the diamonds are of gem quality," it ended, as if it was holding its breath.

We know today that it was really a huge shout, the beginning of a rollicking and spectacular new chapter in Canada's already remarkable mining history.

Who could have guessed that 25 years later, the discovery would launch an industry that has so far yielded well over 200 million carats in exceptional rough gemstones, making Canada the world's third largest producer by value and transforming the NWT's lagging economy?

"If it hadn't been for diamonds, the NWT would be a basket case," says Dave Nickerson, an Arctic mining veteran with over 50 years' experience. Indeed, as gold and base metal mining was sunsetting in the 1990s, and with exploration drying up, it was a very welcome event.

The tale of that fateful discovery, by Canadian geologists Chuck Fipke and Stu Blusson, is one of the classics of Canadian mining legend. The two, both geologists and eventually partners, met in 1969 when Blusson, also a helicopter pilot, rescued the hapless Fipke from a mountain side where weather had stranded him for days. Their junior exploration venture, Dia Met Minerals, had for years been quietly trying to prove Fipke's crazy theory that the NWT's ancient, rocky backyard was hiding a treasure trove of diamonds.

Their epic search began in the early 1980s in the rolling hills near Norman Wells. What triggered Fipke's dream was the tiny, colorful bits of gravel called indicator minerals – evidence of a possible diamond deposit – scattered around the region. Those green, red and purple crystals told a story of hidden gems – but from where?

Diamond hunters like Fipke knew that 10,000 years ago, sub-arctic glaciers creeping westward had scraped up dirt from one place and carried it to another. His plan was simple but daunting: keep sampling that dirt by backtracking eastwards until he found the source. Usually broke, impulsive and hard to deal with, his quest was littered with misfortune, but his obsession and passion were to prove him right.

Fipke's quest for the source ended on a bitterly cold spring evening in early April of 1990. Frost-bitten, down to his last day of helicopter

time and running low on daylight, Fipke and two others hammered and chipped at an ice-caked gravel esker, uncovering gleaming green indicator crystals the size of peas. Twelve years and 700 kilometres from their start, they'd found it.

Months earlier, Dia Met had connected with trusted colleagues at Australian mining giant BHP Billiton for technical support. Intrigued with the find, the company supported a small diamond drill program in the summer of 1991. BHP's geology experts soon confirmed that Fipke had found some of the best diamond-bearing ground ever seen.

A few weeks later, as word of their secretive results leaked out, their hastily-created joint venture broke the news. And a mere eight years and \$1 billion later, they celebrated the opening of Canada's first diamond mine – Ekati.



Rough diamonds from the Ekati Diamond Mine.  
Photo courtesy of Dominion Diamond.

Billiton behind it. Today it is owned by Dominion Diamond Corporation, Canadian-owned and based in Yellowknife, with Stu Blusson, a Dia Met owner and one of the mine's discoverers, holding a minor position.

Ekati has produced over 63 million carats so far, harvested from seven underground

and open pit ore bodies. With the approval in 2016 of the Jay pipe, found under Lac du Sauvage, Ekati has embarked on a new road and dike development that will extend its mine life to an anticipated 2033 – far longer than any other known Northern diamond mine.

Measured in person-years for both direct

and contract workforce, the mine created 1,819 person years of employment in 2015, with over half (962) filled by Northerners. Its supply and service agreements with NWT businesses totaled \$258 million in 2015, more than half of the \$450 million total mine spending in 2015.

# HOW TO FIND, FINANCE AND FORGE A DIAMOND MINE

By Bill Braden

“If you want to hunt elephants, go to elephant country,” says Barrett Elliott, Diamond Geologist with the Northwest Territories Geological Survey. “It’s fairly rare but we’re fortunate enough to have a few of them in the Territories.”

No, it’s not about animal elephants. Elliot’s talking about diamond mines, and what makes Arctic Canada one of the world’s best places to find the really big ones. Here’s why.

Geologists know that about three billion years ago and in a layer as deep as 400 kilometres below the earth’s surface, tremendous pressure and heat slowly squeezed pure carbon into the crystals we call diamonds.

The oldest, deepest and most stable parts of the planet, called cratons, are found in Africa, Russia, Australia and Canada, where today’s great diamond mines are found. Around 500 million years ago, deep-rooted and powerful kimberlite volcanos burst through the deep diamond layer and violently crashed up through these cratons. Then like a gigantic pressurized cement mixer, they blasted through at the earth’s surface.

Here’s where the rare comes in: not all kimberlite volcanos carried diamonds, and not all diamonds survived the volcanic journey. If the kimberlites themselves escaped later geologic events like earthquakes, floods or ice ages, there is a slim chance some lucky prospector could find one. Of about 6,500 known kimberlites around the world, only 1,000 or so contain diamonds – and of these, fewer than 50 have become mines.

By the mid-1800s, prospectors discovered rich exposed kimberlites pipes, first and famously in South Africa. Most of the world’s pipes have been covered over by rocks, forests or lakes, and they’re really hard to find.

Enter the modern age of diamond hunting, with advanced geology and chemistry, amazing electronic gadgets, space age mapping, and the dream of profit - enormous profit, spurring the hunt.

Chuck Fipke proved that tracing a kimberlite’s indicator minerals backwards along the path of advancing glaciers – the indicator “train” – can be a key early clue in finding a potential mine.

Diamond hunters have assembled a powerful toolkit based on geochemistry to analyze samples and compare the results with other discoveries. Another essential tool is geophysics – the science of knowing how the earth and forces like magnetism and gravity work. From aircraft and satellite mapping, a kimberlite’s unique geophysical “signature” helps find deposits, even under water.

Diamond geologist Elliot expects new ideas about exploring for diamonds will keep coming. “There’s lots of potential [for more finds] in the NWT. You just have to develop new tools to find them,” he says.

All of this technology is still only the beginning of a mine. Teased by good signs, the explorer puts camps and crews in to do more detailed ground testing, perhaps leading to drilling. Hundreds of test holes and thousands of metres of drill core, often taking years to collect, could set the stage for the next, and very expensive, stage.

By now the stock market or a major company has been attracted, and will invest millions of dollars more for a bulk sample. This could mean building a small-scale mine to dig a few thousand tonnes for testing. Tens of millions of dollars and several years have been invested. It is still very risky, for a poor result at any stage could collapse the dream. A rough rule is that the chances of bringing any discovery to a full mine are 1,000 to 1. Long odds indeed.

How do they know if they’ve got good diamonds? Rough diamonds are graded into hundreds of categories for their color, clarity, size and shape, and measured by tiny weights called carats (a paperclip weighs about one carat). It’s the number of clear, larger (at least a millimeter) stones that make it rich, but even profitable mines have large amounts of flawed stones – too small, dirty, cracked, or off-colour.

Consider that in 2015, Diavik mine produced 6.4 million carats, and sold them for approximately \$1.19 billion Cdn – roughly \$185 per carat. It processed over 2 million tonnes of ore, averaging well over two carats a tonne! Only finding a needle in a haystack could possibly be more difficult.

Armed with a positive financial forecast, the explorer begins serious technical planning and financing. That includes applying for crucial gov-

ernment licenses to use the water and land. This stage, which includes feasibility studies, permitting and environmental assessment, will take millions of dollars more and usually at least three to as many 10 years to finalize.

This also requires building relationships with nearby communities and traditional users of the land to earn their support with job opportunities, social benefits, protection plans and royalties – payment for

harvesting diamond wealth within their traditional territory.

Gaining government licenses and community approval is the green light that triggers really big spending – for the NWT’s diamond mines, often \$1 billion or more, in a construction phase that will take another two to three years.

“There’s lots of potential [for more finds] in the NWT”

– Barrett Elliott

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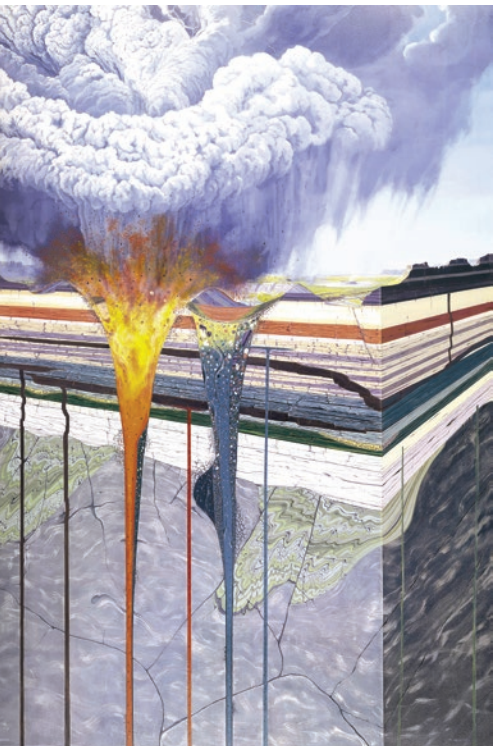


## Diavik Mine: A-21 extends mine life one year

Since opening in 2003, the Diavik Mine’s four rich kimberlite pipes have yielded over 100 million carats. It continues to produce about seven million carats a year – that’s over 1,400 kilograms! – and ranks Diavik fourth in the world by volume.

Junior exploration firm Aber Diamond Corporation, led by Gren Thomas, found

Clockwise: Soil Sampling provides key clues to possible diamond deposits. Photo courtesy of Aurora Geosciences. | An Aurora Geosciences technician on a gravity survey. Photo courtesy of Aurora Geosciences. | Patrick Evans, CEO of Mountain Province Diamonds, meets with Lutsel K'e on a community consultation. (Photo: Mountain Province Diamonds) | Tiny indicator minerals are the breadcrumbs that lead to kimberlites. Photo courtesy of billbradenphoto | Kimberlite volcanos brought diamonds to the surface in spectacular eruptions. Image courtesy of De Beers



the property in the mid-1990s on the shores of an island in Lac de Gras 300 kilometres north of Yellowknife.

The mine is now jointly owned - 60 percent by the British-based Rio Tinto Group and 40 percent by Yellowknife-based Dominion Diamond Corporation. In 2015 it employed some 1,134

workers, 546 of them NWT residents, and its operational spending pumped \$259 million into the NWT economy.

All of Diavik's pipes lie under the shallow waters of Lac de Gras. To hold the water back, massive earthwork dikes have been built around the kimberlites. The next pipe to be mined, called A21,

will begin production in 2018 after a major four-year diking project. Production will be completed in 2024.

Diavik's stones are renowned for their size and quality. The remarkable 187.63 carat Fox-fire diamond, recovered in 2015, is one of the largest yet mined in Canada.

# DECADES OF DIAMONDS ANCHOR THE NWT ECONOMY

By Bill Braden

As the North's diamond era passes the quarter-century mark, its effect on the pocketbooks and lifestyles of thousands of workers and families has been remarkable. "The diamond industry has transformed the entire territory, but really mostly in the remote communities," says Graeme Clinton, a Yellowknife-based economist. "All of a sudden there was an opportunity. A large scale employer which didn't require relocation, and which was ready to bend the rules on educational requirements."

In his report, "Choosing a Path Forward", commissioned by the Denendeh Development Corporation in January of 2016, Clinton says the discovery, and the hard-driving joint ventures that followed it, put new sparkle into a lagging economy.

"This growth was truly transformative for the economy and for some families, bringing hundreds of people into the workforce, lifting their families out of poverty, and setting them on a new path in terms of workforce participation, education, and standard of living."

The impact is real: income support payments are down and school graduation levels are up, along with what he calls the 'economic freedom of choice' to own a home, buy furnishings and a new vehicle, and choose where to live.

"But the transformation is not complete," he notes, observing that many Aboriginal people in the NWT still live in poverty. The wage economy has also, he says, brought its shares of challenges and tensions with social issues, crime and wide gaps in income levels.

Clinton reports another change in the economy lies with the industry's willingness to foster business opportunities and truly create independence within the Aboriginal communities. A number of successful Aboriginal service and supply companies and joint ventures conducted business worth over \$300 million in 2015.

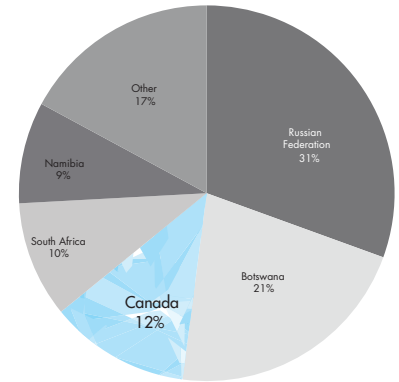
Beginning with construction of our first diamond mine, spending with Aboriginal business has totaled \$5.4 billion – almost a third of all combined expenditures.

The diamond era's arrival was nothing short of a miracle for Yellowknife, as it faced a bleak future with the closing of both the Giant and Con gold mines in 2002 and 2004 respectively. Hundreds of direct and indirect jobs were lost after 65 years of gold mining.

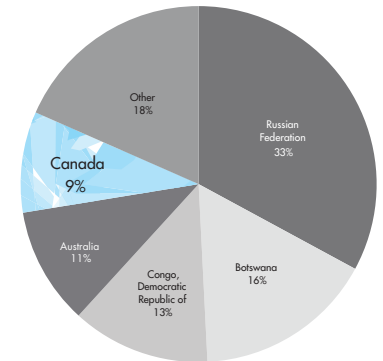
That changed over a few short years as the \$1 billion project to build the Ekati mine in the mid 1990s, soon followed by Diavik, rescued the city's future. Today there are about 1,000 direct and indirect jobs based in Yellowknife, with another 200 to 300 related jobs supporting the goods and services those workers buy.

The City of Yellowknife proclaimed itself the Diamond Capital of North America in 1999 to take advantage of the excitement. The economic impact from diamond mining is deeply woven into just about every other sector, says Nalini Naidoo, the City's director of communications.

2015 Production

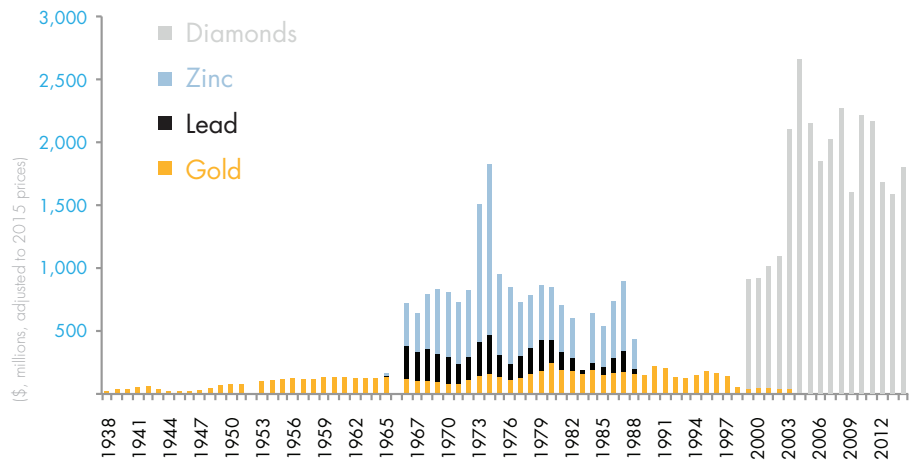


By Value US \$, Total = \$13,881,626,082.74



By Volume Total = 127,399,362.81

History of Mineral production in NWT 1938 - 2012



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## Gahcho Kué: World's Newest and Largest

The world's first big diamond deposit in 13 years began production just this summer and is expected to continue until at least 2028. The Gahcho Kué project, 280 kilometres northeast of Yellowknife, is a 51/49 joint venture between De Beers Group of Companies and Mountain Province Diamonds of Toronto.

“It definitely has a major impact on industrial, housing and employment sectors, and that’s really good for us,” Naidoo says, adding it has brought a distinct new culture into the frontier capital. “We’ve got people coming to live here from all over the world. We hear their languages. There’s a real benefit to that.”

On a wider scale, the impact of diamond mining on the NWT’s economy and society has been measured in many ways. For instance:

- The diamond sector’s share in the NWT’s GDP in 2016 will be \$564 million, of a forecast total of about \$3.85 billion.
- The Aboriginal high school graduation rate in 2002 was about 22 per cent. In 2014 it was about 54 per cent.
- In 1994, more than 10 percent of the NWT population received income assistance. Since 2007 it has levelled off at under six percent.
- About 5 per cent – 1,000 – of Yellowknife’s population has a direct or indirect diamond job. Relative to the smaller population, Hay River has seen an equal employment impact from diamond mining.
- Since 2001, northern resident employment at the mines has been steady at about 1,500, about half of that Aboriginal.
- Including oil and gas, the resource sector was 25 per cent of all value created in 2014.



## The Environment: Proactive Learning

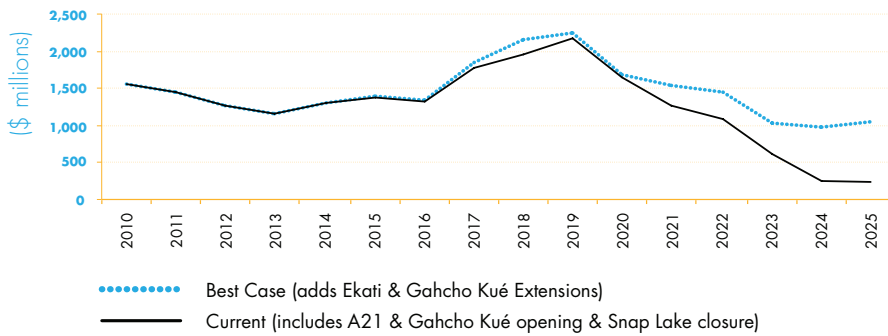
Diavik and Ekati last year earned the Mining Association of Canada’s sustainable environment award for research on grizzly bears, which showed populations are stable and may even be increasing in the region.

This is just one example of the commitment northern miners are making to the environment – going beyond the strict conditions they must follow, by being proactive and learning how the fragile arctic ecosystem works. Together with youth and elders from nearby communities, they exchange both scientific and traditional knowledge.

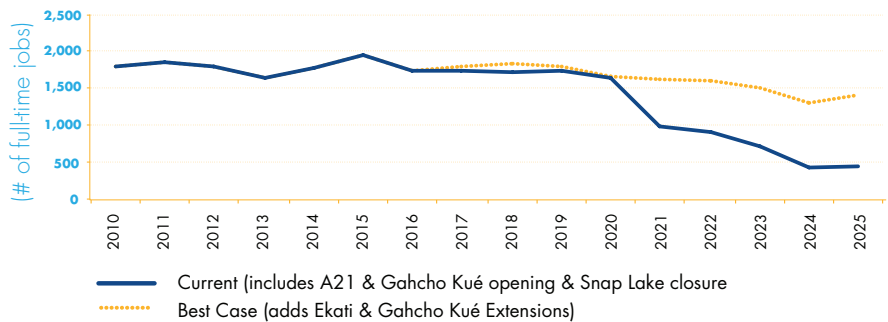
The North’s diamond mines, because of their remote locations in fragile ecosystems, take their responsibility to the environment seriously. All mining activity – from early exploration to mine closure – comes under close government and community review, monitoring and inspection. Indeed, how a project plans to manage and control its impact is a significant part of whether it gets regulatory approval.

Diamond mines have strict rules about wildlife. For instance, caribou always get the right-of-way on roads and workers are not allowed to hunt, fish or feed wildlife on site. Mines consume huge amounts of diesel fuel for power generation, but by capturing residual heat from gensets, (and at Diavik, building a large scale wind farm) they save money and cut greenhouse gas emissions.

### Mine-related NWT GDP



### Mine-related NWT Resident Employment



The mine takes its name from the Chipewyan language, meaning “the place of big rabbits.” It was first explored 20 years ago, and three of its four diamond-bearing zones will be mined by open pit. It opened formally on September 20, 2016, attended by 22 officials from the companies, government, First Nations and Métis on site to jointly cut the ribbon.

The state of the art process plant and infrastructure is the result of nearly \$1.3 billion (Cdn) in investment. Some \$440 million was spent in the NWT over the mine’s 10-year development. Its workforce will expand and level off at about 530, aiming to produce 4.5 million carats a year.

The opening is welcome news for De Beers and the NWT economy, which weathered a shock in December 2015 when the company announced the early closure of its unprofitable Snap Lake mine after just six years. Many of its employees have been offered steady new jobs at Gahcho Kué.

# Modern Mining: DRIVEN BY INNOVATION

By Bill Braden

Open up a diamond mine where? In the middle of what? The Canadian Arctic you say? Sober second thought would have stopped most folks right there.

But diamond hunters and miners are no ordinary people. Driven by the money and the challenge of the whole astonishing idea, they did it. In addition to the financial and technical might of three of the world's biggest mining firms, it took innovative thinking and teamwork from their leaders and employees to solve some of the problems of developing and operating a mine in a tough, frigid and expensive climate. Here are three of their novel solutions.

### Transportation: [The Winter Road](#)

By the mid 1990s, the incredible complexity of shipping materials to build very large mines 300 kilometres from the end of the all-season public highway became very clear. The only way

to do it was by sharing a fragile icy trail across the rocky, lake-strewn sub-arctic barren lands.

The solution – along with the endurance and ingenuity of the ice road builders – was teamwork among companies that were competitors on every other front. In 1997, they created the joint venture that today builds and operates the renowned Tibbitt to Contwoyto Winter Road, safely and efficiently moving some 8,000 heavy loads in a short eight-week transportation window.

### Energy: [The Diavik Windfarm](#)

The one constant in the Arctic is the wind. Harsh, unrelenting, brutal on both man and machine, a small team of engineers with Diavik Diamond Mine felt it also held tremendous potential to help power the energy-hungry mine. But nothing like it had ever been attempted in such extreme conditions.

After two years of research, the \$33 million project was approved. By 2012 the four, triple-bladed, 66-metre turbines were spinning, turning out up to 9.2 megawatts of clean energy, supplying 11 per cent of the mine's needs. It saves the equivalent of 55 truckloads of fuel (five million litres) of diesel fuel a year and could pay for itself by 2020, Diavik expects.

### Workers: [The Mine Training Society](#)

The mines, along with the Government of the Northwest Territories and communities, had high expectations that many Northerners would find good, steady jobs at the diamond mines. The challenge was that much of the Aboriginal population was chronically under-employed and lacked basic skills.

The innovative solution was a multi-faceted partnership among the mines, service companies, the community, territorial and federal governments and Aurora College to deliver entry-level training. It was tailored to supply the needed heavy equipment operators, cooks, and drill helpers. A resounding success, it has placed several hundred graduates in mine and related jobs in the past 15 years.



Clockwise from left: Diavik's four wind turbines sit atop 35-meter tall towers. Photo courtesy of Diavik Diamond Mine | Diamond driller helper course is one of many offered by the Mine Training Society. Photo MTS | Innovations at the corporate level shared the huge task of building and operating the winter road. Photo courtesy of TCWR



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## Safety: Growing a New Culture

Gone are the days when mining was regarded as one of most hazardous jobs for mine workers. The North's culture of mine safety has dramatically evolved with the coming of the diamond mining era.

Senior mining companies demand nothing less than an absolute commitment from their employees, themselves and their contractors to reducing harm and mak-



# Diamonds: A BRILLIANT LEGACY

By Bill Braden

Millions of dollars in community contributions from diamond mines are making a remarkable difference and leaving a lasting legacy in communities across the North.

In the summer of 2014, the Diavik Discovery rescue boat was launched at the dock in Yellowknife's Old Town. Two hours later, the state of the art vessel was called into action and rescued four people from a boat sinking 30 kilometres south of Yellowknife. Diavik's \$30,000 contribution to the Canadian Coast Guard Auxiliary's Yellowknife Marine Rescue Unit made it possible.

Each year since 2003, De Beers has given three books each to about 1,100 kids in NWT Aboriginal communities. Started by the Snap Lake mine, the Books in Homes project is founded on the belief "that literacy is the first step in empowering people to shape their own future." The idea was picked up by De Beers'

Victor Mine in Ontario, and the company says all the books given away to date (37,500 in 2014 alone) would be a stack 2.5 kilometres high.

Visually impaired and blind people have long counted on the Canadian National Institute for the Blind to help them cope. Dominion Diamond is behind the Tłı̄ch̄o Literacy Project. CNIB translated the New Testament and traditional stories into Tłı̄ch̄o, which can be read and heard by a special machine. Dominion's help enabled CNIB to support 150 people in several communities.

Corporate social investment is a requirement in all the mines' Socio-Economic Agreements (SEA) with the NWT Government, and Impact Benefit Agreements (IBAs) with Aboriginal governments. But as Dominion Diamond says in its 2014 report, "we are interested in additional meaningful investments beyond what is required."

The same can be said for De Beers Canada and the joint Rio Tinto/Dominion Diamond group at Diavik mine. Spending in recent years by all three totals some \$23 million annually.

They have funded a huge variety of actions and causes: community festivals like the Lutsel K'e Spring Carnival and Fort Simpson's Open Sky Festival; sporting groups like Champions for Children Kidsport and Hay River Women's Hockey; equipment like a new chemotherapy suite at Stanton Territorial Hospital and computers for Deninu School in Fort Resolution.

It doesn't end with cash. Employees from all companies are faithful volunteers at a host of events and programs. Diavik's project management team, in the early 2000s, put their skills to work to drive completion of the Side Door Youth Centre, Bailey House Men's Transition Home and community arenas in Yellowknife, and the arena in Lutsel K'e. Dominion Diamond has been an anchor contributor to the Khon Go Cho complex completed this fall in Behchoko.

Legacies like this will outlive the mines themselves, and continue to transform the NWT's communities and cultures across a very wide scope.



ing sure workers return home to their families healthy and whole.

For starters, new employees at all mines take a mandatory orientation course lasting several days, much of it enforcing individual and team awareness of working smart and safe. Employees can be penalized for seemingly small faults, such

as not wearing safety glasses and hard hats. Dominion Diamond has introduced programs aimed not only at the workplace, but which encourage workers to make healthy lifestyle choices as well. Dominion reports that in 2015, four out of five workers have picked up the WOW (Working on Wellness) message resulting in a drop in the Ekati

mine's all-injury frequency rate.

A worker's accident-free record is recognized in many ways, including cash bonuses. And the annual Mine Rescue Competition, sponsored by the NWT and Nunavut Workers Safety and Compensation Commission, tests highly-trained mine rescue teams from mines across the North.

# Diamonds: A FOUNDATION FOR FUTURE GROWTH

By Bill Braden

In the high stakes, high risk diamond mining world, it helps to be an optimist. Just ask Brooke Clements.

"It's striking that the first discovery was only 25 years ago," says the former president of Peregrine Diamonds, and of the NWT & Nunavut Chamber of Mines. "And here we are 18 years later, (after the Ekati opening) with two new mines (Gahcho Kué and Stornoway's Renard in northern Quebec) opening this year within a month of each other."

Along with Canada's five other diamond mines (three currently producing and two closed) says Clements, "that's quite a run."

The global supply/demand picture is improving and so will the NWT's future, he says. Supply will be squeezed as older mines close, consumer demand is growing and prices for rough diamonds – the uncut and unpolished stones that Canada's mines produce – are recovering. All this helps make expensive Northern projects possible.

Large-scale expansions at the Ekati and Diavik mines will open over the next two years, and two advanced exploration projects, Peregrine Diamond's Chidliak near Iqaluit, and Kennady, next door to Gahcho Kué, are among several others proving their potential.

A recent best-case forecast by Yellowknife economist Graeme Clinton suggests the NWT will see a \$500 million surge in GDP as Gahcho Kué's full impact takes hold by 2020 or so. As Diavik closes by 2024, employment and production will settle back to today's levels before all existing mines are slated to close around 2033.

But Clements sees a lot more potential.

"The positive is that it's a vast amount of land, that has the right geologic setting for diamonds, and I believe there's more to come," he says. As gem values increase, so will exploration, he forecasts, along with new technologies to find and produce diamonds. "If a couple more mines come in the next 10 years, Canada is really on the map," Clements says.

The developing northern diamond industry has already brought big changes and benefits to the NWT.

The NWT Mine Training Society is an outstanding example. A partnership of industry and government, over the past 12 years it has helped launch 1,300 mining-related careers, almost all of them from among the NWT's indigenous population. Its ambitious goal by 2020, says general manager Hilary Jones, is to train and place another 375.

Mining has fostered dozens of business start-ups in many communities. The North's aboriginal entrepreneurs and corporations have jumped in with both feet, earning \$5.37 billion from diamond mine spending – almost half the \$12.2 billion spent to date in the NWT.

The NWT's chronic infrastructure shortage has also advanced. The Dehcho Bridge, Diavik's bold \$30 million investment in wind energy, a seasoned aviation sector, and big improvements in year-round and winter roads have all been spurred by diamonds. The next decade could see a plan first set out in the 1950s: a road and port network to Grays Bay on the Arctic coast, a permanent asset of national importance.

A quarter century of diamond mining has created these remarkable legacies. They are the hard-won benefits of a shared vision for a sustainable mining future: each mine enhances the skills and adds to the capacity to find the next discovery that will lead to the next mine.



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## Training: A Vision Comes True

A key vision of the diamond era, for both industry and government, is that it will create satisfying and sustainable jobs for the North's under-employed aboriginal people. With serious commitment and major dollars on the table, they are realizing that goal.

One success story belongs to Shawn Catholique of Lutsel K'e. His path to a mining career began with introductory courses in underground mining,

offered by Aurora College and the NWT Mine Training Society. The three-month long program brought out his confidence, leadership skills and an immediate job with Procon Mining and Tunneling.

Shawn's story is just one of the several hundred placements the Mine Training Society has achieved since 2003. Another 2,200 residents (of all ages and backgrounds) have been coached and supported by the Society.

Internationally recognized for its innovative approach, the Society is a powerful partnership

among mining and supply companies, Aurora College and Aboriginal, territorial and federal governments. They have invested millions of dollars in designing programs to suit industry's needs, then recruited for a host of mine and related services including process plant operation, diamond drilling, heavy equipment operation and catering.

The mines themselves go far beyond this investment. They support new workers with a network of mentoring, job-specific training, apprenticeships and an impressive array of scholarships offered in communities across the NWT.

# NWT Diamonds History Timeline

**1969**

Stu Blusson, geologist and helicopter pilot, rescues Chuck Fipke from mountainside; form Dia Met to search for diamonds in 1980s in NWT.

**1990**

Fipke and two others find pea-size green indicator crystals near Point Lake. Dia Met contacts BHP Minerals.

**1991**

Dia Met finds diamonds near Lac de Gras, 300 km NE of Yellowknife, triggering the largest staking rush ever in Canada.

**1993**

BHP Minerals and Dia Met find three kimberlites with high grade diamonds.

**1994**

Aber Resources and Kennecott Canada find four kimberlites under Lac de Gras; start Diavik mine with Rio Tinto in 1996.

**1995**

Mountain Province finds two kimberlites at Kennady Lake; forms joint venture with De Beers.

**2010**

Ekati finds the 78-carat Ekati Spirit diamond; sells in 2011 for \$6 million.

**2012**

Dominion Diamond buys BHP Billiton's share of Ekati Mine; Dominion also owns 40 percent of Diavik.

**2012**

Diavik builds NWT's first wind farm with four turbines; saves 5 million litres diesel/year.

**2013**

Dominion files for permits for Jay pipe mine expansion.

**2014**

A diamond staking rush occurs around Ekati and Diavik and in the Kennady lake area.

**2014**

Diavik announces development of A21 kimberlite. Mine life extended to 2024.

**2015**

De Beers' stops work at Snap Lake in December; offers it for sale in 2016.

**2008**

Snap Lake opens as Canada's first all-underground diamond mine.

**2006**

Ekati starts underground mining in first two completed open pit kimberlites.

**2006**

De Beers operates Gahcho Kué; Mountain Province starts Kennady Diamonds as sole owner.

**2005**

De Beers files for permits for Gahcho Kué project at Kennady Lake.

**2003**

Diavik, Canada's second and highest grade diamond mine, starts production.

**2001**

De Beers buys Snap Lake deposit from Winspear.

**2001**

BHP Billiton buys Dia Met for \$687 million; Stu Blusson and Chuck Fipke retain minority shares.

**1998**

Canada's first diamond mine, Ekati, opens in October. Total cost about \$1 billion.

**2016**

De Beers begins production at Gahcho Kué. Official opening September 20, 2016.

**2016**

Dominion receives approval in May for the Jay pipe; extends mine life to 2033.

**2016**

Diavik - 100 million carats since opening in 2003. Ekati - 58.8 million carats since October 1998

**2016**

Kennady Diamonds moves project to advanced exploration phase.

**2015**

The Diavik Foxfire diamond, 187.7 carats, found in December.



# Not everyone who works in mining wears a hard hat.



**A career in Mining can mean a lot of different things,** but they all have one thing in common. Joining our industry can give you the better quality of life you're seeking for you and your family.

