

THE MINE THAT MADE THE NORTH — CASSIAR:

by Jim Hutson & Robin Brunet



"Cassiar has been a cornerstone for the far northwest British Columbia for over 40 years."

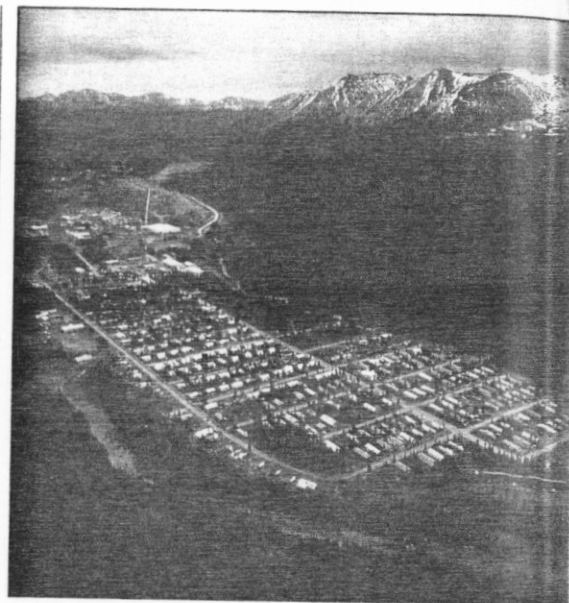
—James O'Rourke,
President and
Chief Executive
Officer, Princeton
Mining
Corporation.

PAST, PRESENT AND FUTURE

"It ain't over till it's over." Those memorable words were first uttered by Yogi Berra, legendary New York Yankees player-coach and renowned practitioner of the fractured phrase. And while the loquacious Berra undoubtedly had baseball in mind when he made the statement, it could just as well apply to B.C.'s mining industry.

A perfect example is Princeton Mining Corporation's open-pit asbestos mine at Cassiar in the rugged mountains of northern B.C.

In the early '80s, the mine — in operation since 1952 — was given a lifespan of no longer than 1990.



View of Cassiar townsite including mill and tailings pile.

If the operations had indeed folded then, the Cassiar Mining Corporation — a wholly owned subsidiary of Vancouver-based Princeton Mining Corporation — could have regarded the mine site as an unqualified success: It was the only operating asbestos mine in the Canadian Cordillera, and in recent years had become the second-longest continuing mining operation in the history of B.C.

In short, the Cassiar operation was an enormous economic asset to the province. In nearly 40 years it had mined about 40 million tons of ore, producing over a billion dollars of new wealth. It single-handedly created the community of Cassiar, contributed to the development of the northwest, and spurred the construction of the Stewart-Cassiar Highway (now an important alternative route to Yukon).

Fortunately, a 1978 drilling program at the 1 563-metre elevation on McDame Mountain, near where the existing open pit was located, extended Cassiar's longevity beyond anyone's expectations. In-fill drilling of the existing open-pit reserves unearthed a startling discovery: Substantial reserves located below the open-pit.

It means the Cassiar story isn't over — in fact, a whole new chapter is about to unfold. Here's a look at the past, present, and future of one of B.C.'s great mining stories.

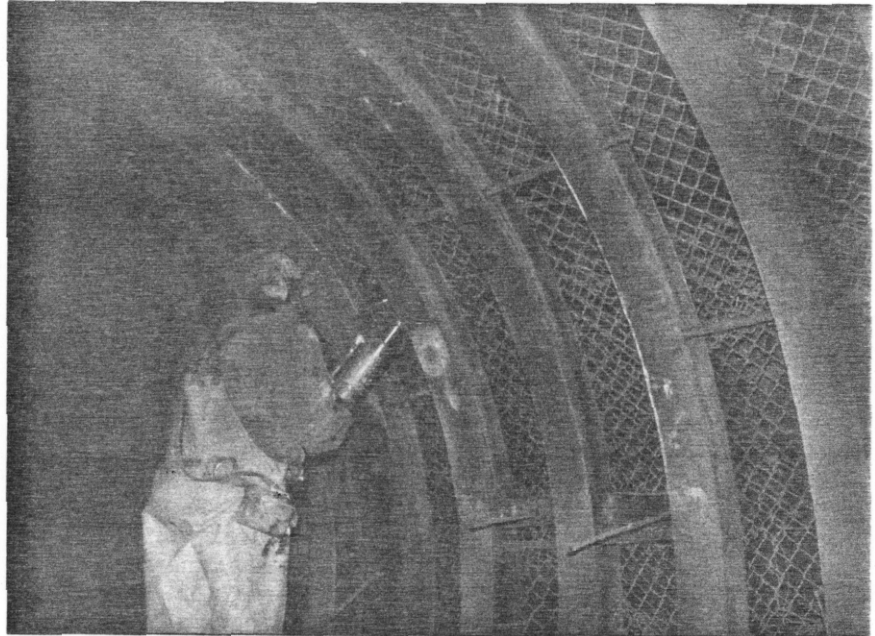
Past . . .

For centuries, the Native people of B.C.'s remote northwestern corner had known there was something magical about the mountain that would eventually be named McDame. On the north slope of the mountain, a yellowish-white "fluff" could be seen that was unlike any other substance they knew. Sheep would bed down on it for protection from the cold winter nights, and birds would use it to build their nests that could withstand the heat of fires.

But when the first prospectors came to Cassiar in the 1870s, they were not interested in the "wooly hill" to the north but were seeking gold in the region's plentiful lakes, rivers and creeks. The prospectors had seen the prominent green band of serpentine rock slanting across the face of the mountain, but instead, put all their energy into panning for gold. Through the 1870s and '80s, fortunes were made and lost in the area. Perhaps

the most exciting story of the day was the discovery of a 72-ounce solid gold nugget, the largest ever recorded in British Columbia. When the gold seemed to be exhausted, the prospectors grew frustrated and eventually left.

Sittler and Hiram Nelson and equipment operators Robert and Ronald Kirk staked the first claims on McDame in the fall of 1950. After recording the claims, the four rented a room in the Watson Lake Hotel across the border in



Steel arches erected for brow support at drawpoints.

PHOTOS COURTESY OF PRINCETON MINING CORPORATION

It would not be for another 40 years that activity in the area again was recorded. Prospector Antone Money explored McDame and noticed veinlets of asbestos where the schist and serpentine rock met. He peeled away some of the fibres from the green rock and later wrote, "Although transportation seemed far away from this isolated corner of wilderness, this could be an important discovery."

He was right on both counts. Twenty-eight more years elapsed before the importance of his discovery was noted, and modern mining techniques, and particularly, transportation routes, (such as the Alaska Highway and the Watson Lake airport, both built during the Second World War) had advanced enough to begin a serious re-evaluation of the site.

Prospectors Richard Victor

the Yukon and waited for the scouts to beat a path to their door. Alec Berry, a Conwest Exploration Company employee in Whitehorse, was the first to hear the news; he phoned company president Fred M. Connell at head office in Toronto. The rest, as they say, is history.

Connell quickly dispatched geologist Dr. William Smitheringale to examine the site. The established asbestos companies in Quebec, such as Johns-Manville and Asbestos Corporation, thought the deposit was too remote and delayed bidding on it; Conwest, which already had a stake in the United Keno Mine in Yukon, thought otherwise. Smitheringale took one brief look and recognized the enormous potential; he quickly left for Watson Lake with an offer of \$100,000 and 300,000 shares in a company to be formed. He arrived

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at the hotel and showed the four original stakers a briefcase bulging with \$1,000 bills. Conwest got the option.

Trails and roads were bulldozed through the swamps and by 1952, a tent town housing 250 men had been built. Antone Money's "isolated corner of wilderness" had changed in those 28 years.

A year later, the company's first production mill was placed in operation and asbestos ore began to be milled at 500 tons per day.

Most people today know the importance of asbestos — in fact, it has been known since 400 B.C., when the Greeks wove it into wicks for their temple lamps because it would not burn and provided an "everlasting light." No other natural product can withstand high temperatures and heavy pressures, resist weather, corrosion, vermin and fungi as asbestos can. It has saved countless lives and prevented billions of dollars in property damage.

Cassiar has become more than just a source of asbestos. It led to the birth of a community and a way of life for the thousands of residents who now live in the vicinity.

James O'Rourke, chairman and chief executive officer of Princeton Mining Corp., sums it up best. "Cassiar has been a cornerstone for the far northwest British Columbia for over 40 years. It's the only town in the area with sustainable activity such as a school, bank, hospital and social services. The Department of Highways recently relocated its offices there and overall, it's become a region primed for accommodating other industries."

Present . . .

By the early '80s, after almost 40 million tons of ore and about a billion dollars of new wealth were extracted from the mine, the Cassiar story seemed like it was reaching its conclusion. The open-pit reserves were nearly exhausted, and the unthinkable to the families

who had grown up in the community was starting to sink in: the mine might be coming to an end.

Of course, that all changed with the discovery of new underground reserves. By 1981, Cassiar personnel had confirmed that the deposit was indeed high-quality; its fibre being on par with the asbestos being mined in the open pit. The new deposit was named McDame, after the mountain it was discovered under.

By 1984, following numerous geological and engineering studies, Cassiar technicians established the size of McDame's mineral reserves at a healthy 16 million tonnes — enough to extend Cassiar's production success for at least a decade.

In December 1987, when the open-pit completion was in sight, a group of Cassiar employees, the B.C. government and the board of directors worked together on a new proposal, and a decision by Cassiar executives was then made to begin development of the McDame underground ore.

One hitch, however: the new deposit was also classified as very soft and fractured, requiring careful and complex mining techniques. Cassiar decided to use "block caving," a technique whereby various production openings in the mountain are made and ore is extracted from each opening sequentially, allowing overlying ore to cave and drop down to the openings.

"It's the lowest-cost underground mining method, ideal for a weak rock mass and a very large ore body," says McDame underground mining supervisor, Gerold Verret. "It's a difficult method to operate, as every step must be carefully controlled. A sequence has to be established where all underground openings are supported immediately following each metre of advance."

Load-haul dump machines will pick up the ore and transport it via ore passes to feeder breakers for crushing; conveyor belts then

bring it to the surface.

This operation has been regarded by industry veterans — not to mention Cassiar workers — as nothing short of a logistics challenge of almost Super Bowl proportions.

"McDame ground is very weak and it turns to mud very quickly with equipment traffic, especially when water is present," adds Verret. "In order to cope with the problem and maintain good productivity, concrete floors are made within the production areas. These floors will not only ensure the highest possible productivity, but also act as a support on the side walls."

Construction of the McDame facilities has been completed, and a full-day test production run in late October revealed that the yield and fibre quality were better than anticipated.

In total, a complete underground mine has been developed and the ore extraction conveyors, the crusher building, the relocated tramline loading terminal, the conveyor transfer tower, the main ventilation fans and an ore stockpile reclaim station have been installed to make the mine operable. Commissioning of the system began with the first underground ore delivery in early November.

And Future . . .

Full production was originally scheduled to begin at the end of September 1990, but a modified production procedure was implemented to increase efficiency over the longer term, and now full production is scheduled for the first quarter of 1991.

The total cost of the McDame project is estimated at approximately \$60 million. Partial financing comes courtesy of the B.C. government, through a \$20-million loan; the balance of the funding is provided by bank funding and from internally generated funds from open-pit fibre sales.

But the cost and difficulty of

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developing the McDame project have been well worth it for all Cassiar employees. When full production commences, it will mean an extended mine life and primary ore source in the region into the next century.

Fibre production is forecast to average 90 000 tonnes a year. The mine will be deepened at the rate of one level per year, and diamond drilling is expected to define additional reserves that were indicated through exploration drilling in 1988.

The discovery and production of the asbestos mine on McDame Mountain has had many ramifications. Foremost, it created a new community in the remote northwest corner of the province, originally providing a home for the mine workers, and later, their wives and children. Secondly, it provided a major spin-off to the local businesses in the area — including the Yukon and Alberta.

Also importantly, Cassiar's strategic location has become a hub for mineral exploration of the entire region, eventually resulting in the construction of the Stewart-Cassiar Highway and leading to the development of numerous projects such as the Golden Bear Mine near Telegraph Creek and the Erickson Gold Mine.

As Tom Waterland, president and chief executive officer of the B.C. Mining Association explains, "The Cassiar operation and community is the anchor point of the entire 75,000-square-mile northwest corner of B.C. The longer the mine is in production, the more economic development in the region will be possible.

"The area contains a wealth of mineral and forest resources, and Cassiar serves as an anchor point for the new industries as they come. With the new Cassiar underground mine we're almost assured that future development and further prosperity for the province's north will take place."

As Yogi Berra said, "It ain't over till it's over," and the challenges haven't ended. □



PRINCETON Mining Corporation

Princeton Mining Corporation is a diversified natural resource company with interests in industrial minerals as well as base and precious metals. The company has two wholly-owned subsidiary companies with mining operations in British Columbia.

Cassiar Mining Corporation's chrysotile asbestos mine is in the northern part of B.C., with annual asbestos production of approximately 100,000 tonnes and 1989 sales of \$70 million. The copper mine of Similco Mines Ltd. is located near Princeton B.C., with annual copper production of 57 million pounds and 1989 sales of \$70 million from copper and precious metals.

Princeton became the parent company following a corporate reorganization completed in December 1989.

Suite 2000 - 1055 West Hastings Street, Vancouver, British Columbia, Canada V6E 3V3
Fax: (604) 688-4769 Telex: 04-508664 Telephone: (604) 688-2511



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