Mt. Milligan

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The Mining Journal Limited 60 Worship Street London EC2A 2HD
Registered in London, England, No: 877552
MARCH 17, 1989

CONTINENTAL SEEKS TASTE OF SUCCESS

This week, Continental Gold Corp. is due to receive the necessary regulatory approval for the full merger with its 69% subsidiary, United Lincoln Resources Inc., following the thumbs-up from shareholders last month. The move will consolidate the group's 70% holding in the Mount Milligan gold project in British Columbia which has attracted considerable interest in recent weeks. BP Resources Canada Ltd (which is not subject to the attentions of RTZ Corp. plc) holds the remaining 30% equity.

Earlier this month Continental revealed that the drilling programme at Mount Milligan (*MJ*, December 2, 1988, p.437) continued to expand open pit reserves. Company chairman, Mr Robert Hunter described the Mount Milligan deposit as a porphyry sulphide "doughnut", with two established mineralized regions, the MBX and 66 zones, and a third area of interest to the west. A 55 m drill hole intercept in this latter area has revealed a possible new bulk tonnage copper-gold zone grading 0.32% copper and 0.2 g/t gold.

The MBX gold-copper zone lies on the eastern side of the "doughnut", and two deep drill holes recently intersected over 100 m of mineralized material grading up to 0.22% copper and 0.8 g/t gold at a depth of 130 m. The zone measures 480 m in length and 360 m in width. The 66 zone is a 390 m by 480 m disseminated gold deposit lying to the south which is open in two directions and at depth. Drill hole results include 2.3 g/t over 60 m at a depth of 135 m.

Continental believes that Mount Milligan contains well over 100 Mt of ore grading around 0.35% copper and 0.9 g/t gold. Based on an estimated recovery of 70% gold and 85% copper, Mr Hunter is looking for an eventual annual output of 74 Mlb (33,500 t) of copper and 200,000 oz of gold from an ambitious 35,000 t/d open pit (starting in 1991 at an estimated cost of $C150 million). Continental's projections indicate a gold production cost of $US41/oz after copper credits.

Understandably, Continental is concentrating all of its resources on Mount Milligan and last month granted Gigi Resources Ltd the right to earn a 55% stake in its Trophy gold project in north-western British Columbia in return for 200,000 Gigi shares. Gigi is also committed to spend $C0.5 million on the project this year, and a further $C5.0 million by the end of 1993.

After the re-organization, there will be approximately 7.0 million common shares (7.9 million fully diluted now and 13.0 million on production) in the 'new' Continental, with around one-third being owned by the directors. The new company has a capitalization in excess of $C21 million and the presence of $C3.0 million in the bank is unlikely to rush Continental into accepting joint venture assistance from any of the ten 'majors' reported to be interested in the Mount Milligan project, although Homestake Mining Co. already has a 12% equity in the company. □

METAL BULLETIN Thursday, March 9, 1989

Continental strikes rich at Mt. Milligan

CONTINENTAL Gold, a gold development company based in Vancouver, Canada, is pitching its future success on the massive Mt. Milligan project in British Columbia, said company president Bob Dickinson.

Continental was formed in February 1988 by Dickinson and chairman Hunter after leaving North American Metals, now a part of Homestake Mining. The latter also holds a 10% interest in Continental.

The company is currently involved in nine gold orientated jv projects in Canada. Dickinson, however, is convinced that the Mt. Milligan project is the one to concentrate on: "I'm 100% certain Milligan will be a major success," he said. The property contains over 100m tonnes of gold and copper reserves and is expected to produce 200,000 oz gold per year, and 74m pounds of copper annually when production at the open cast pit begins in 1992, making it the fifth largest gold mine in Canada.

Assuming ore excavation of 35,000tpd, Dickinson said the project will cost between $150-200m to develop. The jv partner in this instance is BP Resources Canada, which has a 30% interest in the project. Continental inherited the BP jv after acquiring control of United Lincoln Resources, which discovered the Mt. Milligan property. Shareholder approval for a full merger between Continental and Lincoln was granted last month and regulatory approval for the move is expected on March 15.

Financing of the project has been generated by European bank lending, the issue of 7m shares on the Vancouver Stock Exchange (Lincoln is listed on Nasdaq in the US), and by cash and stock payments from jv partners. Dickinson was reluctant to commit himself to future share issues fearing it would inevitably create share dilution and perhaps leave Continental open to hostile takeover bids. He is keen though to consider the issue of a gold loan in the future.

Pointing to the significance of the Mt. Milligan project, Dickinson said 10 large mining companies had signed a confidentiality agreement with Continental to look at the property. He added, however, the company was not looking to recruit any further partners to the project. Continental may develop sites in the USA. But "for the time being we will be concentrating 100% on Mt. Milligan," said Dickinson.

The Prince George
Citizen
TUESDAY, MARCH 14, 1989 50 CENTS

NORTH OF FORT ST. JAMES

Mine project proposed

by MALCOLM CURTIS
Staff reporter

Continental Gold Corp. of Vancouver says test drilling shows there are enough copper and gold reserves at its Mount Milligan property, north of Fort St. James, for a $150-million to $200-million open pit mine.

The company held a press conference in Prince George Monday to outline its plans, which call for work on a mine to begin in 1991 with production expected by 1992.

The project is a bulk tonnage, low-grade copper and gold deposit owned 70 per cent by Continental and 30 per cent by BP Resources Canada.

"This is not a Mickey Mouse project," said Bob Dickinson, Continental Gold's president.

Dickinson compared it to other similar copper mines in B.C., like the Brenda and Gibraltar operations. The difference is that Mount Milligan also contains enough gold reserves to make it the fifth biggest producer in Canada, he said.

With declining copper production in B.C. expected in two or three years, the Mount Milligan project is happening at just the right time, Dickinson said.

Continental Gold, listed on the Vancouver Stock Exchange where its shares recently traded at $3.25, expects to begin a feasibility study this fall after completing more drilling over the summer.

With $2 million in cash, the company plans to issue flow-through shares in June to raise a further $2 million to $3 million to finish its drilling program.

Current projections show a mine processing 35,000 tonnes of ore per day, yielding 200,000 ounces of gold and 74 million pounds of copper annually for 15 years.

Dickinson said the company has yet to get provincial approvals but no environmental concerns are expected.

He said the area is to be cleared of trees by Fletcher Challenge, the forest company.

The site is linked to Mackenzie by a forestry road. A short access road would have to be built to connect with another logging road to Fort St. James, but the the company has not yet determined which hauling routes it will use.

The mine would employ 350 people directly and create 525 spinoff jobs benefiting Mackenzie, Fort St. James and Prince George, the company said.

Continental is 10-per-cent owned by Homestake Mining Co. of the U.S.

Dickinson said Continental will receive final approval on Thursday for its takeover of United Lincoln Resources, another VSE company which originally explored the Mt. Milligan area.

Continental is also being listed this week on the U.S. over-the-counter share quotation system (NASDAQ), he said.

Officials are slated to outline their plans to the Mackenzie Chamber of Commerce today.

M. Milligan

New copper process

Cominco is seeking commercial opportunities for a new process that eliminates the production of airborne gases and particulates from the process of producing copper from concentrate. According to the company, its subsidiary Cominco Engineering has spent the past five years and C$30 million on the development and testing of the CESL hydrometallurgical process. Cominco says that the process is based on a unique combination of existing, proven process technologies brought together in a unique combination.

As the process is essentially self-contained, Cominco says a plant could be located anywhere, including on site at a mine or mill, which means companies could produce high-purity copper without the problems associated with disposing of significant amounts of sulphuric acid produced by a conventional smelter, or shipping concentrate to distant smelters.

The CESL process consumes very little water, which does not need to be particularly clean. Most of the acids are recycled and those that are not are neutralised into gypsum (which may be sold or disposed of). In addition, the process can convert arsenic into its most stable form – ferric arsenate, which can be disposed of as tailings.

Cominco has operated a pilot plant utilising the CESL process for the past two years and is currently in the process of commissioning a 500 t/y capacity 1:500 scale demonstration plant. To date, the demonstration plant has produced over 80 t of high-purity copper (99.995%) during the course of two extended process runs. According to the company, a commercial-scale plant could produce up to 100,000 t/y of copper.

D.H. Horswill, Cominco Ltd, 200 Burrard St, Vancouver, BC, V6C 3L7, Canada. Fax: (+1 604) 682 0611.

Eriez acquires Pulse Technology

Eriez Magnetics Europe Ltd has acquired the UK-based company Pulse Technology Ltd. Pulse was founded by David and Pamela Harverson in 1986 and manufactures a range of industrial metal detectors. According to Eriez, Mr Harverson will continue at Pulse as managing director and both companies will continue to operate from their existing locations.

Eriez Europe, part of the world's largest group of magnetic separation equipment manufacturers, says that both companies will benefit from the acquisition, working together to provide customers worldwide with magnetic separation and metal detection solutions.

Eriez Magnetics Europe, Bedwas House Industrial Estate, Newport NP1 8YG. UK. Tel: (+44 1222) 868 501. Fax: 851 314.

Carpco in the Ukraine

US-based Carpco Inc. has supplied separation equipment to the Irshansk mining complex in the Ukraine. The new equipment will improve the recovery of ilmenite from the mine, located 120 km west of Kiev. In addition to improving ilmenite recovery from Irshansk's ongoing operations, Carpco's laboratory and pilot-scale tests indicate that the operation will be able to increase its output further by reprocessing tailings accumulated over the past 40 years.

Under the terms of a turnkey contract and in conjunction with Pennwood Technology Group, Kerr-McGee and Consortium Concentrate, a US-Ukrainian consortium, Carpco has incorporated its modular plant advanced spirals and magnetic and electrostatic separators into the existing Irshansk operation.

Carpco Inc., 4120 Haines Street, Jacksonville, FL 32206. US. Tel: (+1 904) 353 3681. Fax: 353 8705. e-mail: carpco@carpco.com

Terex supplies Coal India

UK-based Terex Equipment has supplied Coal India Ltd (CIL) with two 85 t rigid dump trucks. The two Terex 3311E trucks were shipped to India in kit form and assembled by the company's new distributor in India, Larson & Toubro, before delivery to Coal India. Following the delivery of the two trucks, CIL ordered a further three 3311Es which Terex will ship as complete finished units from its plant in Scotland.

The company is currently holding negotiations with Larsen & Toubro with a view to re-establishing Indian manufacture of both 50 t and 80 t capacity rigid trucks. According to Terex, Larsen & Toubro has already established a manufacturing plant in Kansbahal and hopes to begin the manufacture of 85 t capacity trucks in India by the end of March 1998.

Terex Equipment Ltd, Newhouse Industrial Estate, Motherwell, ML1 5RY, UK. Tel: (+44 1698) 503 051. Fax: 503 201. E-mail: Debbie.Campbell@terex.co.uk

Belt scale from IDEA

Minneapolis-based Ramsey, a unit of Thermo Sentron Co., has developed a new idler scale for conveyor belts. The IDEA belt-scale consists of either one or two assembled scale modules. Each module contains a load cell mounted in a pivotless assembly with factory-installed overload protection. The system can weigh and total to a value within plus or minus 1% of a test value when calibrated against a known test weight or Ramsey's standard electronic calibration. The belt scale is combined with the company's new Mini 11-101 Integrator, which is a low cost microprocessor-based instrument.

Don Bina, Ramsey, 501 90th Avenue NW, Minneapolis, MN 55433, US. Tel: (+1 612) 783 2500. Fax: 780 2315. e-mail: dabina@ramseytsr.com

Bateman supplies second coal plant

Gold Fields of South Africa has contracted Bateman Minerals and Industrial to provide a second coal wash plant to its new Clydesdale coal mine. The washery is modular in design and will process 160 t/h of clean coal received from the existing plant, which was also supplied by Bateman.

The -40 mm coal is pumped via a mixing box to two dense medium separation (DMS) cyclones. The cyclones produce a 'low ash' (7% ash) product and the 'Cosmos' product - a high-quality steam coal suitable for domestic and export markets. The low-ash coal reports to the stockpile conveyor and the Cosmos product reports to the existing stockpile conveying system. The 76 t plant consists of two modules each 9 m high, 10 m long and 4 m wide, which can be easily dismantled for transportation to another location if required.

The first stage of the New Clydesdale coal washing plant consists of a single DMS cyclone which processes 180 t/h of -40 mm run-of-mine coal to produce a 10% ash product.

Cliff Shorter, Bateman Minerals and Industrial. Tel: (+27 11) 899 2623.

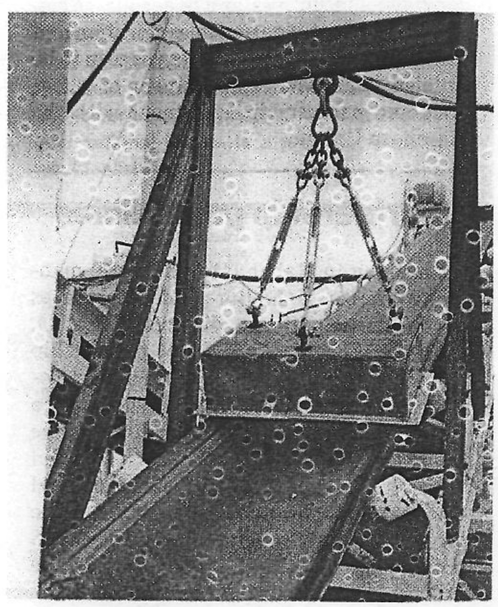
GEM introduces new range of tramp separation magnets

The Magnetics Division of Global Equipment Marketing (GEM) has introduced a new range of permanent suspension magnets. The new magnets require no electrical power and are maintenance free.

According to GEM, the magnets are designed to provide an alternative to self-cleaning magnets for companies and operations that experience only occasional ferrous tramp metals during their processing operations and do not require continuous cleaning, but wish to protect their crushers and grinders.

The magnets are available for conveyor widths ranging from 30 cm to 183 cm including those with deep product flows and high volume. The magnets can be suspended over the head pulley or parallel over the conveyor.

Magnetics Division, Global Equipment Marketing Inc. Tel: (+1 561) 750 8662. Fax: 750 9507.



A Global Equipment Marketing tramp separation permanent magnet.

out the year.

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See THREE, Page 2

...Copper Holdings, 47% owned by **Teck** (TSE),

1992 program will include definition drilling on open pit re-

Mt. Milligan decision threatens property market

by Vivian Danielson

VANCOUVER — Junior companies seeking to vend copper-gold porphyry projects to senior companies may face a tougher marketing challenge now that **Placer Dome** (TSE) has written off its $266-million investment in the Mount Milligan project north of Prince George, B.C.

Along with the writedown, the major decided not to develop a mine at Mount Milligan "at this time," because the economic return would not be sufficient to justify the $500-600-million capital investment required to develop the property (*T.N.M.*, Feb. 10/92).

Several juniors have put similar deposits on the block, the most prominent being the Fish Lake and Kemess South deposits, both in British Columbia. But mining analysts now expect the Mount Milligan writedown will have a sobering effect on senior companies looking at acquiring these or similar projects.

"Senior mining companies about to invest in these projects will now certainly want a long engagement before going to the altar," said Andrew Muir, a Vancouver-based mining analyst for Pacific International. "The writedown of Mount Milligan, along with the many mine failures and writedowns over the last few years, will remind the majors of the geological and engineering complexities of mineral deposits and the need for detailed assessment before commitment."

But Jeffrey Franzen, a former director of Continental Gold, is of the view that porphyry copper-gold deposits in British Columbia will continue to interest majors seeking to replace declining reserves. Franzen is part of the Robert Dickinson-Robert Hunter team which sold Mount Milligan and which is currently trying to vend the Fish Lake and Kemess South deposits.

Contrary to expectations, the share prices of companies involved in Fish Lake and Kemess South rebounded quickly from a selling flurry by nervous investors immediately after Placer Dome's Mount Milligan decision.

Taseko Mines (VSE) closed at $11.75 at presstime, a modest decrease from its recent high of $12.25. And the company is proceeding with plans to raise $10 million in two tranches in order to continue work at Fish Lake.

The first phase will be exploration-oriented and will involve a $5-million, 75,000-ft. drill program with three rigs aimed at stepping outwards in all directions to better define the deposit. "The objective is find the limits of the mineralization so we can design an open pit with an acceptable stripping ratio," Franzen said.

At last report, Fish Lake was estimated to contain preliminary reserves of 600 million tons grading 0.32% copper and 0.016 oz. gold per ton in a cylindrical-shaped deposit.

As operator and 60% owner of the Kemess South deposit further north in the province, **El Condor Resources** (VSE) considers itself well financed to start advancing the project to

See MT. MILLIGAN, Page 2

Northern Miner Feb 17/92

In order to earn a 51% interest in the property, Minnova must spend $4 million over four years and make cash payments totalling $400,000 within five years.

A claim dispute launched after the discovery by **Forbex Mining Resources** (ME) remains unresolved. The dispute covers 54 claims outside the discovery area.

To the immediate west, partners **Orient Resources** (ME) and **Commonwealth Gold** (VSE) say they will complete 5,000 ft. of drilling.

From Page 1

the feasibility, engineering and permitting stages.

The company's share price closed at $4.45 at presstime, in a 52-week range of $2.50 to $4.80. Partner **St. Philips Resources** (VSE) also held its ground at about $2 from a recent high of $2.35.

El Condor (managed by the Dickinson-Hunter team) recently reported that the Kemess South deposit hosts preliminary reserves of 252 million tons grading 0.23% copper and 0.019 oz. gold per ton. This compares to an estimate of 240 million tons grading 0.018 oz. gold and 0.224% copper calculated by Rio Algom, technical adviser (and shareholder) of St. Philips.

In a recent interview with *The Northern Miner*, Franzen conceded that the economic viability of Fish Lake and Kemess South will continue to be debated by industry skeptics, particularly in view of Placer Dome's Mount Milligan decision and current metal prices.

Credibility appears to have become a sensitive issue for the Dickinson-Hunter group because Placer's latest minable reserve estimate for Mount Milligan (329 million tons grading 0.22% copper and 0.013 oz. gold) did not match a preliminary evaluation at the time of acquisition in 1990 when minable material was estimated at 313 million tons grading 0.2% copper and 0.017 oz. gold. Both reserve estimates include the Main Mount Milligan deposit and the lower-grade Southern Star deposit.

"We don't know how Placer Dome arrived at a 0.017 oz. gold grade," Franzen said, adding that Continental's 1989 annual report and other documents quoted preliminary reserves (calculated by third parties) of 440 million tons grading 0.014 oz. gold per ton and 0.2% copper for the Mount Milligan and Southern Star deposits. Franzen also said Placer Dome evaluated the project for about six months before its buyout.

A Placer spokesman said the initial estimate was based on 406 drill holes, while the more recent estimate was based on more than 800 holes, or about double the data available at the time of acquisition.

Perhaps the biggest disappointment to Placer Dome, however, was that its work did not prove up any "blue sky" exploration potential it may have initially hoped the property had.

Copper and gold prices also declined since the acquisition, and Placer Dome's decision came as no surprise to most mining analysts. The news did not appear to affect Placer Dome's share price which held at about $12 in a 52-week range of $10.75 to $17.75. But the major has come under fire from mining analysts for its deal-making and risk management performance over the past year, particularly relating to Mount Milligan and Eskay Creek.

Placer Dome is continuing to re-examine its current assumptions on Mount Milligan — gold grade, mining plan, capital and operating costs and environmental issues — in order to enhance the economics of the project.

Mount Milligan ore is tough and hard with a high work index, and part of the increase in capital costs (from $440 million) reflects considerable investment that would be necessary to meet power requirements (both gas-fired turbines and backup hydro lines were considered). The increased costs also reflect increased grinding requirements in the large mill (the highest capital cost item) which was to feature at least three parallel grinding circuits.

And finally, Placer Dome spokesman Hugh Leggatt said environmental issues added to initial cost estimates, because of various technical concerns relating to tailings disposal and the high standards for permitting now required by the new Mines Act.

"Mount Milligan won't be developed in the next several years but we're not prepared to say we'll never develop a mine," Leggatt said. "We're expensing it like an exploration property because we won't see any immediate cash flow."

1-2) Dome Mtn. (93)

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Page 6

Flowery mine

Miramar has big plans for Nevada property

Page 17

Seneca project

New drilling program planned by Minnova

Page 20

e Northern Miner

Founded 1915

CANADA'S MINING NEWSPAPER

February 10, 1992

est: deep but rich

rtic, Que., as a geologist straight out of McGill sity. American Barrick d control of Camflo in er he had risen to mine r and eventually vice-president of operations in 1978.

The orebody verges on the unique with a minable reserve (proven and probable) of 7.2 million tons grading 0.63 oz.

See MEIKLE, Page 12

buoys Roundup

merica and in the for-viet republics. The min-ential of Greenland and were highlighted, and a of 60" display on min-ential in the Yukon and est Territories also at-plenty of interest.

xploration activity in Canada continued its end in 1991 from the levels of the late 1980s, ng to Bill Wolfe, outgo-sident of the British ia and Yukon Chamber s.

"Aside from a few special cases like the half-mile-long drill holes in the Fish Lake porphyry copper-gold deposit, 1991 was an uninspiring year for exploration in British Columbia and the Yukon," Wolfe said.

Only one new mine was opened last year; the Snip gold mine owned 60% by Cominco and 40% by Prime Resources Group. One former copper-zinc producer, Goldstream, was reopened, and a small gold mine (the SB joint venture in-

See CORDILLERAN, Page 2

Low grade, capital cost force Placer to shelve Mt. Milligan

by David Robertson

Fresh from hammering out a new agreement for the Eskay Creek joint venture project in British Columbia, **Placer Dome** (TSE) says it will not proceed with development of the huge Mount Milligan copper-gold project in that province at this time.

The company says that while prefeasibility studies indicate that a mine based on current assumptions but excluding acquisition costs would be profitable, "the return would be insufficient to justify the $500-600 million capital investment required to develop the property."

President Tony Petrina, at a press conference in Toronto, said the company plans to write off its $266-million investment in Mount Milligan in its 1991 fiscal year.

Placer acquired the property in 1990; it purchased BP Canada's 30% interest for $78.8 million and the balance from Continental Gold for $258 million.

Petrina emphasized that Placer is not shelving the project. "We still own the property and we will continue to work on it," he said.

Asked what would improve the viability of the project, Petrina said a reduction in the capital cost (by at least 10%) and a gold price above US$400 per oz.

At the time of acquisition, a preliminary evaluation estimated reserves of 313 million tons grading 0.2% copper and 0.017 oz. gold per ton. The current estimate, after additional drilling, is 329 million tons averaging 0.22% copper and 0.013 oz. gold.

The lower gold grade is a result of additional drilling which doubled the data available since acquisition and led to a revised interpretation.

According to the company, Mount Milligan contains recoverable resources of 1.2 billion lb. copper and 3 million oz. gold. The prefeasibility studies indicate that the gold can be produced at an average cost of US$195 per oz., based on a copper price of US95¢ per lb.

At an average milling rate of 76,000 tons of ore per day, annual production would average 100 million lb. copper and 250,000 oz. gold during the expected 12-year mine life.

In all, Placer plans write-downs totalling $397 million for 1991 (resulting in an after-tax charge of $328 million) and the company will report a loss for that fiscal year. (Complete financial statements will be re-

See MOUNT MILLIGAN, Page 2

Aber to survey diamond prospect

by Virginia Heffernan

Vancouver-based **Aber Resources** (TSE) is set to begin exploration on its diamond claims 200 miles northeast of Yellowknife, N.W.T., after purchasing all of the outstanding shares of West Viking Exploration, a private Ontario company.

West Viking's 350,000-acre claim package increases Aber's landholding in the prospective Lac de Gras area to 420,000 acres, or about 650 square miles. The claims are adjacent to the Dia Met/BHP-Utah discovery hole, which yielded 81 small diamonds — some of gem quality — from a 465-ft. core sample of kimberlite.

Aber also holds a 25% interest in another 400,000 acres of claims in the immediate area.

Aber President Gren Thomas said the company is planning a $1-million program to pinpoint kimberlite pipes on its property. A 4,000-mile airborne geophysical survey, including electromagnetics, magnetics and resistivity, will commence in March. The survey, expected to take

See DIAMOND, Page 2

support Martel's su

ng star within the New atic Party, Martel be- sixth minister in five be handed the mines when she succeeded uliot following a cabinet August, 1991.

elieves Martel is sym-to the mining industry

She also helped engineer t $95-million Northern Ontar Development Agreement, fun ed equally with the federal gc ernment, of which $30 milli was allocated to the mining i dustry (*T.N.M.*, Nov. 11/91).

But the 28-year-old mines mi ister has been fighting for her

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Diamond prospect

From Page 1

two months to complete, will be followed by ground geophysics, till sampling, mapping and drilling.

Fuel for the airborne survey and for summer follow-up work will be trucked along Echo Bay Mines' Lupin winter road, which passes within half a mile of the diamond discovery this month.

Under the deal between Aber and West Viking, Aber has issued 3.35 million common shares and 1.68 million warrants to West Viking shareholders. Each warrant entitles the holder to buy an additional Aber share for 60¢ by mid-June. Aber recently traded at $1.35.

Meanwhile, **Pure Gold Resources** (TSE) has acquired a 75% interest in 25,000 acres attached to the northeast corner of Aber's claim block. The property, which lies on the north shore of Tarpon Lake, will be subjected to airborne geophysics in April. **Westfort Petroleums** (TSE) has an identical agreement on a 25,000-acre patch next door while **Commonwealth Gold** (VSE) and **Venturex Resources** (VSE) share a strip of claims on the southern border of Aber's main property. Aber retains a 25% interest in all three claim blocks.

Repadre Capital (VSE), 49% owned by **International Corona** (TSE), holds a 1% net smelter royalty (NSR) on all of Aber's interests. Chris Jennings, one of the world's foremost diamond geologists, retains a 1.5% NSR.

TGS → MT. MILLIGAN

MINING

Placer has huge writedown

Mount Milligan project shelved

DAVID BAINES
Sun Business Reporter

Placer Dome Inc. announced Monday a massive $397-million writedown of its mining assets including all its Mount Milligan and nearly half its Eskay Creek gold properties.

The announcement not to proceed with the Mount Milligan project surprised some analysts.

Placer is writing off its entire $266-million investment in Mount Milligan and $50 million of its 22 per cent stake in Eskay Creek, originally worth $106 million.

"I didn't expect the company to write off its entire investment in Mount Milligan," said Andrew Muir, a mining analyst with Pacific International Securities Inc.

Muir said he had anticipated earnings of 50 cents a share in 1991 before any writedowns. Now he expects a loss of about 89 cents a share.

Placer Dome stock, which has traded as low as $10¾ during the past 52 weeks, was unchanged Monday at $12.

Placer Dome chief executive officer Tony Petrina accepted blame for the writedowns: "With any chief executive, the buck stops on his desk, there's no question about that."

Asked whether he believes his job is in jeopardy, he replied. "No I don't. You're the third reporter to ask me that."

Placer Dome acquired the Mount Milligan property from Continental Gold in 1990. At that time, estimated reserves were 313 million tons (284 tonnes) of ore grading 0.20 per cent copper and 0.017 ounces of gold per ton.

Reserves are now estimated at 329 million tons (299 tonnes) grading 0.22 per cent copper but only 0.013 ounces of gold.

"The reduced gold grade is a result of additional drilling, which has doubled the data available since acquisition," the company said.

Originally, capital costs were projected at $400 million, but that figure has since increased to $500 to $600 million.

"There's no question that part of the increase in capital costs was for environmental considerations, but that was not the major factor," Petrina said. "If original grade estimates had been correct, we would certainly be going ahead with the project."

Placer Dome also acquired its interest in Eskay Creek in 1990. At the time, estimated reserves were 4.5 million ounces of mineable gold and silver (expressed as a gold equivalent) and was based on open pit mining concepts.

Since then, International Corona Corp. — the property's majority owner — has reduced reserve estimates to 3.1 million ounces using underground mining methods.

"The change in concept from open pit to underground mining was a result of the potentially high cost of environmental protection associated with an open pit," the company said.

The company has also written down its 64 per cent interest in the Paymaster gold project in Timmins, Ont., by $31 million, its Dona Lake, Ont., mine by $30 million and the Sigma mine in Quebec by $20 million.

JUDY LINDSAY

The Sun. Feb. 4/92

Milligan mine turns out to be no piece of cake

WHAT WE'RE seeing with Placer Dome's decision to write down acquisition costs of Mount Milligan and Eskay Creek is the humbling of a major mining company.

Vancouver-based Placer is one of North America's premier gold producers, its mines dotted around this continent, Southeast Asia and Australia. But overconfidence in its ability to turn properties lightly dusted with gold into money-making mines caused the company to stumble in its own back yard.

Of Mount Milligan, president Tony Petrina says, "We have done it many times with large, low-grade deposits, particularly in B.C. We just think it's a piece of cake to move large tonnages and extract profit from relatively low-grade deposits."

The men at Placer now know that Mount Milligan ain't cake. With $266 million taken off 1991 earnings, this knowledge has come at quite a price.

Their plans to turn this huge copper-gold property in north-central B.C. into one of the province's biggest mines have stalled for a number of reasons.

The grade has turned out to be lower than they thought when they bought the property a couple of years ago.

Petrina says they're still not sure of the grade and drilling is continuing.

If the price of gold was higher, Mount Milligan would look more attractive. But at $350-$360 US an ounce, gold is just too low to support a mine there.

The ore is harder than originally believed, pushing up operating costs.

And today's tougher environmental standards mean capital costs will be higher.

Placer will continue working to bring Mount Milligan to the point of production.

Eskay Creek, another disappointment, is a case of bad strategy. The company paid $105 million for a 22-per-cent direct interest in the small but rich Eskay Creek gold-silver deposit. The company was thwarted of its goal of owning 50 per cent, and reserves are lower there as well.

A writedown of $50 million appears to confirm mining analysts' calculation that Eskay — after acquisition, feasibility study and capital costs are taken into account — would add little or nothing to Placer's bottom line.

Part of the motivation for pursuing Eskay and Mount Milligan, Petrina explains, was to fill a gap that was developing between properties already in production and properties in the early development stage.

Sound theory. But they overpaid for what they got, and mismanaged their dealings with Eskay's main shareholder, International Corona.

To try to soften the bad news about Mount Milligan, Placer made sure it had some good news to deliver Monday. A new zone at the Cortez Mine in Nevada, 60-percent-owned by Placer, will substantially increase gold reserves.

Despite successes elsewhere, the costly mistakes made on the two B.C. properties tarnish the reputation of Placer management and have led to rumors that there's a move within the board of directors to have Petrina's head.

However, the board is said to be split between directors who support Petrina and those who don't.

The man on the hot seat, saying he's unaware of any division within the board, is philosophical. "If the board is unhappy enough with me, they have demonstrated their ability to deal with hassle."

In fact, Petrina's predecessor departed when the board objected to the direction in which he was taking the company.

A writedown "looks like hell," Petrina says, but adds that Placer is a strong company and is working on good prospects.

Its gold reserves at the end of 1991 are higher. Production is up, costs are down and Placer still has around $700 million in cash.

Placer will survive these setbacks. It remains to be seen if Petrina will. Meanwhile, there's some humble pie to be eaten.

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

Geological Survey Branch

301 - 865 Hornby Street

Vancouver, BC

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FAX FROM: (604) 775-0313

FAX TO: 356-8153

DATE: February 4/92

TIME: 11:00

Please deliver the following message:

TO: Vic Preto

FROM: J Bobie

COMMENTS: from Tom

Number of pages 3 includes cover sheet.

FINANCE

M. Milligan

PLACER AFTER ESKAY CREEK

Canadian stockbroker Richardson Greenshields has published a research report on Placer Dome, and the aftermath of the company's withdrawal from Eskay Creek. Last month Placer announced that it would not proceed with its active involvement in the project (*MJ*, December 20, 1991, p.453). Richardson Greenshields concurs with this decision, noting that if Placer had funded the full $C240 million cost of the project it would have received only nominal net earnings. Richardson Greenshields goes on to evaluate Placer's two largest remaining projects; the Mount Milligan and Andacollo copper-gold ventures.

The wholly-owned Mount Milligan project was acquired for a total of $C258 million from BP Resources (which held 30.2%) and from the takeover of Continental Gold (69.8%). As yet, Placer has not detailed the results of its feasibility study but has suggested that preliminary studies envisage an operation producing 60,000 t/d at a 2-for-1 strip ratio, yielding an annual 280,000 oz of gold and 80 Mlb of copper for an estimated life of 15 years. The capital cost of the mine is put at $C440 million, with a production start-up during 1994 on the Southern Star deposit.

Richardson Greenshields concludes that "it is difficult to see the viability of Mount Milligan". Assuming a gold price of $380/oz and $1.25/lb copper, the mine would contribute initial earnings of about $C0.05/share at an exchange rate of $C1 = $0.8. At a Canadian exchange range of $0.9 (the rate is currently $0.88) there would be no earnings. Richardson Greenshields predicts that Mount Milligan would need $400/oz gold, $1.50/lb copper and an exchange rate of only $0.80 for Placer to achieve a 15% rate of return. Accordingly the stockbroker believes that "the market would react negatively if the project were to proceed at this time".

In May last year, Placer announced that its wholly-owned subsidiary in Chile had been awarded the right to evaluate the Andacollo porphyry copper project. The operating company is owned 80% by Placer and 20% by ENAMI, the Chilean state-owned mining company. Placer paid $1.2 million for the right to evaluate the property, and must contribute $4.8 million to the capital of the new operating company.

The property has a resource previously estimated (by a Noranda subsidiary in the late 1970s) at some 250 Mt grading 0.6% copper and a "significant" gold content. Placer is currently conducting its own feasibility study, which is due out in the middle of this year. Richardson Greenshields evaluated the project assuming a 50,000 t/d open pit mine developed at a capital cost of $400 million and operated for 13 years starting in 1995. It is assumed that the project is 100% debt financed at an 8% interest rate, and that the average operating cost is $5.50/t of ore processed.

The projections indicate the importance of attempting to develop an 'enhanced' grade schedule for Andacollo. At an assumed average grade of 0.6% Cu and 0.24 g/t Au, the mine would only achieve initial annual earnings of some $0.11/share and a pre-tax present value (at a 15% discount rate) of $0.39/share (taking $1.25/lb Cu and $380/oz Au). If the mine is 'high-graded' during the early years (1.4% Cu in year one, 0.9% in year two and 0.8% for the next two years) then earnings in the first year jump to $0.70/share and the mine's present value to $1.12/share.

Richardson Greenshields summarizes its report by noting that the economics of Mount Milligan look "very slim" at current metal prices, and that the Andacollo copper project looks to be potentially the most significant of Placer's current projects. However, Andacollo is overwhelmingly a copper project and should attract share price multiples of less than ten-times earnings. The stockbroker comments that, under a high-price copper scenario, a purer producer, such as Phelps Dodge, may be more attractive. □

SHARE PRICES AND EXCHANGE RATES

Company	Jan. 7 Local	% Change week	Dollar	$ hi-lo
Alcan Aluminium ($C)	23.00	-1.1	20.18	37
Alcoa ($)	64.50	0.2	64.50	58
Alusuisse (SF)	870.00	-3.3	644.44	22
Amax ($)	18.38	-8.1	18.38	21
American Barrick ($C)	30.75	-3.9	26.97	93
Anglo Amer. Coal (R)	123.50	-0.2	39.21	80
Anglo Amer. Corp (R)	125.50	1.0	39.84	89
Anglo Amer.Gold (R)	213.00	-1.8	67.62	50
Anglovaal (R)	68.73	0.0	21.82	73
Asarco ($)	21.13	-1.2	21.13	19
ASA ($)	47.00	0.3	47.00	40
Ashton ($A)	1.30	0.0	0.98	15
Barlow Rand (R)	52.25	4.5	16.59	87
Battle Mt Gold ($)	7.13	-9.5	7.13	24
Broken Hill Pty ($A)	13.90	1.2	10.53	69
British Petroleum (£)	2.46	-16.0	4.62	0
Cleveland-Cliffs ($)	36.63	1.4	36.63	100
Cluff Resources (£)	0.34	-10.5	0.64	0
Comalco ($A)	3.80	1.6	2.88	36
Cominco ($C)	21.13	-1.2	18.54	22
Corona Corp Int. ($C)	6.49	-0.3	5.70	2
CRA ($A)	12.72	5.1	9.64	65
Cyprus Minerals ($)	22.63	-1.1	22.63	75
De Beers Centenary (R)	91.75	1.4	33.49	90
Denison Mines ($A)	0.24	9.1	0.21	7
Echo Bay Mines ($C)	8.00	-7.3	7.02	0
ERA ($A)	1.26	-3.1	0.95	0
E.C.C. Group (£)	4.90	3.8	9.21	100
Free State Cons (R)	26.50	-0.9	9.67	79
Freeport McMoRan ($)	41.00	4.1	41.00	97
Gencor (R)	10.57	0.0	3.36	40
GFSA (R)	76.50	-0.6	24.29	64
Hanna Mining MA ($)	21.50	7.5	21.50	47
Hemlo Gold ($C)	9.85	4.1	8.64	42
Homestake ($)	14.75	-7.8	14.75	13
Impala (R)	37.11	-0.3	11.78	0
Inco ($C)	34.88	-1.0	30.60	50
Johannesburg Cons. (R)	54.19	0.0	17.20	93
Kerr McGee. ($)	38.00	-1.6	38.00	19
Kidston Gold Mines ($A)	2.28	1.8	1.73	87
LAC Minerals ($C)	8.75	-4.2	7.68	39
Lonrho (£)	1.76	13.5	3.31	19
Magma Copper ($)	5.25	-10.7	5.25	39
Malaysia Mining ($M)	1.82	5.4	0.68	38
Metallgesellschaft (DM)	385.50	0.0	253.62	22
MIM Holdings ($A)	2.28	1.8	1.82	97
Minorco (£)	7.27	-4.6	13.67	49
Newmont Gold ($)	39.75	7.8	39.75	60
Newmont Mining ($)	40.00	-0.9	40.00	63
Noranda ($C)	18.50	-0.7	16.23	64
Nord Resources ($)	6.63	17.8	6.63	24
North Broken Hill ($A)	2.60	8.3	1.97	85
Northgate ($C)	0.75	0.0	0.66	1
Pasminco ($A)	1.45	-3.3	1.10	38
Phelps Dodge ($)	66.25	-1.1	66.25	51
Placer Dome ($C)	11.50	-8.9	10.09	0
Placer Pacific ($A)	2.92	-1.4	2.21	69
Preussag (DM)	315.00	2.9	207.24	77
Rand Mines (R)	65.45	0.0	20.78	59
Renison ($A)	4.90	-1.0	3.71	6
Reynolds Metals ($)	51.50	-6.4	51.50	28
Rio Algom ($C)	16.63	1.5	14.59	27
Royal Dutch/Shell (£)	44.48	0.0	83.62	100
RTZ (£)	5.00	5.9	9.40	69
Rustenburg Plats. (R)	59.50	-0.6	18.89	37
Teck ($C)	18.25	0.7	16.01	6
Trelleborg (SK)	103.00	6.2	18.63	30
Western Mining ($A)	4.57	-1.5	3.46	37

Share prices and exchange rates, as at close of business on Tuesday.

100 in the high/low column indicates that the share is trading at a high, 0 that it is at a low. Figures are based on dollar prices over the past 52 weeks.

Currencies January 7

Value of	£	$(US)
$ (US)	1.88	-
$ (Australian)	2.48	1.32
$ (Canadian)	2.14	1.13
$ (Malaysian)	5.08	2.70
Franc (French)	9.74	5.81
Franc (Swiss)	2.54	1.35
Kroner (Swedish	10.40	5.53
Deutschmark	2.86	1.52
Yen	232.74	123.80
Rand (Commercial)	5.15	2.74
Rand (Financial)	5.92	3.15

DEGUSSA FOCUS

Frankfurt-based Degussa AG has described the past business year as "particularly difficult" but says that it will continue with a previously announced corporate restructuring. Degussa plans to focus upon its traditional operating areas, and will concentrate upon operations at fewer locations, reducing fixed costs, and increasing organizational effectiveness. In the metals sector, Degussa's precious metals division reported improved results while the Leybold group suffered a heavy loss due to the collapse of the east European markets, the ramifications of the Gulf War and the U.S. recession. Total sales in the sector fell 8% to DM7,441 million (out of the group's DM13,350 million). □

Placer Dome estimates $420 million for Milligan

VANCOUVER — It will cost an estimated $420 million for **Placer Dome** (TSE) to bring on stream the Mt. Milligan gold-copper deposit north of Prince George, B.C.

That's over and above the approximate $255 million the major company paid in 1990 to acquire the advanced exploration project from BP Resources Canada and Continental Gold.

Although a production decision awaits the completion of a feasibility study later this year, Placer Dome released a summary of its stage one report which outlines proposals for construction of a mine at the Mt. Milligan property.

The report was used as part of the recently completed public consultation process, and Placer Dome now hopes to receive government approval-in-principle for the project in mid-July.

Placer Dome said Mt. Milligan will be designed with standard mining and milling technology commonly used at other open pit mines in the province. But the design will also reflect the company's objectives to maintain the integrity of the natural environment and to ensure that economic and employment benefits accrue to people living in the surrounding region.

Placer Dome is proposing to mine and process 60,000 tonnes per day of copper-gold reserves to produce 200,000 tonnes per year of copper concentrate over an operating life of at least 14 years. Annual operating costs are estimated to be $115 million.

This plan is based on preliminary reserve estimates which indicate the porphyry-type deposit has 300 million tonnes of minable reserves grading 0.23% copper and 0.56 grams gold per tonne.

Assuming a positive production decision, the development plan is to begin construction in the summer of 1991, and begin production in the second half of 1993. Construction will create 1,200 person-years of on-site employment, with the maximum number of workers peaking at 700 in mid-1992. The operating workforce, excluding contract employees, is expected to number 369 people.

On the mining side, the pit design provides for a 5-stage pit development to allow for the mining of the more profitable ores in the first years of operation. When fully developed, the pit will cover an area of 2.6 sq. km, and reach a depth of 325 metres.

Geddes

From Page 1

Little, Gordon Montgomery and Alan Savage have all announced their retirements. Michael Carter, a long-serving director, has left the board to pursue projects in Hungary. They have been replaced by John Kachmar, chief operating officer of **Northgate Exploration** (TSE) and Howard Cadinha, president of two oil and gas companies.

Harper says he would not be surprised if the second stage of the 3-stage assessment process took up to two years to complete. The study will include more detailed examination of such things as a waste rock disposal, water management and closure requirements.

Under a revised mine plan submitted to the government in December, 1990, minable reserves at Windy Craggy are estimated to be 131 million tonnes grading 1.8% copper. At a production rate of 30,000 tonnes per day, Geddes plans to transport concentrate through an underground pipeline.

In order to finance engineering studies and environmental test work, Geddes will complete a private placement for a minimum of $2.6 million and a maximum of $3.5 million. The placement will consist of special warrants priced at $1 and exchangeable for units of one common share and one half warrant. Northgate and **Cominco** (TSE), which hold 39% and 20% of Geddes respectively, have agreed to subscribe for $1 million and $500,000 of the placement.

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Vol. 76 No. 27 CANADA'S MINERAL RESOURCES NEWSPAPER

Offer for other shares promised

Placer to buy BP's 30% stake in Mt. Milligan for $79 million

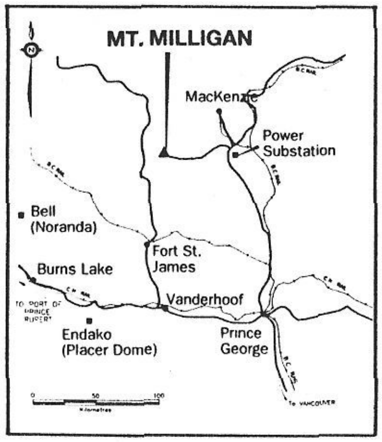
by Vivian Danielson

VANCOUVER — The Mt. Milligan gold-copper project north of Prince George, B.C., appears to be well on its way into the hands of major mining company, **Placer Dome** (TSE).

Having secured an agreement to buy a 30.16% interest in Mt. Milligan from **BP Canada** (TSE), Placer Dome now intends to proceed with an offer to purchase all the shares of **Continental Gold** (TSE) which owns 69.84% of the bulk tonnage project and is operator.

If all shares are tendered, the major company would pay an estimated total of $260.8 million for 100% of the advanced project which is projected to produce about 400,000 oz. gold and 83 million lb. copper annually when in full production.

Continental Gold President Robert Dickinson said Placer Dome's



involvement in Mt. Milligan is "good news for everyone" and paves the way for the project to become one of Canada's largest new mine projects of this decade.

"Placer Dome has considerable experience operating large mines in this province at the lowest possible operating cost," he said.

Last month Placer Dome announced it would make a public tender offer for all Continental shares if it could resolve outstanding litigation between BP and Continental Gold. BP was seeking a greater interest in the project relating to the original agreement between it and a predecessor company to Continental Gold.

By paying $78.8 million for BP's stake in the project, Placer Dome will acquire BP's interest in all the claims and other mining rights within the joint venture. It will also acquire BP's interest in the British Columbia Supreme Court action against Continental Gold, thus paving the way for dismissal of the legal action.

BP Canada expects that it will take about 30 days for the sale to close after receipt of Competition Act clearance. Continental Gold has already given its consent to the sale.

Last month Placer Dome and Continental Gold announced details of a lockup agreement whereby certain shareholders of Continental Gold agreed to tender all their shares to Placer Dome if a public bid is made before Oct. 22. Four of the shareholders — Robert Hunter, Robert Dickinson, Jeff Franzen and Douglas Forster — are also directors of Continental Gold.

The agreement with the shareholders involves 2.67 million shares, or about 30% of Continental Gold's outstanding shares on a fully diluted basis. In the event of an offer, the shareholders would receive not less than $20 cash per Continental share, or alternatively one Placer Dome common share for each common share of Continental.

Even though Mt. Milligan still has a few skeptics in view of its hefty $300- to $325-million price-tag for capital costs, most analysts appear to be viewing Placer Dome's plans to acquire the project as a positive development.

A Sept. 4 research report by David James of Richardson Greenshields projects that the gold only reserve (not yet in the proven and probable category) increment of 6.35 million oz. at Mt. Milligan

See PLACER, Page 2

Porgera ships first gold, raises production target

VANCOUVER — International mining company **Placer Dome** (TSE) recently made the first shipment of gold bullion to refiners from the newly commissioned 1,650-ton-per-day first-stage plant at the Porgera mine in Papua New Guinea.

The company has a 22.7% interest in the mega-mine project which it operates through its 75.8% owned subsidiary, Placer Pacific of Australia. Porgera, in mountainous terrain in the Western Highlands some 370 miles northwest of Port Moresby, represents one of Placer's most ambitious and challenging projects undertaken anywhere in the world.

The plant was completed and

See PORGERA, Page 2

Sale of Hans triggers Trim

by Vivian Danielson

VANCOUVER — Equity Reserve and Equity Investments, mining mutual funds which together control about 25% of the outstanding shares of **Trimin Resources** (TSE), may be seeking to oust Trimin's current management team at a meeting to be held next month in Vancouver.

The Equity companies had planned to propose a new slate of directors at Trimin's meeting of shareholders in late August. But Trimin management applied for and received an injunction from the Supreme Court of British Columbia allowing it to adjourn the meeting until Oct. 15.

Doug Hooper, vice-president of the Equity group companies, told *The Northern Miner* that the two companies are currently in discussions and a resolution of certain "differences" could be close at hand. Officials of Trimin were unavailable for comment.

Pinegrove sh only to Hong K

by Geoff Pearce

Calgary-based **Pinegrove Res** of the first junior mining companie government's Immigrant Investor placer gold mine in the Yukon.

Pinegrove has interests in both in British Columbia and the Yukon, conditions in Canada have sent the new capital.

Elmer Stewart, a director o government recently approved a which if fully subscribed will ra offering is open to persons wanting being marketed in Hong Kong.

The debenture offering compr and is predicated on the investor bei Canada. If the investor is denied a investment will be returned. Canad agent for the offering.

The interest on the debenture choose to have their interest paid i

Brookbank lawsuit one of three facing Metalore

by Geoff Pearce

Shareholders of Metalore Re...

held a 100% interest in the 18-

Dome on the Brookbank gold

Placer acquisition

From Page 1
"represents a 33% increase in Placer's year-end 1989 net reserves of 18.9 million oz." The report also projects that Placer Dome will likely complete the feasibility study by year-end and could be in production as early as 1993.

"This Canadian-based project should have a favorable after-tax effect on Placer and certain economies may be created with the 1992 closure of 58.8% owned Equity Silver (a Placer Dome subsidiary) operation near Houston, B.C." the report states. "Mt. Milligan will put Placer's overall production in 1993 and after at over two million ounces annually."

Two other major companies, **Hemlo Gold Mines** (TSE) and **Rio Algom** (TSE), each holds minor equity interests (4% and 9% respectively) in Continental Gold. Both companies will have the opportunity to tender their shares to the Placer Dome offer.

Timmins Nickel hits on Langmuir property

Recent drilling by **Timmins Nickel** (TSE) on the Langmuir No. 1 deposit, four miles east of the company's Redstone mine, has intersected 3.44% nickel over a true width of 40 ft.

The intersection came from the second of two underground drill holes completed recently as part of a program to confirm the property's known minable reserves of 187,475 tons grading 1.8% nickel. The first hole of the program yielded 4 ft. grading 2.78% nickel, and drilling is still under way with another 2,000 ft. planned.

The company said the drill results confirm and enhance the earlier work completed by Noranda and the deposit remains open down-rake to the north.

Pinegro

From Page 1
mining operation. The princi
alternatively the investor can
in shares. The conversion pri
period prior to redemption.

"We didn't want to c
which are trying to raise m
private placements," Stew
interview.
"We wanted to try somethin

He said the immigrant
be an excellent alternative
immigrating from Hong Ko
China by 1997.

Proceeds from the offeri
Haggart Creek gold placer p

According to Pinegrov
yield 4,000 oz. of gold annua
years of production.

Porgera ships fir

From Page 1
commissioned on schedule, and construction of the next stage of the plant is scheduled for completion in the third quarter of 1991. The final stage of the US$1-billion project is scheduled for completion by the end of 1993.

Currently, ore from the underground mine is being treated in the plant to produce both a gravity c
centrate from which bullion
produced by direct smelting, a
flotation concentrate which is
ther treated by a conventio
carbon-in-pulp process. In the l
stages, a pressure oxidation p
will be added to process sulph
concentrates.

A revised production sche
was recently announced for

Mt. Milligan (1-2) Golden Bear (6) Industrial Minerals (17) - (General)

Eskay Creek
Latest drill results confirm grade
Page 3

Golden Bear
Higher costs revealed for gold project
Page 6

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Vol. 76 No. 5 CANADA'S MINERAL RESOURCES NEWSPAPER

Mt. Milligan

Continental climbs as takeover rumor stimulates trading

by Vivian Danielson

VANCOUVER — A new flurry of takeover rumors has dramatically boosted the share price of **Continental Gold** (VSE), a Vancouver-based junior which owns 70% of the advanced Mt. Milligan gold-copper project, north of Prince George, B.C.

A total of 1.5 million shares are reported to have traded on NASDAQ and on the Vancouver Stock Exchange during the past month. At presstime, the issue reached a new high of $14.75, up considerably from its 1990 low of $6.87.

President Robert Dickinson said *the company has not received any* recent formal offers for its shares, nor was the company aware of any particular party intending to do so.

"We are always the last ones to hear about these things," he told *The Northern Miner*.

Hemlo Gold Mines (TSE) announced in its 1989 annual report that it had acquired just over 4% of the stock of Continental through purchases on the open market. **Rio Algom** (TSE) also has an equity position of about 8.8% in Continental.

News that Hemlo Gold has acquired a small interest in Continental did not come as a surprise as that company, or its parent

See CONTINENTAL, Page 2

1,000 reopened claims prompt staking rush near Cobalt, Ont.

by Virginia Heffernan

The rush is on as mining majors battle small-time prospectors for control of more than 1,000 reopened claims in the Cobalt area of northern Ontario. Since 7 a.m., April 3, official opening time, stakers have been racing to lay claim to the choicest properties in the 1,800-sq.-km area.

"There were helicopters all over the place" on opening day, notes Larder Lake mining recorder Mike Weirmeir. At one point, "six of *them were hovering over the same* spot."

The reopened zone constitutes a narrow band of land surrounding

Tree area. "About 90% of business is coming from that area," says Weirmeir. In 1939, the Ronda mine produced 2,727 oz. of gold and 4,380 oz. of silver from Shining Tree's gold-rich greenstones.

Another small pocket of claims has opened in Tudhope Twp., adjacent to Bryce Twp., where a north-east-trending fault system hosts a number of gold showings. This area was recommended as an exploration target by Cobalt resident geologist Leo Owsiacki in his *1988 Report of Activities*. In the 1930s, **Noranda** (TSE) extracted 22 tons of ore grading 1.2 oz. gold per ton and 22 oz. silver from a gold

Macassa output during March best in 57 years

by Olav Svela

The Macassa gold mine of **LAC Minerals** (TSE) near Kirkland Lake, Ont., smashed its previous records by posting a single-month gold output of 12,353 oz. in March. The mine had never before produced more than roughly 9,000 oz. in a single month during its 57-year history.

"This month (March) was just fantastic," said Gerald Gauthier, senior vice-president of operations. "We had days when the *head grade was running* 0.8-0.9 oz. per ton." High-grade stopes and a new, made-to-measure mining method contributed to the record output.

The mine came into production in the midst of the Depression in 1933. But as old as it is, annual output has been rising, not declining, since LAC commissioned the No. 3 production shaft in 1986.

The average recovered grade for the month was 0.675 oz. Mill recovery averaged 96.8%. (The

See MACASSA, Page 2

Strike ends b high at Highl

VANCOUVER — A short-li illegal work stoppage threaten operations at Highland Valley C per near Logan Lake, B.C., appe *to be over although the union* management have yet to resolve s eral contentious issues that trigge the action.

Rod Killough, manager of hu resources for Highland Valley C per, told *The Northern Miner* the company was awarded an junction on March 30, and workforce returned to work on same day.

Highland Valley Copper is of the world's largest copper n ing operations, ranking second the basis of tonnage milled and s enth in terms of copper produc because of its relatively low gra It currently employs 1,100 u employees represented by the Un Steelworkers of America. The co pany is a partnership held 50% **Cominco** (TSE), 33.6% by **Algom** (TSE), 13.9% by T (TSE) and 2.5% by Highm Mining.

The illegal work stoppage, w *lasted only several days*, was gered by the use of non-un contractors and by contrac bringing laborers on site when c

Pezim vows 'street fight

by Vivian Danielson

VANCOUVER — Insider trading allegations against Murray Pezim and two other common directors of **Calpine Resources** (VSE) and **Prime Resources Group** (VSE) *dramatically overshadowed* recent meetings where Prime and Calpine shareholders approved a plan to merge the two companies.

Although pleased that the con

tion to these charges and we getting ready for the greatest f ever," a defiant Pezim said. also told reporters that the all tions were holding up about million in financings for va *companies in the Prime group*, of which are active in northwes British Columbia.

Pezim, well-known lawyers J Ivany and Lawrence Page

...ke a joke at his own ...hen he urged those on ...e meetings to purchase ...ts for his British Colum... ...ootball team.

...portant," he quipped. ...e out of a job."

...stakes being so high, ...no kind words for Brit... ...ia's recently appointed ...dent of brokers, Wade ...

... will improve the exchange's tarnished reputation.

Nesmith told *The Northern Miner* because of the scope of the matters to be resolved, he expects the hearing could last "several days, if not weeks." But he declined to comment on whether the notice of hearing would be amended to include additional matters not mentioned in the March 30 notice, as

...of material facts or material changes and engaged in a number of purchases, sales and trades involving Calpine and Prime shares on the basis of information not generally disclosed. Specifically, these involve the release of assay results from the drill program at Eskay Creek during July and August of 1989, and material particulars of a Calpine private placement.

Nesmith had promised not to interfere with the Calpine and Prime meetings as long as the outcome of the merger vote did not hinge on the four million shares involved in these transactions.

The merger was approved by 99.94% of Prime shareholders and 96.4% of Calpine shareholders. The newly merged company, to be called Prime Resources Group, will have about 41 million shares outstanding.

Had these shares been eliminated — and had 844,300 shares against the merger arrived in time to be counted — the outcome of the Calpine vote would have been 87.3% in favor, surpassing the 75% majority required for approval. At the Calpine meeting it was noted that a "vocal opponent" of the merger, believed to be former Calpine director George Oughtred, did not meet the deadline to vote his block of shares by proxy.

Now that the merger is a *fait accompli*, the local investment community is obviously hopeful that the insider trading allegations will be resolved as quickly as possible.

Stephen Semeniuk of L.O.M. Western Securities in Vancouver said difficulties in arranging financing would be a blow for northwestern British Columbia, given that Prime group companies are key players there and the working season is so short.

"I think a year ago this would have been devastating," he said. "But fortunately enough momentum has built up and this year money is being raised outside the Prime group for programs in the area."

Semeniuk also noted that on the issue of disclosure, major companies often go for lengthy periods without releasing results, even when they are material to the junior companies with which they are involved.

"I would hate to think there is a different standard being applied to Prime," he said.

... topped out at 18,311 tons. Last year's monthly average was 13,790 tons and the average monthly gold yield was 6,878 oz.

LAC has forecasted that mine production should yield 85,000 oz. of gold this year. But with the March bulge, the mine might surpass that target. Gauthier was not prepared to look quite that far ahead. But he did concede that "we'll have a very nice first quarter."

Last year, Macassa turned out 82,540 oz. (The Lakeshore tailings project has a budgeted output target this year of another 13,000 oz.)

Macassa is a high-grade, narrow-vein operation and the sole remaining producer on the Kirkland Lake Main Break that, in the region's heyday, fed the likes of the Lakeshore and Wright-Hargreaves mines.

Strike ends

From Page 1

ley, it would likely have some impact on 1990 copper prices.

Supply interruptions at several of the world's leading producers kept copper inventories below normal in 1989, hence a strong price performance. Most metal analysts predicted that world production would increase in 1990 and put more copper than before on the market.

But Ingersoll said inventories on metal exchanges and in the hands of users and producers are currently lower than expected, with demand holding at better levels than anticipated. He said any major interruptions in supply would mean stronger prices than originally forecast.

Continental

From Page 1

Noranda (TSE), was widely rumored to have been a possible takeover contender before the Mt. Milligan project became the subject of a lawsuit.

A unit of **BP Resources** (TSE), Continental's joint venture partner at Mt. Milligan, filed legal action against Continental claiming the right to a greater interest in the property. One examination of discovery has been heard, several more are slated for mid-April, and the lawsuit will be heard Nov. 5.

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EXPLORATION '90

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Huge porphyry gold-copper deposit

Mt. Milligan

Industry watching Mt. Milligan

by **Vivian Danielson**

PRINCE GEORGE, B.C. — Having drilled some 450 holes totalling in excess of 340,000 ft., no doubt remains that **Continental Gold** (VSE) has outlined a huge porphyry gold-copper deposit on the Mt. Milligan property over 100 miles from here.

There is no question that Continental's work has triggered a new wave of exploration activity in the province for other gold-copper or copper-gold porphyry deposits, particularly within the highly prospective Quesnel Trough.

But like a number of low-grade, bulk-tonnage projects that have gone before it, Mt. Milligan has industry observers and would-be operators busy evaluating whether it can be mined and milled at a profit and its sensitivity to metal price fluctuations.

Mark Rebagliati, chief geologist and site manager, concedes the project has roused skeptics. But he points out that it has been well over 20 years since a deposit of its size and type has been brought to production in the province.

"We have a whole generation that doesn't understand porphyries because no one was interested when copper prices were low," he told *The Northern Miner* during a recent property visit. "What's important to understand here is that this isn't a copper project, it's a dual-hedge property with about 75% of the value in the gold."

Gold may be the main commodity of interest, but Rebagliati said Mt. Milligan also has the potential to replace some of British Columbia's copper production that will be lost over the next several decades. Current production is largely from mines discovered in the 1950s through 1970s, and many are at or near the end of their productive lives.

Continental is operator and 70% owner of the Mt. Milligan property while a unit of **BP Resources** (TSE) holds the remainder. A third company, **Rio Algom** (TSE), holds a minor interest (about 8.8%) in Continental Gold.

During our visit, *The Northern Miner* observed that Continental was well into a program of infill, delineation, condemnation, geotechnical and bulk-sample drilling. This work, employing a total of seven rigs, is part of a $7.1 million feasibility and government permitting program aimed at advancing the project to the final feasibility stage this fall.

Rebagliati said the program will also include additional metallurgical testing, pit design and slope stability studies, environmental and socio-economic studies, as well as mine, mill and feasibility engineering studies targeted at a daily production rate of 55,000 tons.

Although Continental estimates it has outlined a geologic reserve of some 440 million tons in two deposits on the property, current engineering is focused on the Mt. Milligan deposit where preliminary estimates of reserves are currently reported as 220 million tons grading 0.019 oz. gold and 0.23% copper, for a 0.9% copper equivalent.

Continental said this calculation is based on the average of several third-party estimates. The deposit was generally drilled on 150-ft. centres and a cutoff of 0.015 oz. gold equivalent per ton was used. The strip ratio here is estimated at 6-to-1 waste to ore.

"We expect minable reserve will increase substantially as more infill drilling is undertaken," said Continental President Robert Dickinson.

As an interesting aside, the grade of this minable reserve isn't far off that encountered in discovery hole 12, drilled in September of 1987, which returned 85 metres of 0.26% copper and 0.01 oz.

The nearby Southern Star deposit is estimated to contain 150 million tons of 0.01 oz. gold and 0.23% copper, or a 0.58% copper equivalent, based on more widely spaced drilling. The estimated strip ratio of 1-to-1 here is slightly lower than the main Mt. Milligan deposit and the deposit is still open to the northwest.

"When the capital costs are paid off the Southern Star would be attractive as a mining proposition," Rebagliati said. "But I wouldn't want to start a mine up on it."

If a mine is to be made at Mt.

See Page B5

Photo by The Northern Miner

Standing beside one of the seven drill rigs at work on the Mt. Milligan property is chief geologist and site manager Mark Rebagliati.

Juniors, seniors form exploration ventures

by **Geoff Pearce**

Relations between junior and senior mining companies in Ontario couldn't be better this year, as demonstrated by the number of exploration joint ventures under way on dozens of properties across the

In Ontario, Placer Dome is senior partner on an unusual 3-year exploration joint venture with junior **Golden Crescent Resources** (ASE). The deal is a little out of the ordinary because it calls for the junior company to spend $7 mil-

Volatility of gold price

Mt. Milligan draws attention

From Page B1

Milligan, most expect it will be a major company's doing. It has been no secret that Continental, an exploration-oriented junior whose key principals hold a substantial equity position, has been receptive to the idea of a takeover if the price was right. But industry observers aren't expecting any developments in this regard until a contentious lawsuit between Continental and BP is resolved.

Late last year BP filed a writ against Continental, alleging breach of contract and claiming the right to a greater interest in the property. In its counterclaim and damage suit, Continental alleges that BP's lawsuit caused a major mining company to suspend discussions involving a possible offer of all its outstanding shares at a premium to market.

(Several years ago Continental's management team, then heading up North American Metals, vended the Golden Bear gold project in northern British Columbia to Homestake Mining through the sale of shares at a premium to market. The mine is now in production, although capital and operating costs were more than double original estimates.)

The lawsuits aren't slowing activity on the Mt. Milligan property which can be reached by a logging road off the main highway from Prince George. The forestry activity has been fortunate for Continental as it provides good road access and because the open pit sites have largely been logged.

The topography is low to moderate by British Columbia standards with flat-lying areas well-suited for mill, waste disposal and tailings ponds sites. There is no power on the property and this would have to be brought in from a nearby source. A crew of 70 work on rotating schedules from a campsite on the property.

One of the more interesting activities on site during our visit was the drilling aimed at providing various sizes of core that will be used in a bulk-sampling program to confirm metallurgy and the deposit's grindability and work index.

Rebagliati said six major mining companies, half of which are copper producers, independently selected and tested assay rejects during 1989 to assess the metallurgical characteristics of the deposit. While cyanide tests showed recoveries above 90%, Rebagliati said "acceptable" recoveries were achieved with straight flotation.

"This means a savings in capital and operating costs and on environmental permitting," he said. "When we start crunching the numbers, flotation appears to be the most attractive alternative."

Based on the latest metallurgical tests, Continental is projecting 80% recovery for gold and 88% recovery for copper, slightly lower than its initial estimates but still above industry average.

The company believes this could be achieved by a relatively coarse grind (55% minus 200 mesh), if a bulk sulphide float in a conventional circuit is used. The company expects this would produce a clean concentrate, one with no deleterious elements that would bring about a smelter penalty, averaging two ounces gold and 25% copper.

"We found we could increase our recoveries by using a finer grind, but the costs of doing so were not sufficient to make it more attractive," Rebagliati said.

The company is examining both avenues, and is investigating the compromise of regrinding only the bulk sulphide concentrate. The metallurgical testwork is under the direction of Melis Engineering, and optimization tests are continuing in order to achieve the best possible gold recoveries.

Rebagliati also noted that work will continue to determine the grindability and work index of the deposit at various depths, rock units and alteration assemblages — plus the relative ratio of all these factors. Based on tests to date, the company estimates the work index will be moderate: between 11 and 12.

Exploration continues at the large tonnage gold-copper Mt. Milligan project in north-central British Columbia.

One of the rigs on the property is turning out 6-inch core that will be used with small amounts of 47.6-mm and 63.5-mm diameter core to simulate run-of-mine muck at Lakefield Research's test SAG mill. The bulk of the 47.6-mm and 63.5-mm diameter core will be used to do a final pilot plant grinding and flotation run.

The company elected to take this route as it was viewed as being less expensive than taking an underground bulk sample, and more representative of the deposit as a whole because of the zonation effect (certain portions of the deposit are higher in gold than others). About 200 tons will be collected to be used for these tests.

The company isn't expecting a problem with copper oxide levels that would impact negatively on copper recoveries because of the percentage of carbonate in the high-sulphide deposit. Rebagliati said a very small and shallow copper oxide zone does exist, "but it has enough gold to carry it so we aren't worried about losing some of the copper."

And based on tests to date, Continental doesn't anticipate problems with acid mine drainage as the bulk of the rock is acid-consuming. But limestone deposits exist in the area should any be needed for neutralizing.

Continental estimates that its starter pit will consist of about 80 million tons grading 0.024 oz. gold and 0.22% copper for a 1.2% copper equivalent. The objective, of course, is to accelerate payback of the $300 million that is estimated for capital costs. The company expects payback could be achieved in about three years, although this will be more stringently defined in the final feasibility study.

If the project is found to be viable, and assuming all goes as planned, Continental projects that Mt. Milligan could produce an average of 400,000 oz. gold and 80 million lb. of copper per year. On the basis of current minable reserves, Continental foresees a 11-12 year mine life, and up to 20 years in total reserves.

If a mine of this magnitude is developed, much of the credit will have to go to the exploration team that made the initial "blind" discovery. The deposits are all covered by a layer of overburden and during our visit we viewed one of the few mineralized showings on the property — a small amount of copper staining exposed in a road-cut.

Mt. Milligan is described as an alkaline intrusive associated gold-copper deposit within the central volcanic core of the Quesnel Belt. The volcanic strata, dominated by alkalic flows and coarse pyroclastics, are intruded by four monzonite porphyry plutons. Disseminated gold-copper mineralization is associated with each of the plutons, the largest being the Mt. Milligan deposit.

Mt. Milligan is considered an "integrated discovery," where a number of individuals applied prospecting, geological detective work, and geophysical and geochemical methods to arrive at discovery. It was made even though the exploration group was initially sidetracked by high-grade gold veins and despite some early setbacks and disappointments.

Key individuals include Rebagliati, local prospector Richard Haslinger and geochemist Stan Hoffman. Rebagliati, who first set out on the trail of gold-rich porphyries in the Quesnel Trough in the early 1970s, did the early geological work at Mt. Milligan with Randy Farmer.

"After our trenching program we analyzed the Selco, BP and Lincoln geology and I saw we had this very broad propylitic alteration zone that was geochemically anomalous and we had a little patch of potassic alteration," said Rebagliati. "If you look at the classical model for an alkaline porphyry copper, you have the propylitic alteration zone encompassing the potassic alteration zone.

"Most frequently, but not always, copper mineralization is associated with the potassic alteration," he explained. "But no one had enough experience to know where to expect to find the gold, although we knew it occurs both in the propylitic and/or the potassic zones."

Rebagliati then focused in on a mag anomaly which he hoped would be magnetite-related. And that's when discovery hole 12 hit the magnetite breccia zone, or MBX zone contained within the Mt. Milligan deposit.

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have been defined along a
length of 1,600 ft and to a
of 1,000 ft.

See Page A17

Four rigs drilling at Mount Milligan

by Vivian Danielson

VANCOUVER — With four drill rigs still working to expand reserves, **Continental Gold Corp.** (VSE) has released additional assays for its 70%-owned Mt. Milligan gold-copper project near Prince George, B.C. **BP Resources Canada** holds the remaining 30% interest.

According to Robert Dickinson, president, recent drilling is indicating that the MBX, West Breccia and 66 zones form one contiguous, blanket-shaped mineralized body 4,300-ft long, up to 3,100-ft wide and up to 880-ft thick. The company is expecting to update reserves which were last reported as well in excess of 150 million tons grading an average of 0.3% copper and 0.025 oz gold per ton.

The more significant results from wide-spaced drilling on the West Breccia copper-gold zone are: 181.7 ft of 0.37% copper and 0.008 oz gold; 239.5 ft of 0.30% copper and 0.007 oz gold. The best gold value was from a 16.4-ft intercept grading 0.26% copper and 0.367 oz gold.

The more significant results from the 66 zone include: 187 ft of 0.04% copper and 0.049 oz gold; 13.1 ft of 0.09% copper and 0.210 oz gold and 19.7 ft of 0.26% copper and 0.130 oz gold.

Recent results from wide spaced drill sites in the MBX zone include:

Hole	Ft.	%/copper	oz/gold
89-126	146.1	0.23	0.010
89-128	241.7	0.32	0.018
89-129	255.8	0.32	0.015
89-131	222.4	0.28	0.011
89-135	595.7	0.49	0.026
incl.	210.0	0.74	0.045
	385.7	0.35	0.015
89-136	119.7	0.31	0.019
89-138	315.9	0.28	0.010
	70.9	0.31	0.026
89-140	435.6	0.45	0.012
89-144	938.7	0.36	0.010
incl.	337.8	0.54	0.016

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ıdustry embraces CEIP, companies seek grants

ıir Crawford

ıustry's initial skepticism the federal government's dian Exploration Incentive am (CEIP) has faded and coms are now prepared to use the am effectively, Peter McLean, 's director of operation, told Northern Miner.

ɔre than 160 flow-through agreements have been filed CEIP by companies involved ineral exploration this year. total value of the agreements 26.3 million.

ıdustry has accepted the pro- and are determined to make rk," says McLean. "Now the thing is to convince investors it (CEIP) is a viable invest- t vehicle and that's just a mat- f reversing some of the exter- actors. If the Vancouver market s around, if the price of gold up, if there's a major find — hese spur interest in flow-through."

More than 300 people have attended the free seminars that Energy Mines and Resources officials are holding across the country to explain the whys and hows of CEIP. The seminars consist of an overview of the program's key concepts and workshops explaining program administration, eligible expenses, flow-through share agreements, annual expense limits and application procedure.

CEIP is designed to raise funds for companies exploring for minerals, oil and gas by offering a cash incentive of 30% of exploration costs. The program emphasizes grassroots exploration by junior companies and replaces the Mining Exploration Depletion Allowance (MEDA).

"There's really one fundamental change between MEDA and CEIP," says McLean. "Under MEDA an investor would gross-up by 33⅓% the exploration expenses renounced to him by the corporation. If he invested $100 in flow-through shares, he would receive a tax write-off of $133.33.

"With CEIP, rather than pay through the tax system, we pay out a cash contribution. If the investor puts $100 into flow-through shares, and the company elects to flow-through the money to the investors, the investor would receive a Canadian Exploration Expense tax credit of $70 — $100 less the CEIP contribution of $30. He wouldn't receive as much of a tax break, but he would have $30 in his pocket."

McLean admits that CEIP hasn't stirred the same excitement in investors that MEDA did.

"It's fair to say that the interest hasn't been as great as it was in 1987-88, but those two years were exceptional. The interest is more in line with earlier MEDA years like 1983-84."

Any corporation that has incurred eligible exploration expenses (EEE) while searching for minerals on or after Jan 1 of this year, and has issued flow-through shares, qualifies for the CEIP incentives, subject to certain conditions.

Eligible expenses are defined as having been incurred "for the purpose of determining the existence, location, extent or quality of a mineral resource in Canada."

Once a company enters into a flow-through share agreement with its shareholders, it has 60 days to notify CEIP. To qualify for the CEIP grants, the flow-through shares must not be preferred shares, that is, the investors must be "at risk" by the venture.

CEIP will cover 30% of the EEE and that rate is guaranteed at least until Jan 1 1990. Up to $10 million of exploration expenses may be eligible for the CEIP incentives each

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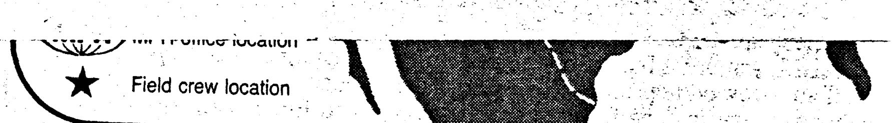

Mt. Milligan

United Lincoln drilling expands MBX gold-copper zone

VANCOUVER — With assay results in for the first ten holes of a major delineation drill program, **United Lincoln Resources Inc.** (VSE) is reporting an increase in gold grades at the open, southern end of the MBX disseminated gold-copper zone on the Mt. Milligan property near MacKenzie in north-central British Columbia.

While recent drilling is continuing to expand the MBX gold-copper zone which now measures 2,500 ft along strike and up to 1,000 ft wide, the discovery of a portion containing higher gold values is undoubtedly the more encouraging news for the junior company attempting to prove up a bulk tonnage open pit gold-copper mine where gold credits are expected to figure prominently in project economics. United Lincoln has a 70% interest and is operator while partner **BP Resources Canada Ltd.** (TSE), which staked the property as a raw prospect back in the early 1980s, holds a 30% interest.

Intrigued by United Lincoln's 1988 reconnaissance drill program that encountered values as high as 0.078 oz gold over 280 ft in altered volcanics within an alkaline stock, management of **Continental Gold Corp.** (VSE) moved last fall to take control of the company which is now its 69%-owned subsidiary. The companies are expecting to amalgamate within the next several months into a single entity under the control of Robert Hunter and Robert Dickinson, both of whom were involved in development of the Golden Bear mine in northwestern B.C.

By the end of 1988, the partners had assigned the bulk tonnage prospect a preliminary geological inventory based on 31 holes in the order of 20 million tons, with average gold grades in the range of 0.02 to 0.04 oz and average copper grades in the 0.3% to 0.5% range. **(N.M Dec., 5/88).** Although considerable drilling needs to be done before the deposit's size and grade can be confirmed, United Lincoln is expecting that its 1989 program will add significantly to these numbers.

This year the partners are jointly funding an expanded drill program which is now testing the eastern flank of a large circular disseminated sulphide system measuring two miles in circumference (as indicated by recent geophysical surveys). The partners are encouraged by recent work which appears to be demonstrating vertical continuity to a depth of at least 850 ft, with the zone open to extension along strike and at depth.

Gold is disseminated throughout the MBX zone, including its southern end where two recent holes encountered lower copper values but significantly improved gold values. From a total hole length of 925.3 ft, hole 88-61 encountered 720.3 ft of 0.09% copper and 0.036 oz gold per ton, including 168.9 ft of 0.10% copper and 0.073 oz gold and 246 ft of 0.12% copper and 0.045 oz gold.

The second hole, 88-66, included a 601.7-ft interval (from a hole length of 651.7 ft) grading 0.12% copper and 0.035 oz gold. Included in that interval was 258.1 ft of 0.05% copper and 0.062% gold and 145.9 ft of 0.03% copper and 0.086 oz gold. Robert Dickinson, president of United Lincoln, said the last 6 ft of this hole assayed 0.27 oz gold per ton.

"We initially saw Mt. Milligan as a classic porphyry copper situation with uniquely high gold values," he said. "But what appears to be happening now is that the copper-gold is phasing into an area with higher grade gold values, although we don't know the size of it yet."

Other holes drilled into the MBX zone returned copper values within the expected range although some intervals were shy of targeted gold grades; among them hole 88-65 which intersected 451.1 ft of 0.41% copper and 0.013 oz gold, and hole 88-67 which intersected 379.8 ft grading 0.26% copper and 0.012 oz gold from a total hole length of 806.8 ft.

A 1,017-ft interval of 0.36% copper and 0.015 oz gold was reported from hole 88-68, including 487 ft of 0.43% copper and 0.022 oz gold. Although further assays are expected from hole 88-70, a 430.8-ft interval of 0.38% copper and 0.016 gold was reported.

Several holes were also drilled peripheral to the MBX zone, with one encountering 906.6 ft of 0.11% copper and 0.012 oz gold, and a second hitting 368.9 ft of 0.08% copper and 0.020 oz gold.

By the end of January, United Lincoln expects to have four drill rigs on the property to continue to test the sulphide system and numerous other targets covered by a thin layer of overburden. A major logging road runs through to the 42-sq-mi property.

Tundra drilling

A major drill program totalling more than 110,000 ft is scheduled to begin this month on the Lamaque gold project owned by partners **Teck Corp.** (TSE) and **Tundra Gold Mines** (VSE).

The program expected to be

Jerome buys reprieve as reserve hunt

After persuading E.B. Eddy Forest Products to extend the deadline for an option agreement at the old Jerome mine near Swayze, Ont., Toronto-based **Jerome Gold Mines** (ASE) has raised $500,500 to finance exploration on the property.

Jerome and partner **Muscocho Explorations** (TSE) continue to work against the clock to prove up between 750,000 tons and one million tons by April so that Jerome can raise $2.5 million to buy the property from E.B. Eddy.

The forest products company recently agreed to extend the option deadline from December to April in return for a $100,000 cash payment. Jerome continues to pay the forest products company $25,000 per month to maintain its interest in the property.

If Muscocho doesn't reach the target in time, E.B. Eddy has the right to buy its way back to a 40% interest or earn a hefty 10% net smelter return on production.

While operator Muscocho h spent about $2 million so far earn a 50% interest (Muscoch interest is split three ways with af iates **McNellen Resources** (VS and **Chesbar Resources** (TSE)), i much too early to know wheth or not the company can prove the required tonnage.

With known reserves now stan ing at 437,320 tons grading 0.193 above the 500 ft level, Muscocho currently driving crosscuts into t south zone.

From there it will establish a ba for drilling into the Main zo where the joint venture expects be able to prove up addition reserves. Exploration at Jerome w also entail some surface drillir according to Jerome Preside

X-Cal to drill Snowbird gold bet

A winter drill program is scheduled to begin this month on **X-Cal Resources'** (TSE) Snowbird gold property in central British Columbia.

Following the drill programs, a complete review of the gold zones on the property will be undertaken in preparation for upcoming development work, the company says.

Gold mineralization on the Snowbird property occurs in sulphide-rich quartz veins, silicified sedimentary rocks, and felsic dykes.

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CANADA'S MINERAL RESOURCES NEWSPAPER

Mt. Milligan

United Lincoln, BP fast-track plans for B.C. gold-copper play

by Nicholas Tintor

A bulk-tonnage, low-grade gold-copper deposit in British Columbia is being fast-tracked toward development by partners **United Lincoln Resources** (VSE and **BP Canada Resources** (TSE). Located 45 km west of Mackenzie in north-central British Columbia the Mt. Milligan property is owned 70% by United and 30% by BP.

The partners have approved a $1.2-million exploration program designed to extend and delineate reserves on the MBX deposit, which was discovered by the partners earlier this year. This work includes a 20,000-ft drill program which is in progress.

Based on a reconnaissance drill program of 31 holes completed earlier this year, the drilling has defined a geological inventory of 20 million tons grading 0.02-0.03 oz gold per ton and 0.3%-0.5% copper per ton. A classic porphyry copper deposit with open pit potential, Mt. Milligan is distinguished from most in the British Columbia interior by its above average gold grades, Robert Dickinson, president of United Lincoln explained to The Northern Miner.

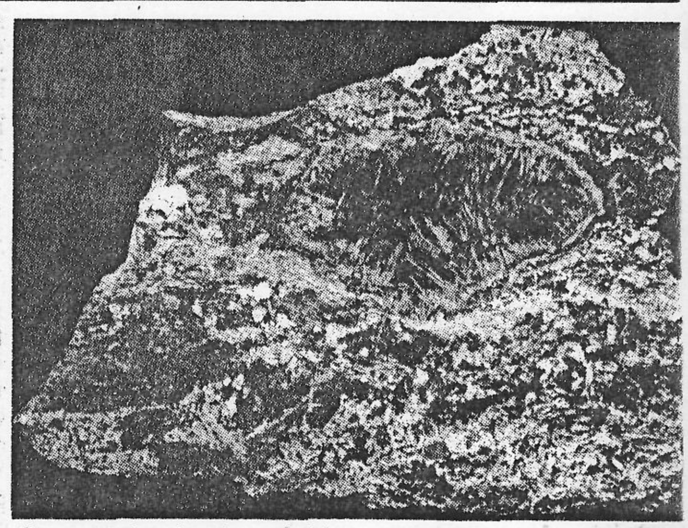
More importantly, an examination of cross-sections, geophysical plans and geological maps by The Northern Miner, shows that the objective of outlining a minimum 60-million ton deposit is feasible.

The current program's objective is to build reserves to this level. This will be followed by bulk sampling, detailed metallurgical studies and engineering and environmental studies with the intent of completing a feasibility report, Dickinson said.

Some of the better sections from the drilling completed include 268 ft grading 0.069 oz gold and 0.09% copper. Another hole cut 251 ft grading 0.063 oz gold and 0.52% copper. All holes intersected mineralization beginning from surface bedrock, which is overlain by a thin bed of overburden. The relatively gentle topography of the area combined with the geometry of the MBX deposit should allow for a good open pit stripping ratio.

As with all large tonnage porphyry deposits in British Columbia the Mt. Milligan project will be sensitive to commodity prices and dollar exchange rates. However, a positive attribute of this project is the above average gold credit, which according to Dickinson, will result in two-thirds of revenues coming from gold sales. By comparison, mines such as Afton in the Highland Valley of British Columbia mine higher copper grades of 1% but lower gold grades averaging 0.014 oz.

United Lincoln is controlled 69% by **Continental Gold Corp.** (VSE), which is controlled by Dickinson and Robert Hunter. Both were associated with North American Metals, a company which was taken over earlier this year by U.S.-based **Homestake Mining Co.** (NYSE). Homestake is also the largest minority shareholder in Continental with a 12% interest.



Cuprosklodowskite from the Musonoi Mine, Kolwezi, Katanga, Zai is part of the Pinch collection.

$2-million donation boosts drive to buy Pinch collectio

by Peter Kennedy

A group of 11 mining companies has banded together to he in a fund raising drive designed to bring the world's finest privat held mineral collection to Canada.

Led by **Teck Corp.** (TSE) and **Noranda Inc.** (TSE), the gro recently donated $2 million to The National Museum of Natu Sciences which has an option to acquire the William Pinch Coll tion for $7 million.

The cheque was presented to Dr Alan Emery, director of th National Museum, at Teck's Toronto offices where 100 exhibi from the collection were on display.

As part of a plan to publicize the fund raising campaig Emery is taking the exhibits on a 4-month cross-Canada tour whic is scheduled to wind up next month in Halifax.

By that time Emery said he hopes to have commitments f part of the $2 million which is still needed to acquire the collectio Assembled over 41 years by Rochester, N.Y. native William Pinc it is comprised of 16,000 specimens and gemstones. Until it w transferred to the National Museum in Ottawa recently, it w stored in the basement of Pinch's home in Rochester. See Pag

Lac gets $48 million for Stillwater

A one-third interest in the Stillwater platinum-palladium operation in Nye, Mont., is being sold by **LAC Minerals** (TSE) for $48 million(C) to its two project partners.

Operator of the mine, which opened in 1987 and where palladium is mined in a 3:1 ratio to platinum, is the Stillwater Mining Co. Manager of the project is **Chevron Resources**. Stillwater Mining Co. is owned equally by LAC, Chevron and Manville Sales Corp.

Under the agreement, Chevron and Manville will each have a 50% interest in the project. Completion of the purchase is subject to the approval of Manville's board of directors. If Manville's board is not in agreement, LAC's interest will be bought by Chevron givin two-thirds interest.

The Stillwater operatio located 80 miles southwest of ings. Initial production in M 1987, was 500 tons per day; i expanded to 700 tons per d August, 1987. Projected is a duction rate of 1,000 tons pe by the early 1990s. See P

Shortage leads to 'black market' for sodium cyani

by David Robertson

Sodium cyanide, essential in the recovery of most gold produced today, is in such short supply that a "black market" has developed for the chemical driving prices up sharply for those without an assured supply thereby threatening to increase their over-all cost of production.

Whereas sodium cyanide has been selling on average for about $3 per kg on a contract basis, the commodity now fetches about $5 per kg if you can find an unlicensed

United States with interests in several mines, estimates its average cyanide cost to be $6-$12 per oz.

"It's available if you're prepared to pay the price," the manager of a new gold mine in the southwestern United States said after discussing the problems his company had in obtaining a supply of the chemical for start-up purposes. He said management has since acquired a long-term contract for the chemical.

Cause of the world-wide shortage is attributed to the hectic activity in the gold mining industry the

expected to start making a difference until the end of 1989 or beginning of 1990.

The importance of cyanide to the mining industry is that the chemical is one of the few which can dissolve gold. The Northern Miner's *Mining Oil & Gas Explained* describes the chemical as being "very poisonous and dissolves easily in water." In solution and in the presence of oxygen, cyanide liberates gold from waste rock without attacking the host ore. (The gold is then separated from the cyanide by

Processing or other requ ments may dictate a mining c pany's preference for one cya product over the other; base precious metals giant **Noranda** (TSE) uses the sodium vari while gold producer **LAC Mine** (TSE) buys the calcium type.

Calcium cyanide, sold in b and shipped as a dry produc described as containing about the equivalent strength of sodi cyanide. (The calcium variet priced competitively on a 100% basis, delivered to the custom