

92F/12E

FILE No. (092F 071,072)

NAME..... LYNX, PARAMOUNT (WESTERN MINES).....

SUBJECT..... CLIPPINGS.....

*Lynx, Myra.*

92F072-03  
PROPERTY FILE

006875

927 072

## Ore deposits at the Myra Falls minesite

Westmin Resources Ltd is currently conducting mining and milling operations at their Myra Falls mine site located near the south end of Buttle Lake in the center of Vancouver Island. A 56 mile paved highway provides access from Campbell River.

The Myra Falls deposits occur as many individual ore bodies grouped into several major zones (figure 1). These ore zones are currently being mined underground from two mines — Lynx and Myra — at a rate of 930 short tons/day. These two mines have provided all production since start-up at the end of 1966. Production to the end of 1982 totalled 5,204,300 short tons which averaged 0.06 oz Au/ton, 3.32oz Ag/ton, 1.5% Cu, 1.1% Pb, 7.6% Zn.

The Price zone, discovered in 1979, represents a modest but significant

extension of reserves for the existing mining operations and has been subject to underground development and definition drilling. Proven mining reserves in Lynx, Myra and Price at the end of 1982 totalled 1,021,000 short tons averaging 0.06 oz Au/ton, 2.6oz Ag/ton, 1.0% Cu, 0.9% Pb, 7.4% Zn.

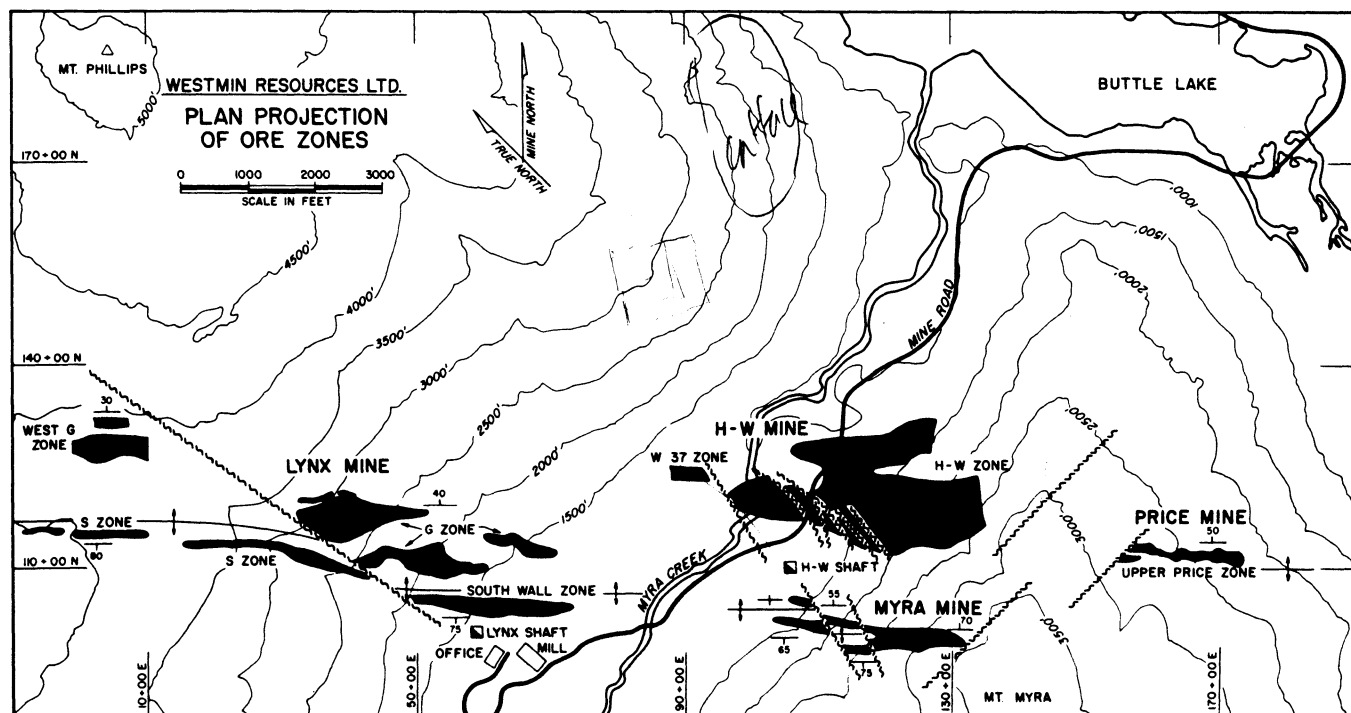
The H-W Mine represents a major new ore zone, which will substantially transform the mining operations at Myra Falls. Geological reserves in the H-W Mine total 15,232,000 short tons, probable plus possible, with a combined average grade of 0.07oz Au/ton, 1.1oz Ag/ton, 2.2% Cu, 0.3% Pb, 5.3% Zn. In conjunction with development of the H-W Mine, the company is engaged in expanding production to 3000 short tons/day. This expansion will include a new 2350ft shaft (nearly completed) as

well as a new mill, mine offices, shop, surface tailings disposal system and hydroelectric power plant. H-W was also discovered in 1979.

### GENERAL GEOLOGY

The Myra Falls ores are polymetallic, massive sulphide deposits associated with felsic volcanic rocks. The ore formed as sedimentary lenses on the sea floor, precipitated from metal bearing hot springs contemporaneous with the felsic volcanic host rocks. Hot spring activity produced widespread hydrothermal alteration of wallrocks, particularly below the ore lenses. Major centres of hydrothermal discharge are marked by zones of stringer and disseminated pyrite. For the most part, these pyrite stringer zones are not ore bearing. Hydrothermal alteration appears to be primarily

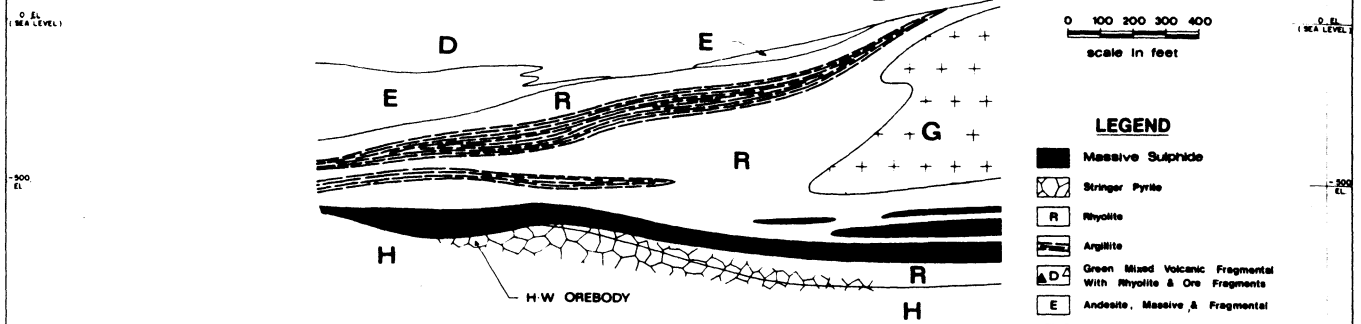
Myra Falls Mine orebodies



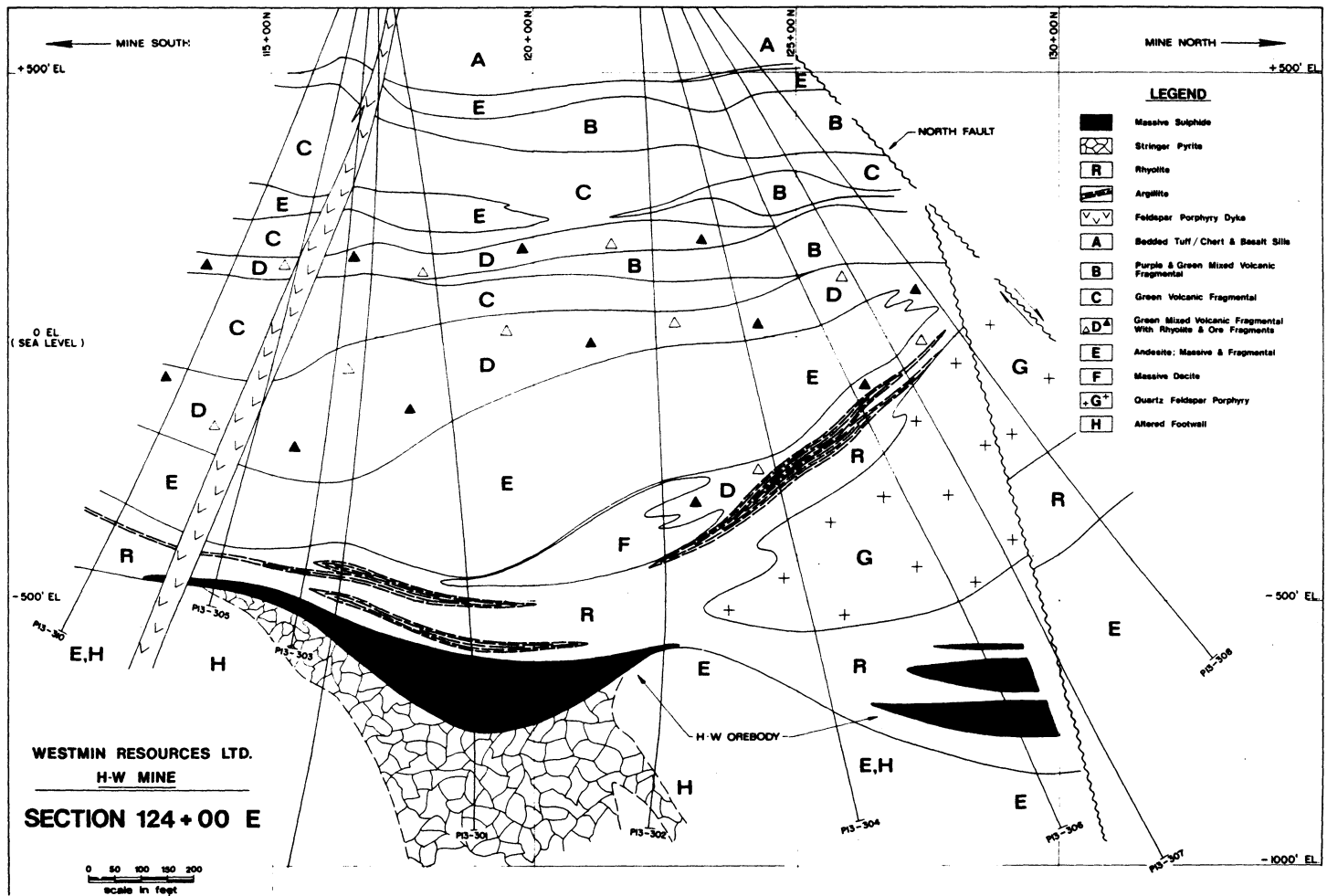
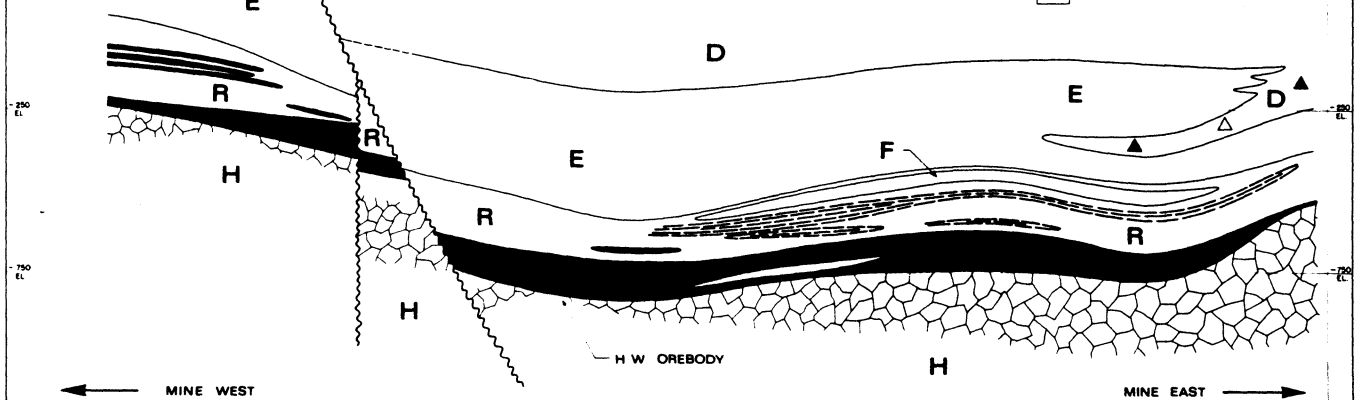


# COMPOSITE LONG SECTION 127 + 00 N & 128 + 00 N

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H-W MINE



## LONG SECTION 120+00N



represented by sericitization, silicification and pyritization.

The major minerals comprising ore are pyrite, sphalerite, chalcopyrite, galena and barite which vary widely in their proportions. Minor minerals include tennantite, bornite and pyrrhotite. Ore textures are primarily fine grained and massive or banded.

Occurrences of rhyolite, sulphides and altered rocks are distributed vertically and laterally within a stratigraphic zone approximately 1200 to 1500 feet thick.

This mine sequence lies within the Myra Formation of the Paleozoic Sicker Group (Muller, 1980). The mine sequence is composed of massive

volcanic and coarse to fine volcanoclastic rocks which include basalt, andesite, dacite and rhyolite as well as subordinate sedimentary rocks which include chert, carbonaceous argillite, sulphides and barite. Chert includes black, green, gray and red varieties. The mine sequence is internally bedded and is predominantly mafic and volcanoclastic. Lithologic units are laterally discontinuous with a distinct northwest trend parallel to the trend of ore zones.

The H-W orebody and associated ore lenses occur at the base of, and within, the H-W rhyolite unit which lies at the bottom of the mine sequence. The Lynx, Myra and Price ore zones are correlated

as a single, elongate zone of rhyolite, ore and altered rocks which lies near the middle of the mine sequence. The Lynx-Myra-Price ore zones have been documented over a strike length of 19,000ft along the northwest trend. The H-W ore zone has been traced over 4500ft along a parallel trend located 2000ft northeast. In both cases, the plunge of ore lenses and broader zones is near horizontal.

The mine sequence has been folded and metamorphosed in the lower greenschist facies. Deformational rock fabrics are variably developed with the widespread occurrence of schistose and lineated rocks. Schistosity is most intense in sericitic rhyolites and altered rocks. Schistosity strikes northwest and dips steeply northeast. Lineations, as well as fold hinges, trend northwest with flat to very shallow plunge. Post-metamorphic faults of many attitudes offset the ore zones. Zones of gouge and broken ground are common along major faults and ore contacts.

#### LYNX-MYRA-PRICE

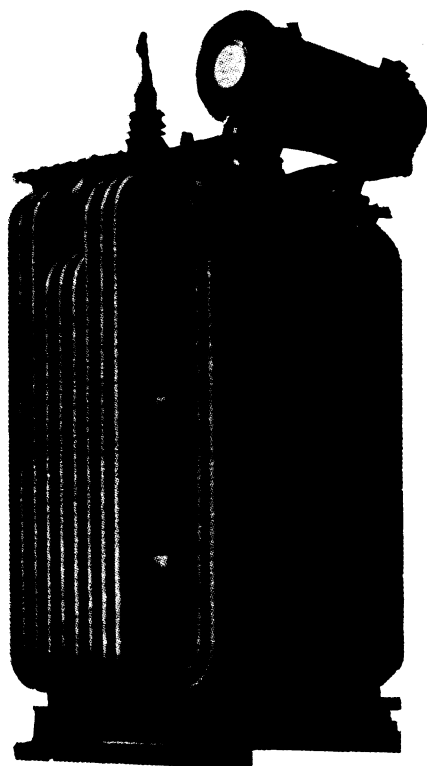
The rhyolitic ore horizon in Lynx, Myra and Price mines appears to be folded over a major anticline with ore lenses lying on both limbs. The hinge of this fold trends northwest with a flat plunge.

In Lynx mine the southwest limb dips generally 50 degrees southwest to 70 degrees northeast (overtured) but averages near vertical over an elevation range of more than 1500 feet. The north limb dips, on average, about 40 degrees northeast and has been traced over more than 1500 feet of dip length. Smaller scale folds and faults considerably complicate ore geometry on a stope scale.

The distribution of major ore zones in Lynx mine is illustrated in figure 1. The southwall zone and S zone lie in the steeply dipping, southwest limb of the anticline. G-zone orebodies lie in the moderately dipping northeast limb. The west G-zone was discovered in 1982 as the result of a major drifting and drilling program designed to test the northeast limb 3000ft northwest of the previously known G-zone. This new ore lens is currently known to extend over 1000ft of strike length and is open on both ends. It appears similar to currently mined G-zone orebodies.

The basic geometry of Lynx mine has led to extensive lateral and vertical development. Mining on the property began with an open pit at the southeast end of Lynx, where the ore structure was eroded through by Myra Valley producing the geographic separation of Lynx and Myra Mines. In total, 1.7-million tons of ore were taken from the Lynx pit. Underground development is by five adit levels and seven levels off an internal shaft which is 1125ft deep. Levels are tracked and spaced approximately 150 feet apart.

# TRANSFORMERS



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**Myra Mine** is a smaller, but higher grade, extension of Lynx, preserved where the ore zone extended into Mount Myra on the opposite side of Myra Valley. The dip length of the ore horizon diminishes towards the southeast and in Myra mine both limbs total about 1000ft. The rhyolitic host rock (sericite schist) appears compressed in the hinge of the anticline with a form varying from nearly isoclinal to asymmetric. Again, ore bodies lie on both limbs. Myra mine is mainly trackless with three adit levels and two levels off a 2080ft, 14.8% ramp. Level spacing is 150ft. Production from Myra mine began in 1972.

**The Price zone** is an offset extension of the Myra zone. It was displaced from Myra by an inclined cross-fault with a 2800ft net slip. The vertical component of this displacement is about 1000ft with the Price block up. Initial exploration development of the Price zone has been by two adits with access by road up the east side of Mount Myra from the valley floor 1300ft below.

In the Lynx, Myra and Price mines, lateral development (8x8ft) totals 180,000ft, vertical development totals 72,000ft and underground diamond drill footage totals close to 1.2-million ft with an additional quarter million feet drilled from surface. Ore thickness is typically in the range of 5 to 15ft (maximum 40ft) and most production has been by cut and fill with a small amount of blast hole and room and pillar mining. Ore definition diamond drill hole spacing is generally 50x50ft on the plane of the ore.

#### H-W

The H-W deposit was discovered in December 1979, by surface drilling, at a depth of 1400ft below the floor of Myra Valley. Faced with declining reserves in the producing mines, a decision was made at the end of January 1980 to proceed with a new shaft.

Surface drilling of the deposit continued until mid 1981 and was then replaced by underground drilling from an exploration heading driven from the bottom level of Myra Mine as the deposit was followed under Mount Myra. Both the surface and underground holes ranged to depths of 2000ft or more in this initial exploration phase. Hole spacing began at about 250x100ft and was soon widened to 500x150 to 350ft. This first phase exploration was completed by the end of 1982. By mid 1982 a level had been driven from the new shaft to gain early access to ore for bulk sampling and to provide drill position for a second phase of drilling. This second phase drilling filled in a portion of the deposit at 100x100ft spacing to provide sufficient data for current mine planning of an initial production area.

The ores of the H-W mine occur principally within a single, large, thick

body of very pyrite-rich, massive sulphide (figures 2 & 3).

The ore grade portion averages 70 weight percent pyrite and the remaining massive sulphide is base metal-poor, fine grained pyrite. In contrast the Lynx-Myra-Price ores average about 15 weight percent pyrite. The H-W massive sulphide body ranges in thickness from over 100ft in an axial zone to thin tapering margins. The average massive sulphide thickness is in the order of 60ft. The orebody exhibits strong lateral zoning from a very massive, pyrite core with high copper: zinc ratios, to zinc and barite-rich margins with low copper: zinc

ratios. The marginal phase contains significant silver and lead in contrast to the core zone. Gold is fairly uniformly distributed. The relatively smaller tonnage, marginal ore phase represents higher grade ore.

Mechanized, trackless mining utilizing ramps between levels is planned for the H-W mine. Multiple stopping methods are anticipated.

#### REFERENCES

Muller, J.E. (1980) The Paleozoic Sicker Group of Vancouver Island, British Columbia; Geological Survey of Canada, Paper 79-30, 23-.

W/M

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stratigraphic horizon as the Aur/Louvem deposit.

Farquharson's southern boundary is 1,500 ft north of the former East Sullivan copper-zinc-silver mine property's southern boundary.

The eastern portion of the property contains a wide sulphide halo of disseminated and stringers of pyrite, pyrrhotite and chalcopyrite

## Westmin finds new sulphide zone at Myra Falls

VANCOUVER — Recent exploration drilling by Westmin Resources (TSE) intersected significant thicknesses of massive sulphide mineralization in a new zone at the company's Myra Falls mine property near Campbell River, B.C.

Westmin's 100%-owned Myra Falls project includes the H-W and Lynx polymetallic mines and a 4,400-ton-per-day mill.

The company said the mineralization was encountered in an area north and about 984 ft below the existing Lynx mine workings. The intersections are reported to be on the same stratigraphic horizon as the ore deposits of the H-W mine located some 3 km away.

Westmin reports that two diamond drill holes placed 196 ft apart intersected 49 ft and 85 ft of pyritic massive sulphides respectively. The best hole so far encountered a 46-ft intersection assaying 0.009 oz gold per ton, 0.604 oz silver, 1.8% copper and 7.8% zinc.

The company said encouraging results were also found in other areas of the Ridge zone consisting of 6.5-ft to 13-ft thick polymetallic ore grade massive sulphide intersections.

Exploration geologist Stephen Juras explained that while it would not be economically feasible to mine these smaller intersections, "they will complement the new Ridge zone discovery should fur-

## Dolphin drilling Big Pond showing

Diamond drills are currently probing a new gold showing on Dolphin Explorations (TSE) Cape Ray property in southwestern Newfoundland.

The gold showing, known as the Big Pond occurrence, is situated about 6 km southwest of the main zone where underground exploration work is under way.

The drill program is designed to explore the recently discovered Big Pond zone which has been traced over a strike length of 350 ft and is open to the north. The gold mineralization occurs in a shear zone associated with sulphide-bearing quartz veins. Assays of up to 0.45

gram base metal sulphide deposits," said President Ray Mongeau.

A drill hole collared south of the stringer zone intersected 0.66% copper over a 23-ft core length. Another hole returned 1 ft of 3.15% copper.

Orcana is planning to look for possible depth extension of the East Sullivan zone to the northeast through geophysical surveys and drilling.

ther exploration prove to be successful".

Exploration drifting is now under way to allow more diamond drilling in the area to determine the total extent of the new discovery.

## China First options Union Nickel deposit

China First Capital Corp. (VSE) of Toronto says it has obtained an option to earn a 100% interest in the Union Nickel-Copper deposit in Knox County, Maine.

The agreement requires China First to pay an initial \$30,000 and later \$100,000 before it can acquire the mining lease covering a 100% working interest in the deposit from Toronto consulting firm S.N. Charteris and Associated Inc.

Discovered in 1965, and explored extensively by Cleveland-based M.A. Hanna Co., the property contains indicated reserves of about three million tons grading 1.41% nickel and 0.68% copper.

Denver-based American Mines Services has agreed, subject to gaining regulatory approval, to carry out an exploration and development which includes 10,800 ft of core diamond drilling.

The proposed program is expected to cost about \$852,000(US) of which half is payable in shares at 35¢(US) per share and the balance in cash.

It is hoped that when the program is completed, China First will be in position to determine the feasibility of starting a low cost, open pit mining operation. "Reserves have been well defined, all we need is more metallurgy," said China First Chairman James Stephenson.

averaging better than 1% nickel. The deposit is 140 miles south of Thompson and is one mile from a highway.

Canamax's 75% interest was purchased for \$100,000 cash, a promissory note for \$150,000 and a net

## Hansuld emerges as Spirit Lake's President, C.E.O.

John Hansuld, the man whose name became almost synonymous with Canamax Resources (TSE), has been named president and chief executive officer of Spirit Lake Explorations (ME).

Hansuld resigned as President of Vancouver-based Canamax in March after start up problems were reported at the Ketza River gold mine at Ross River, YT.

Hansuld was unavailable for comment when *The Northern Miner* attempted to reach him at Spirit Lake's Toronto offices. But according to a Spirit Lake shareholder, Hansuld spent his first week in his new role by visiting the company's Jacobson Twp. gold property east of Wawa, Ont.

Located beside Canamax's Kremzar gold mine, the Jacobson property encompasses the old Edwards mine which produced 8,000 tons of grade 0.14 oz to 0.2 oz gold per ton during the 1930s.

After an extensive drilling campaign which yielded a number of encouraging results (including 25.7 ft of grade 0.54 oz gold), Spirit Lake has been evaluating the property's potential.

News of Hansuld's appointment caused the Spirit Lake share price to jump to about \$1.65 on the Montreal Exchange from \$1.20. Former Spirit Lake President Everett Fagg has vacated his position to make way for Hansuld, but will remain a director of the company.

Director William Chymyck has been appointed Spirit Lake's vice-president and treasurer.

Murgor Resources (VSE) has optioned a 50% interest in 16 claims adjacent to Exploration Ore's gold property in the Upper Seal Harbour area of Nova Scotia. The claims cover a westerly extension of the Upper Seal Harbour anticline.

Initially, the first phase ing will test the 1,000-1,200 ft zone in order to join up results obtained by Amamax was formed by Amamax Canamax and Granges.

Previous drilling by Amamax the deposit to depths of ar

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## NEW MINING IMPROVEMENTS EXPL

The Ministry of Northern Development and Mines is bringing a different local implementation of its Claims System (CLAIMS) act.

Beginning September 1, 1989, new forms will be introduced to computerize the work system on unpatented mining claims.

Information collected by the Ministry will be provided with better and faster processing. CLAIMS, the status of mining claim will allow.

Current forms will be replaced by the introduction of the new.

For copies of the new forms, contact the Ontario's nine Mining Districts.



Ministry of Northern Development and Mines  
Hugh P. ...  
Minister



GAC Short Course Notes No. 6

## MINERALIZATION AND SHEAR ZONES

Edited by: J.T. Bursnall  
1989 300 p.

Chemical and mineralogical changes associated with shear zones

Reviews of current dynamic geochemical models for

# Westmin's oil/gas division a major profitable source

VANCOUVER — The oil and gas division at **Westmin Resources** has been its most profitable in recent years, eclipsing all other sources of income by a wide margin. But even though crude oil production was at record levels last year, sharply lower prices had a marked effect on operating profits, shareholders were told at the annual meeting.

The mining division also faced lower prices which contributed to a drop in consolidated cash flow from \$80 million in 1985 to \$52.1 million last year, Paul M. Marshall, president and chief executive officer, pointed out. Commenting on the impact of exchange rates, he noted that a 1¢ increase in the Canadian dollar results in an after-tax charge to Westmin of \$1.5 million.

Net earnings for 1986 were \$8.7 million compared to \$30.5 million in 1985 and revenues were a record \$189.6 million, an increase of 12% from the previous year.

Mr Marshall said there was a

growing consensus that the OPEC accord would hold and precipitate a modest increase in oil prices during the next few years. He was also optimistic about natural gas, suggesting the turnaround "would be sooner than later" and the present U.S. surplus would disappear in 2-3 years. Predicting the gas market there would be bad this summer, he concluded it would steady by fall and any increase in consumption would have to come from Mexico or Canada.

He doubted that 1987 earnings would be better than last year's but said he expected an improvement in 1988. Referring to Westmin's good working capital (\$153.9 million at year-end) and strong balance sheet, he said the company has increased its internal exposure to precious metals since selling off its interest in Lacana Mining.

Responding to a question about whether additional working capital was needed for exploration, Mr Marshall said the company hasn't

restricted exploration because of a lack of money. Rather it has set more stringent requirements for exploration ventures. Conceding there were no bargain basement prices out there, he said the company was interested in new acquisitions "with a satisfactory return."

Westmin plans to increase mill capacity at its H-W mine on Vancouver Island at a cost of \$24 million. The 33% expansion will boost mill throughput to 4,400 tons per day and the payback period will be less than a year, the company estimates. Reserves will last "well into the next century," he said, adding that Westmin preferred a poly metal mine to a primary gold producer. Proven and probable reserves now stand at 12.7 million tons grading 0.07 oz gold, 1.15 oz silver, 2.52% copper, 0.37% lead and 5.37% zinc.

Discussing exploration activities in the minerals division, Dr Arthur Soregaroli, vice-president exploration, noted that five gold discoveries had been made in the past year

excluding the Stewart camp. He also said the feasibility study for the Silbak and Big Missouri properties at Stewart would be completed in June. "We are expecting good things from this study," he added.

Based on a price of \$390(US) for gold and \$5.40 for silver, Westmin estimates the \$62-million capital cost of the project will be paid back within two years. Cash operating costs for gold would be \$134 per oz and \$3.06 for silver. Higher grade material will be mined in the first three years with annual gold output averaging 80,000 oz and silver 560,000 oz during that period.

The common share purchase warrants in respect of 3,801,122 common shares of **Royex Gold Mining Corp.** were posted for trading on the TSE on May 5. Each warrant entitles the holder to purchase one Royex common share at a price of \$7.50 per share at any time before 4 p.m. on April 30, 1992.

June 1 1987

NM 73,12  
92F018

## VANCOUVER ISLAND

# The Pot Begins To Boil

N.V. Prospector  
Dec 86/Jan 87

Prospectors, geologists, junior mining companies and several majors have turned Vancouver Island into one of Western Canada's busiest exploration sites. A number of fall/winter programs are currently underway...reaching levels of exploration activity rarely seen on this quiet picturesque island just a short ferry ride from Vancouver, B.C.

The primary focus of current exploration activity is a banana-shaped zone running through the mountains from Duncan to Port Alberni called the Sicker Volcanic Belt. The search is for volcanogenic polymetallic massive sulphides - simply put - mineral deposits containing several metals - gold, silver, zinc, lead and copper.

The mineralization of the Sicker Volcanic Belt is very similar to the mineralization found at Buttle Lake, near Campbell River - the area which hosts Westmin Resources' Lynx and Myra Mines that have been producing for over 20 years. Activity in this general area heated up since the announcement in 1979 of Westmin's new H-W deposit with reserves of 15,232,000 tons grading 5.3% Zn, 2.2% Cu, 0.07 oz Au/ton, 1.1 oz. Ag/ton, 0.3% Pb. After discovering the H-W orebody, Westmin spent \$250 million developing the mine and installing a 3,000 tpd milling complex.

Recent activity was spurred by the December 1984 discovery of a new massive sulphide zone by Abermin Resources on their Lara Property. The zone, known as the Coronation, has been traced for more than 1,300 feet and has an average width of 6.4 metres and grades of 1.71 g./tonne Au, 38.4 g./tonne Ag, 1.98% Zn, 0.44% Cu and 0.36% Pb.

Currently a few majors and a whole host of juniors are active in the area. Falconbridge has been working steadily since 1983 and is currently finishing a drill program. The company is "encouraged" by results to date and expects to be back in the area in 1987.

### LARAMIDE RESOURCES LTD

Laramide Resources Ltd. operated for five years as a private British Columbia mineral exploration company before completing its first public financing during 1986. The company, now listed on the Vancouver Stock Exchange, has interests in five active mineral exploration projects with an emphasis on precious metals. The star asset in the company's holdings is a 35% interest in the Lara project - a gold-rich base metal deposit located near the town of Duncan on southern Vancouver Island.

923110

Laramide acquired the Lara property by staking in 1981 based on the recommendation of geologist Gary Belik. At this time there were no known mineral occurrences in the area; however, it was underlain by a favourable rhyolite formation of the Sicker volcanic group which was largely covered by glacial drift. After carrying out some preliminary geological work, Laramide entered into an exploration agreement with Abermin Corporation in 1982. In late 1984, after spending \$.5 million on exploration work, Abermin (the project

operator) discovered, by drilling, important gold and silver-rich copper-lead-zinc mineralization.

Since that time more than 46,000 feet of diamond drilling has been completed indicating steadily improving economic potential for a commercial ore reserve.

In 1985, after Abermin had spent \$900,000 on the Lara property, Laramide elected to participate in the project by funding a 35% interest in on-going costs. Laramide made this election rather than choosing a 20% interest carried to a production decision because of the exceptional geological potential for developing large tonnages of gold and silver-rich base metal ore. This potential is enhanced by the location of the property which will allow for low cost mining operations.

The first phase of the 1986 drill program concentrated on exploring in reconnaissance fashion along strike and in parallel zones rather than detailing the limits of known mineralized zones. Twenty-two drill intersections defined several potential ore bodies. The average grade of the 22 intersections is .75% Cu, 1.0% Pb, 4.5% Zn, 2.8 opt Ag and .12 opt Au. But what really generated the excitement was the fact that high-grade material was exposed in a pit at surface for the first time in August, 1986. The pit is located on the Coronation Zone where massive sulphides in the bottom of the pit average 3.04% Cu, 8.30% Pb, 43.01 Zn, 14.98 opt Ag, .72 Au across a width of 11.5 feet.....significantly higher grade than any drill holes.

Laramide is currently underway with the Phase II program which has 15,000 feet planned. Work will be concentrated on the Coronation and Coronation Extension Zones with some exploratory drilling directed towards new geophysical and geological targets on the property. Laramide's trading symbol on the Vancouver Stock Exchange is LAM.

### NEXUS/WESTMIN DRILL PROGRAM UNDERWAY

Nexus Resources Corporation has been granted an option to earn a 50% participating interest in Westmin Resources Limited's Debbie Property by funding \$950,000 in exploration expenses by February 1988. The 1986 program, which will cost \$461,000 is now in progress and will include 5000 feet of diamond drilling.

The Debbie Property is comprised of 232 claim units located 10 km east of Port Alberni, B.C. The property covers a favourable belt of Myra Formation volcanic rocks of the Sicker Group, the formation which hosts Westmin's mines at Buttle Lake 80 km to the northwest.

Five target areas which warrant drilling are being explored in the current program: The upper Mineral Creek zone - 150 m north of, and on strike with, the old Vancouver Island Gold Mine, the BIF - located 1300 m southwest, The China Creek anomaly located 1900 m south of the upper Mineral Creek zone, The Regina working - 500 m south of the China Creek anomaly and the Yellow Creek zone located 1600 m north of the upper Mineral Creek zone.

Nexus Resources Corporation trades on the Vancouver Stock Exchange; trading symbol NXS.

92F072

92F079

NMNER 1 SEPT 1986

## Six-month earnings down for Westmin

Continued weakness in metal prices and sharply lower oil prices are the main culprits behind the sharp drop in net earnings posted in the 6-month period ended June 30 by Westmin Resources.

Despite expanded production from the new H-W mine and higher oil and gas production, the company recorded net earnings of \$1.2 million, a substantial decrease from the \$17.7 million posted in the comparable period of 1985.

Gross revenues for the first six months of this year totalled \$98.6 million, an increase from the \$88.6 million recorded in last year's comparable period.

### MYRA MINE 92F072(12E)

Westmin Resources Ltd operates the Myra mine near the centre of Vancouver Island. The single most important contribution to the Myra operation has been the increase in production from 750 to 2700 t/d in May 1985, reported in CMJ November 1985.

The new underground HW mine, with its better design and larger workings, allows a high rate of mechanization and the use of larger, more efficient machines. Drilling is carried out by Tamrock 2 and 3 boom pneumatic jumbos and also Tamrock long hole drills, while ore is handled by 2, 3.5 and 5 yd<sup>3</sup> Wagner scoops.

The increased mine production and concentrator throughput required an increase in the workforce from 350 to

92F072(12E)

After provision for preferred dividends, there was a loss of 18¢ per common share compared with earnings of 26¢ for the first six months of 1985.

In the second quarter, the company had a net loss of \$281,000 or 12¢ per common share compared to net earnings of \$8.3 million or 12¢ a share in last year's comparable quarter.

Cash flow amounted to \$26.09 million versus \$44.9 million in the comparable 1985 half. As of June 30, working capital stood at \$121.7 million compared to \$87.5 million at the 1985 year end. The latest figure includes approximately \$121 million in cash and short-term investments.

580 for the new complex. While the production increased by 260%, labor increased by only 65%, which resulted in the very significant reduction in mining costs from \$80 to \$50/t.

A totally new concentrator was started on May 6, 1985. Although the flowsheet is based on the old mill process, the larger tonnage treated, higher copper content in the feed and larger equipment make it a more cost effective process.

## Nov 24 86 NMNER Heads mining division of Westmin Resources

A mining engineer who joined the Calgary-based Westmin Resources organization as general manager in 1982 to oversee that company's major expansion of its Myra Falls base metals-precious metals operation on Vancouver Island, George W. Flumerfelt has been promoted to the post of vice-president-operations and president of its mining division.

Gaining broad experience through various senior operating positions he has held in engineering, supervision and management in various mining camps in Canada and abroad, he came to Westmin from Terra Mines in Ireland where he was manager of mining for Terra Mines, a 10,000-ton-per-day base metals operation financed and brought into production by Canadian interests.

Mr Flumerfelt resides at Campbell River, B.C., the nearest community to the Myra Falls minesite.

71 92F072(12E)

### GCNLS WESTMIN RESOURCES LIMITED (MMI-V.T.M) AMAY 87

3 MONTHS ENDED 31 MARCH	1987	1986
Gross Operating Revenue	\$47,441,000	\$55,397,000
Cash Flow	12,186,000	15,910,000
Net Earnings	5,257,000	1,555,000
Per Common Share * 1043046	3¢	(6¢)
Working Capital	113,041,000	111,006,000

\* After preferred share dividend

PROFIT ROSE 3.5- FOLD - In presenting comparative first quarter results, management of Westmin Resources Limited note the sale in February of its 28% interest in Lacana Mining Corporation for \$34,661,000. Proceeds were applied to reduce long term debt and the \$2,758,000 gain on investment is reflected in net earnings for the quarter.

Earlier this year, Westmin announced a 33% expansion of the Myra Falls base/precious metals H-W mine/mill complex near Campbell River, B.C., to 4,400 tons per day at a cost of some \$24,000,000.

A feasibility study, to be completed by mid-year, is investigating open pit gold/silver production from the Silbak Premier/Big Missouri properties near Stewart in NW B.C. Initial annual production of 80,000 ounces of gold and 560,000 ounces of silver is anticipated. At \$390 U.S. gold and \$5.40 U.S. silver, original estimates indicate that, after operating costs, the capital cost of \$62,000,000 for this project could be paid back in about 2 years.



MINER 16 JUNE 86

## Mount Sicker volcanics

# Juniors find polymetallics in their front yard

by David Duval

VANCOUVER—Finding a mine 'close to home' has long been an anomaly in the minerals industry. For years many exploration geologists have concentrated on remote areas with little infrastructure, assuming of course that all the good deposits in the more accessible regions had been discovered. Then came Hemlo and another industry

hypothesis went out the window hopefully for good.

On a clear day many local mining companies can see across the Strait of Georgia to Vancouver Island which hosts one of the best polymetallic mineral deposits in Canada — Westmin Resources' Buttle Lake mining operation. Located in the Mt. Sicker volcanic group, the discovery has been used as a

model for exploration programs on other parts of the greenstone belt including Abermin Corp.'s Lara discovery north of Duncan, B.C.

The Abermin prospect very definitely belongs to a geological class of metal deposits of great commercial and scientific importance in the modern industrial world. These volcanic massive sulphide accumulations are not only a major source of zinc, copper and lead, but of silver and gold as well. All of these are found in the Lara deposit. It is a stratified sulphide deposit and commercial grades have been encountered over thicknesses of up to 27 ft with 17 holes returning an average grade of 0.79% copper, 0.83% lead, 4.54% zinc, 2.7 oz silver and 0.12 oz gold per ton.

In terms of gross metal value, the deposit would rank ahead of Kidd Creek's mine near Timmins, which admittedly has vastly more tonnage. Abermin holds a 65% interest in the Lara discovery with Laramide Resources holding the balance. The latter company is headed by Albert Reeve, who has an uncanny knack of being involved with or at least near most significant discoveries in the province.

Recent results from the Coronation zone (N.M., June 2/86) appear to confirm the continuity of the zone based on a 650-ft stepout. The hole averaged 0.132 oz gold and 3.17 oz silver per ton, along with 5.87% zinc, 1.26% copper and 2.49% lead at a depth of 450 ft. The true width is 9.8 ft. The next phase of exploration will attempt to delineate additional reserves along strike and to depth. Abermin has a \$1 million budget for that next phase which will include some 16,500 ft of drilling.

The Abermin success has made believers out of skeptics who thought the Sicker group had little exploration potential. And work by Westmin, which is exploring Nexus Resource Corp.'s Thistle property, has also helped.

The Thistle property, comprising the approximate equivalent of 100 claim units, is located southeast of Port Alberni on Vancouver Island. Logging roads provide

access to the property. Westmin holds an option from Nexus which permits the major company and

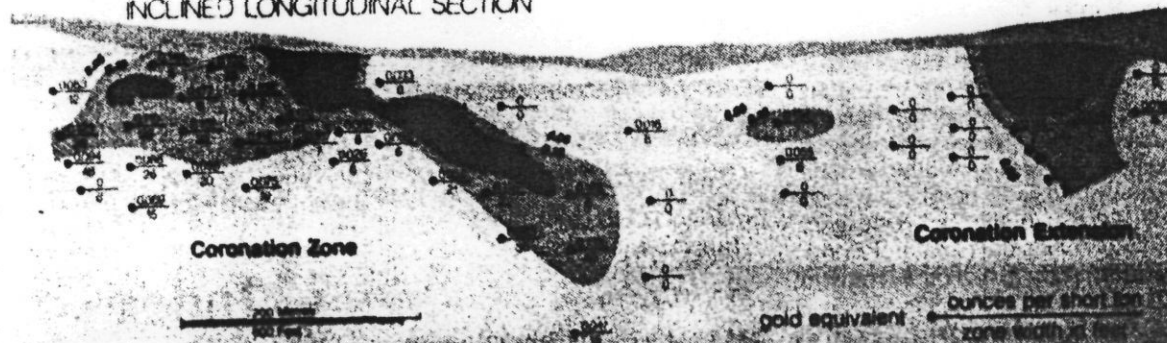
Angle Resources to earn a 60% participating interest in the property or a 100% interest subject to a 20% net profit interest.

The old Thistle mine is central to the current property. This deposit produced 6,867 tons of ore averaging 0.39 oz gold and 0.24 oz silver, with

4.6% copper, between 1938 and 1942. The zone is interpreted to represent part of a volcanogenic massive sulphide deposit hosted in a mafic volcanic unit of the Myra formation — the middle formation of the Paleozoic Sicker group. The property covers a belt of Myra formation rocks which were systematically explored by Westmin for the first time in 1982-3. Expenditures in this program to the end of 1985 approximated \$820,000.

Eighteen significant surface showings of gold and copper-bearing pyrite mineralization have been identified, four of which comprise pebbles or boulders in overburden. All but one are localized in the same 650-1,300 ft thick mafic flow unit which hosts the Thistle mine. This mine flow unit extends the 4-mile length of the property with most of the known mineralization found in the central two miles. Geological mapping, prospecting, soil geochemistry and induced polarization surveys, along with drilling, have been the principal tools used to evaluate this belt. So far, about 15,000 ft of diamond drilling in 37 holes has been completed.

INCLINED LONGITUDINAL SECTION





The proposed 1986 exploration program includes diamond drilling totalling 2,450 m in 20 holes distributed in six target areas. The program also includes seven miles of linecutting and induced polarization surveys, supplementary geochemistry and 4,000 ft of overburden trenching to aid in target definition.

The minimum exploration target for this program is the discovery of an ore zone in the order of 3 million tons at a grade of 0.2 oz gold and 2% copper. This target definition assumes the worst case min-

ing circumstances of shaft access and narrow width stoping. Topography in the area provides potential for adit access. In addition to this primary high-grade target type, significant potential for a lower grade, open pit deposit type is recognized.

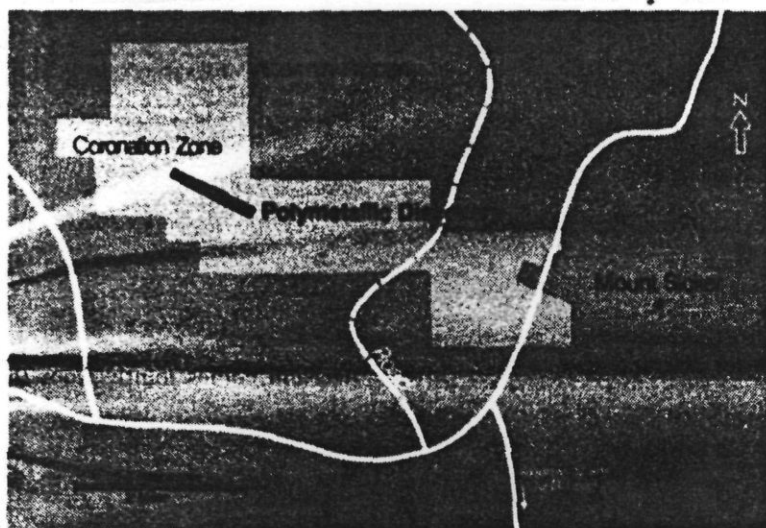
Corporation Falconbridge Copper recently optioned Canamin Resources' Nitnat property near Ladysmith and has made a firm commitment to spend \$100,000 during the first year of the option. Falconbridge has a crew on the property and is conducting exploration surveys. A goldbearing hematite zone has been found on Canamin's Villalta property and several well-mineralized sections have been sent in for assay. The company has also acquired the Amore property 18 miles from Ladysmith which hosts an extremely high mercury anomaly, sometimes indicative of a massive sulphide deposit.

Encouraging results have been reported from Canamera Explorations Copper Canyon property, also in the Sicker group. The company has outlined four potential horizons with geological and geochemical characteristics that are similar to massive sulphide deposits. Canamera plans to test the horizons along strike and down dip with diamond drilling-guided geophysics.

Reward Resources has completed an option agreement with Schreiber Resources for a 48-unit property located four miles south of the

Thistle prospect. Some preliminary geochemical work has been completed and evidence of a major vent system has been noted on the property.

International Cherokee Developments also has a joint venture with Falconbridge Copper, with the latter obligated to fund \$300,000 in exploration by March 1, 1988.



92B/13

92F/1W  
(092F 384)

92C/16W  
(092C 117)

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92B/13W

# Big programs dominate exploration in B.C.

Mineral exploration in British Columbia for 1985 can be summed up in three words: gold, gold and gold (with a few pieces of silver and the odd lump of coal thrown in for good measure).

The total number of claims recorded by year's end is estimated to be in the neighborhood of 59,000, as compared to 81,729 recorded during 1984. Placer leases are estimated to reach a total of 705, as compared to 641 for 1984. Coal license application are estimated at 175, as compared 227 for 1984.

Notwithstanding the considerably lower number of claims staked, exploration expenditures are expected to reach \$66.4 million in hard rock and \$12.8 million in coal for a total of \$79.2 million. Respective figures for 1984 are \$71.2, \$11.7 and \$82.9 million. These figures indicate that considerable funds were expended in major exploration programs. The Toodoggone camp alone is estimated to have been the target of expenditures totalling more than \$6.5 million by six main operators and several smaller ones. Other major programs were carried out at Muddy Lake, Windy Craggy-Mt. Henry Clay, Midway Stewart, Cassiar, Mt. Klappan, Bralorne, Hedley and Aylwin Creek (Willa).

Although a number of major mines continued to remain closed indefinitely, the year also saw some welcome developments. Bell Copper reopened September 24 and Mosquito Creek Gold Mine reopened in July. On Vancouver Island, Westmin Resources in September commissioned its new H. W. Mine and mill at a cost of \$250 million. Blackdome Gold Mine is in an advanced stage of construction, and production is expected by mid-1986 at 180 tonnes per day. Other major mineral and coal deposits are at a stage of advanced exploration or early development.

Gold and silver were actively sought throughout the province in a variety of deposit types, the most important of which are:

- Epithermal deposits.

- Replacements along faults with precious metals associated with listwanites and extensive silica-carbonate alteration.

- Volcanic massive sulphide deposits.

- Bulk mineable porphyry deposits are deposits transitional between volcanogenic massive sulphides and porphyries.

- Gold-bearing skarns.

- Manto-type replacement deposits with silver, lead, zinc mineralization.

Beginning with the most common precious metal target, epithermal deposits, by far the busiest area was the Toodoggone camp, 300 km north of Smithers. Gold-silver mineralization here occurs along the central axis of a 100 km x 20 km belt of early Jurassic subaerial andesitic volcanics and associated intrusives, known as the Toodoggone volcanics. The distribution of deposits is strongly controlled by northwesterly-trending faults. Related hydrothermal alteration includes extensive propylite, clay and silica alteration. The systems fit well into the classic epithermal model of Buchanan, and local hot spring discharge sites have been recognized in several places, particularly in the Alberts' Hump area where

gold is associated with intense silica-barite replacements.

The most important deposit in the Toodoggone camp so far is the Lawyers deposit of Serem Inc., with

reserves in excess of 82,000 tonnes grading 7.2 grams per tonne Au and 254 grams per tonne Ag. Gold at Lawyers is mostly found in a

spectacular amethyst-gold breccia which occurs in veins and replacements along faults and shears. Serem is expected to file a Stage I report and a final feasibility report soon.

Other important epithermal deposits in the area include Silver Pond, very close to Lawyers, the Alberts' Hump deposits, Shas and Chappelle, the site of the recently closed Baker Mine.

An important factor in maintaining a high level of interest in this remote area has been the provincial government's decision to extend the Omineca Resource Road 45 miles into the area from its present terminus at Moosevale Flats, depending on a production decision by Serem.

Another important area of epithermal gold-silver deposits is the old Stewart gold camp. Here Westmin Resources has outlined 3.89 million tonnes of pitatable material grading 2.93 grams per tonne Au and 110.4 grams per tonne Ag mainly within the Glory Hole area of the old Silbak Premier mine. At the nearby Prosperity-Porter Idaho property, Teck Corp., under option from Pacific Cassiar is working on 898,000 tonnes on three major vein structures grading 668 grams per tonne Ag.

A number of other promising epithermal prospects are under investigation in the Stewart area. Of particular interest is the Sulphurets area, some 80 km northwest of Stewart, where spectacular values in gold and silver are found in epithermal veins which are strongly structurally controlled and are associated with extensive quartz-carbonate alteration in Lower Jurassic sandstones, intermediate fragmental volcanics and intrusives. Large, low-grade deposits (18-22 million tonnes of 2.74 grams per tonne Au) transitional to the porphyry type are also found in this area.

A third area of important epithermal vein gold mineralization in the north is in the Cassiar camp, where Erickson Gold Mines, under option with Cusac Industries has outlined what is so far the strongest gold-bearing structure in this camp. The Eileen veins have been traced for more than 335 metres with widths ranging from one to two metres and grades averaging 23.3 grams per tonne Au.

In the southern part of the province the old Bridge River-Bralorne camp is being intensely explored for epithermal to mesothermal

Silbak  
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46046  
(11)

←  
LAWYERS  
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Eileen  
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gold-bearing veins by a number of companies, the most active of which include **Levon Resources**, **X-Calibre Resources** and **Mascot Gold Mines** which has drill-indi-

cated 892,000 tonnes grading 10.3 grams per tonne Au at the Bralorne mine.

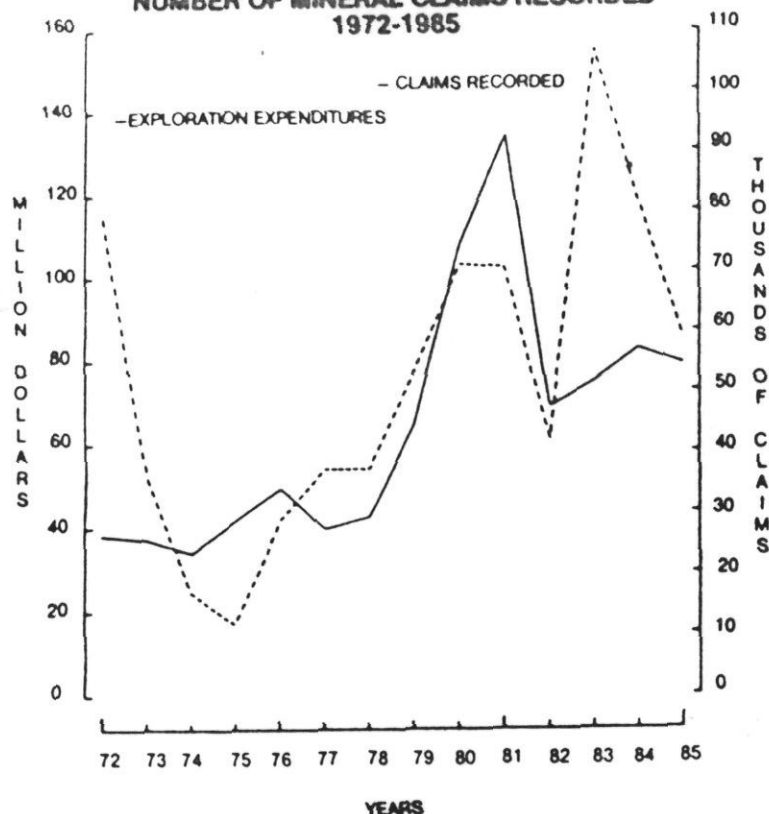
Last but by no means least in the series of successful epithermal gold discoveries is **Blackdome Mines**. Here, bonanza-type gold mineralization occurs in several strong and very continuous epithermal quartz veins cutting felsic to intermediate subaerial Eocene flows and pyroclastics. Reserves are 185,000 tonnes grading 27.2 grams per tonne Au and 128.9 grams per tonne Ag. Plant construction is under way, and production is expected by mid-1986 at 180 tonnes per day.

Another popular target for precious metal deposits are replacements, mostly along major faults, with "no seeum" gold and silver associated with extensive silica-carbonate alteration and the development of listwanites. The Muddy Lake deposit of **Chevron Minerals** is in the Tatsamenie Lake area, 135 km southwest of Dease Lake. Mineralization occurs in a number of zones along the faulted contact between Permian limestone and pre-Upper Triassic volcanics. Reserves and grades of this significant deposit may be released by Chevron in early 1986.

A third major target and opportunity are volcanogenic polymetallic massive sulphides. At **Western Mines** on Vancouver Island, **Westmin Resources** has just commissioned its H-W mine and mill at a cost of \$250 million. This recently discovered deposit is hosted in Upper Paleozoic felsic volcanics of the Sicker Group and has reserves of 13.6 million tonnes grading 2.4 grams per tonne Au, 36.0 grams per tonne Ag, 2.2% Cu, 0.33% Pb, and 5.3% Zn and is open in three directions.

The discovery of this magnificent deposit has sparked a major exploration effort in the Sicker Group of Vancouver Island. In this respect the Mt. Sicker-Mt. Brenton area near Chemainus has seen a lot of activity by a number of companies, particularly in view of the discovery in December, 1984, of a new massive sulphide zone by **Aberford Resources** on its Lara property. This zone, known as the Coronation Zone, has been traced for more than 1,300 ft, has an average width of 6.4 metres and grades of 1.71 grams per tonne Au, 38.4 grams per tonne Ag, 1.98% Zn, 0.44 Cu

# EXPLORATION EXPENDITURES AND NUMBER OF MINERAL CLAIMS RECORDED 1972-1985



and 0.36% Pb. Other companies active in the Sicker belt include **Corporation Falconbridge Copper** on nearby Mt. Sicket, **Westmin Resources**, **Kidd Creek Mines**, **Utah Mines**, **Falconbridge Ltd.**, and others.

In the vicinity of Adams Lake, **Corporation Falconbridge Copper** continued work on the Rea Gold deposit. This polymetallic-barite deposit and the similar Homestake deposit nearby occur in intermediate to felsic Devonian-Mississippian metavolcanic rocks of the Eagle Bay formation. Reserves are 120,000 tonnes grading 18.2 grams per tonne Au, 141.2 grams per tonne Ag, 0.85% Cu, 4.11% Zn and 3.67% Pb in two separate lenses.

In the extreme northwest corner of the province at Mt. Henry Clay,

**Stryker Resources** and other companies, including **Bear Creek Mining** on the U.S. side of the border, continue their search for the source of very impressive Zn-Cu-Ag-Au-barite massive sulphide boulder float.

The Windy Craggy deposit is located a few miles northwest of Mt. Henry Clay. The deposit has affinities with Cyprus and Besshi-type massive sulphide deposits,

occurs in a thick sequence of Norian pillow basalts and has reserves estimated at 300 million tonnes averaging 1.5% Cu and 0.08 Co.

The Reg deposit of **Skyline Resources**, 70 miles northwest of Stewart, is also polymetallic, with affinities to volcanogenic massive sulphides. Drill-indicated reserves to date are 506,200 tonnes grading 17.48 grams per tonne Au.

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GCNL #42 28 FEB 1986

### WESTMIN RESOURCES LIMITED(WMI-V,T,M)

EXPLORATORY MINE PROJECTS ARE - Westmin Resources Limited has formed a new subsidiary, **WESTMIN EXPLORATION LIMITED**, SPUN OFF TO A NEW SUBSIDIARY to acquire the parent's interests in 48 metallic mineral properties and an exploration data bank accumulated over the past 35 years.

Westmin Exploration is filing a preliminary prospectus in all provinces for a public offering of common shares at \$6 each and of flow-through common shares through a group headed by Pemberton Houston Willoughby Inc. and Dominion Securities Pitfield Limited.

Excluded from the properties to be acquired is Westmin's 3,000 tons per day H-W mine/mill complex and properties at Myra Falls, Vancouver Island. The properties to be acquired include a wide variety of minerals with a major emphasis on gold and silver. Westmin Exploration's major projects are the Silbak Premier/Big Missouri gold-silver project near Stewart, B.C., and the Blue Moon base precious metals project 100 miles east of San Francisco. Big Missouri and British Silbak are former producers, but no presently producing mines are involved.

The assets will be acquired for \$34,500,000 payable by issue of 5,750,000 Westmin Exploration common shares at \$6 each. The acquisition price is the appraised value assigned to the properties by Kilborn Engineering, David S. Robertson and Associates and Wright Engineers.

## Oil woes will hurt Westmin

92F/12E

VANCOUVER--For years its most profitable sector, the oil and gas division at Westmin Resources has fallen on hard times. Company president Paul M. Marshall predicted at the annual meeting that low prices for these two products could be around for a while.

But he expressed hope for metals, pointing out that prices are strengthening and that the company has a highly efficient and newly expanded mining operation on Vancouver Island to take advantage of any improvements.

The president of the company's petroleum division, Douglas Miller, said Westmin has asked the federal government to remove the petroleum and gas revenue tax and the Alberta government about reducing production royalties. Operating profit for the petroleum division was ahead 10% last year to \$55.4 million and it accounted for 78% of total revenues.

Average sales of crude and natural gas liquids totalled 6,450 bbl, ahead 45% from 1984, because of increased production from the Lindbergh areas and the inclusion of the Sundance Oil properties for the final three quarters. A 50% interest in these properties was purchased from SOQUIP, the Quebec-owned petroleum company, and the deal was completed in March, 1985.

Approximately 350 wells are capable of producing in the Lindbergh area (representing half of Westmin's total crude output) and the high production trend will probably continue, the company said. Westmin completed a \$22.5 million, 72-well infill development program there in the first quarter of last year to qualify for Petroleum Incentive Program (PIP) payments. And the program is expected to add about 2,500 bbl of oil per day to Westmin's 1986 production statistics. There are no royalty or rental payments on the production lands — only a nominal annual mineral tax.

Westmin has developed extensive experience in tertiary, steam stimulation techniques which can increase heavy oil recoveries to 15-30% or more, as compared to 3-6% in primary production. The steam lowers the viscosity of the oil, causing it to flow to adjacent production wells. 92F071,72

Completion of the new H-W mine at Myra Falls on Vancouver Island will make the operation extremely competitive even at today's metal prices. New bulk mining methods have been introduced, an ultra-modern mill is in place, and new terminal facilities at Campbell River for concentrate shipments are also expected to reduce unit costs.

The H-W mine is now in full production and mechanized bulk mining methods are also being phased in at the Lynx mine, part of which has utilized a cut-and-fill method. Exploration at Lynx has involved the West G zone and reserves have been increased steadily.

MINER  
17 MARCH 1986

## Westmin forms new subsidiary

Westmin Resources has formed a new subsidiary Westmin Exploration to acquire the parent company's interests in 48 metallic mineral properties and an exploration bank accumulated over the past 35 years.

Properties to be acquired include a wide variety of minerals with a major emphasis on gold and silver. The Silbak Premier/Big Missouri gold-silver project near Stewart, B.C. and the Blue Moon base/precious metals project east of San Francisco, Calif., come under the Westmin Exploration umbrella.

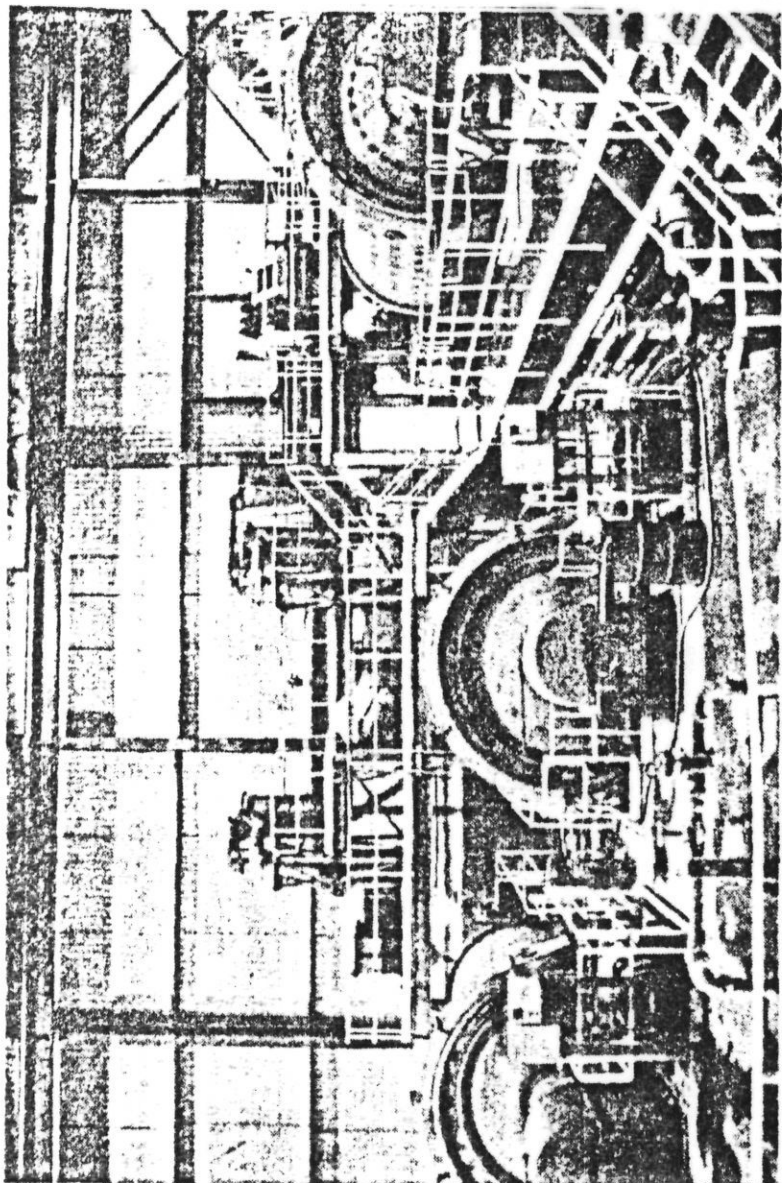
Big Missouri and British Silbak are former producers with no currently producing mines involved in the acquisition.

However, Westmin's 3,000-ton-per-day H-W mine/mill complex and properties at Myra Falls, Vancouver Island is not included in the deal.

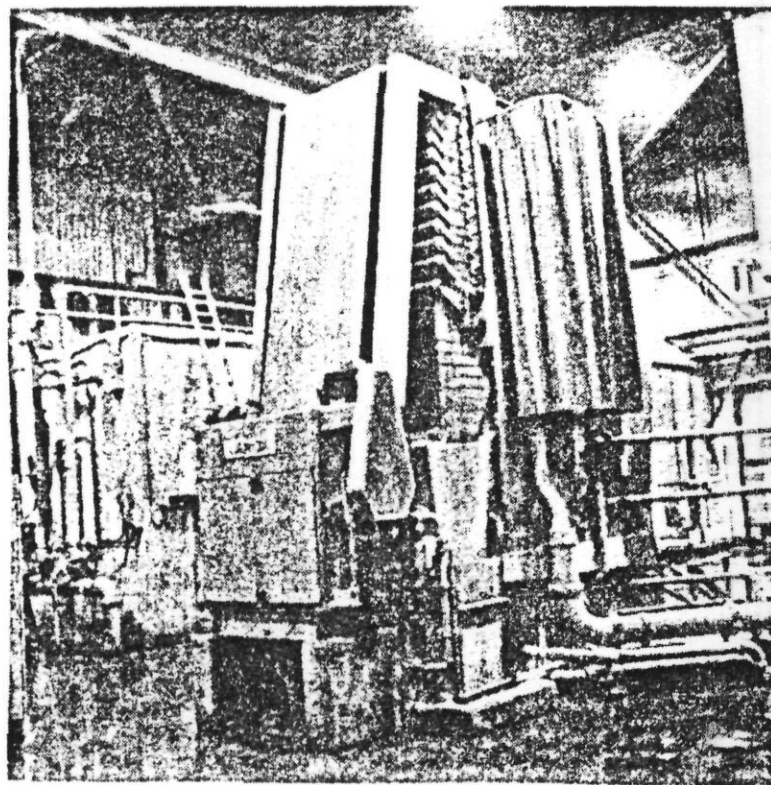
The assets will be acquired for a purchase price of \$34.5 million, payable by the issue of 5.75 million Westmin Exploration common shares at a price of \$6 per share. The acquisition price is the appraised value assigned to the properties by Kilborn Engineering, David S. Robertson and Associates and Wright Engineers.

Westmin Exploration is filing a preliminary prospectus in all provinces, covering the offer to the public of common shares at \$6 per share and flow-through common share.

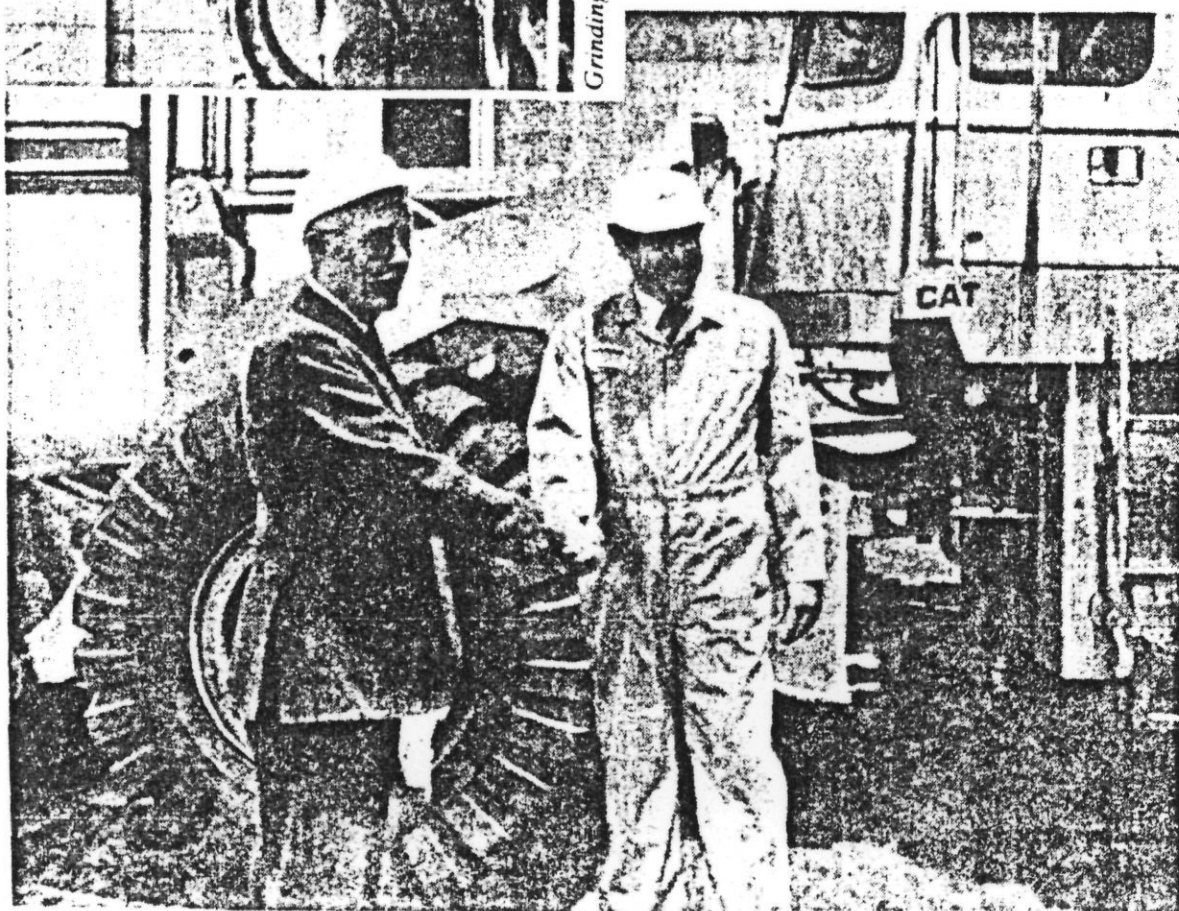
The offering will be handled by a group of investment dealers headed by Pemberton Houston Willoughby and Dominion Securities Pitfield.



Grinding mills in the highly automated mill complex.



Larox pressure filter for zinc-lead concentrates.

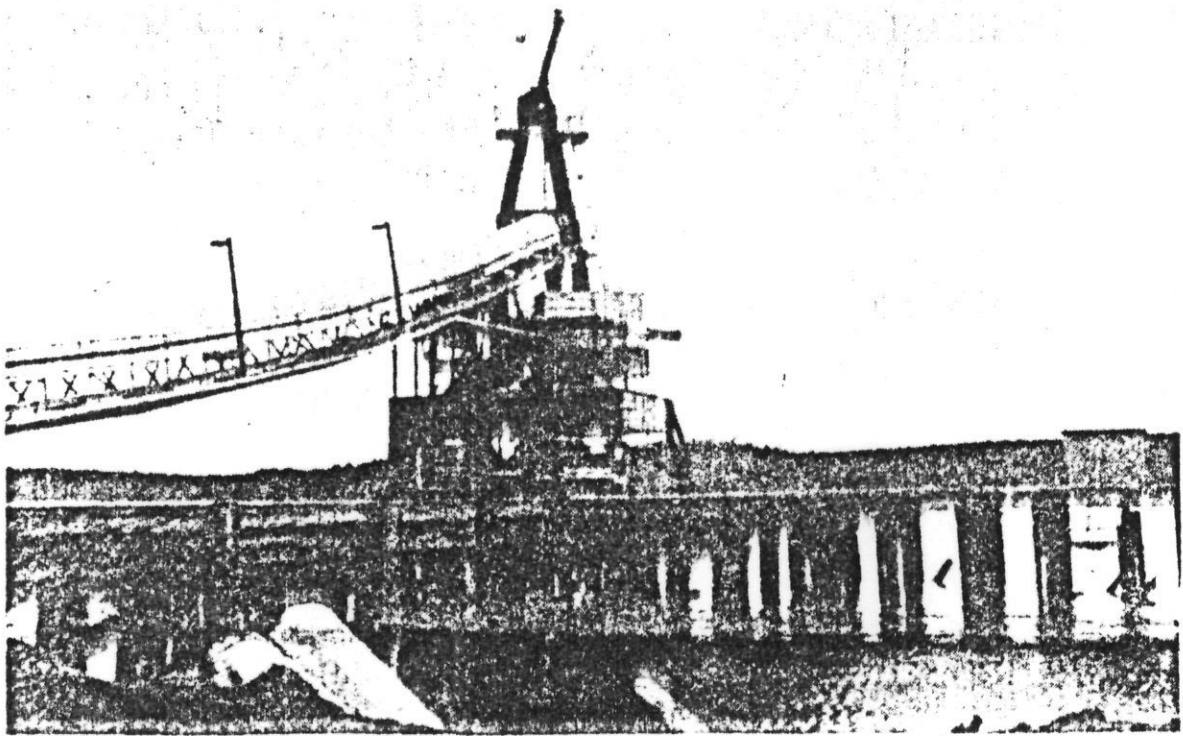


Photos by The Northern Miner

Gordon Montgomery with Stephen Rogers, minister of energy, mines and petroleum resources.

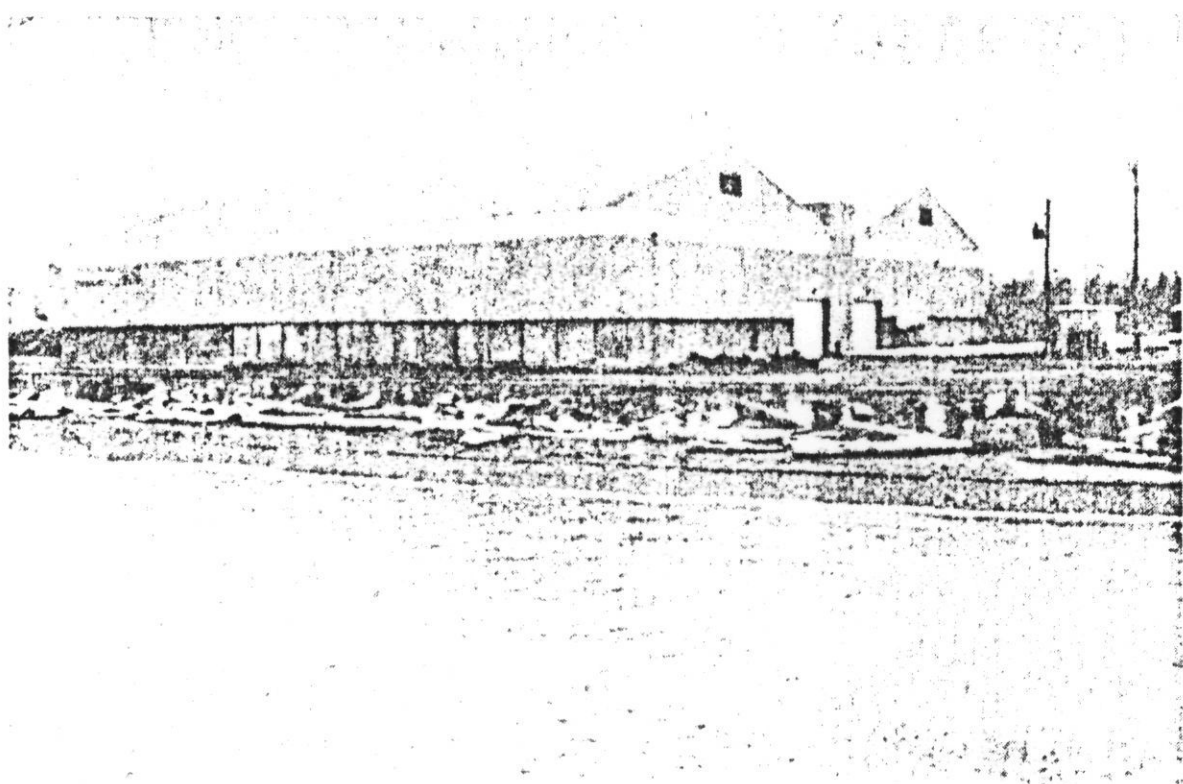
92F/12E Sept. 30 — Westmin Resources  
officially opens its \$250 million  
mine mill expansion at Myra Falls,  
Vancouver Island, B.C.

WINNER  
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*Conveyor for loading concentrates into ships.*

Photos by The Northern Miner



*Concentrate storage building at Campbell River.*

cont 2



Ore hauled 1.4 km by conveyor

NMINER  
30 SEPT 1985

# New mill almost totally automated

CAMPBELL RIVER, B.C. (Staff) — The milling operation at **Westmin Resources** is almost totally automated, something readily evident by the small number of people working in the plant. Ore from the Lynx mine arrives by truck while material from the new H-W mine comes by conveyor, a distance of approximately 1.4 km.

Mill tuneup was normal with the first 1,500-ton concentrator circuit started in May. Modifications to that circuit were completed during the following month. The second circuit came on stream in July and the mill reached operating capacity of 3,000 tons per day in early August.

The grinding section in the mill is conventional with ball and rod mills. There are two parallel grinding circuits in the plant.

Three concentrates are produced — the zinc and lead being shipped to Cominco's Trail smelter with the copper going to Japan. The gold goes out with the copper and lead concentrates.

## Features improve efficiency

A number of interesting features have been incorporated into the plant to improve efficiency and keep operating costs down. A 17-stream on-stream analyzer has been installed and this will eventually be tied into a process controller. The Northern Miner was told.

Outokumpu flotation cells, with an approximate 300-cu.-ft. capacity, have been installed below floor level and the pulp levels can be controlled electronically. These units are covered with metal plates to maximize the available walking surface and to prevent vapors from entering the atmosphere. Operating staff are trained to run the units manually in the event of an emergency.

Not seen in too many milling operations, Westmin has installed two Larox pressure filters — one for zinc and lead concentrates and another for copper concentrates.

## *The centre of the H-W deposit has exceptional widths.*

These filters reduce the water content from 40% by weight to about 6%. This compares with a reduction to 14% using vacuum filters where the concentrate then has to be dried. The Larox filters also take less room and handle about 1.5 tons per cycle, which runs 6-7 minutes.

Because the mine is located in an environmentally sensitive area, extreme care was taken to ensure heavy metals would not enter the drainage system.

As a result, Westmin adopted a sub-aerial technique for tailings disposal. It is a land-based system where tailings are deposited by spray bars located on a berm surrounding the containment area. The system is analogous to depositing sand on a beach.

The solids settle, water runs off, the effluent is pumped into a surge basin and then to the treatment plant where lime is added to raise the pH and precipitate out metal hydroxides which eventually settle out.

There are five parallel settling ponds to ensure all the metal hydroxides are taken out. These hydroxides are then deposited back into the tailings area. All drainage from the system is processed in the treatment plant and so is run off from the waste stockpile which tends to be acidic.

About \$12 million in environmental expenditures went into the tailings area. This technology is not new but Westmin claims the idea of combining the system with a treatment plant is their own.

The tailings area will rise about one metre per year and 50 m is about the limit, according to the company. As an example of how stringent environmental regulations are, trout are placed in discharge water for a period of 96 hours. If they survive, the water quality is considered acceptable.

Fish are more susceptible to metals and if they survive the water will not be harmful to people.

## Generates own power

While there are a number of disadvantages to being located in a mountainous area, there are certainly advantages as well. Westmin has the ability to generate 11 megawatts of power from two hydro stations. The company's original plant generates three megawatts from Tennent Lake and a new plant was installed which generates eight megawatts from Jim Mitchell Lake.

The company looked at tapping into the B.C. hydro grid, which would have meant installing a lengthy power line into the property. But it was more economical to build its own hydro plant. Westmin says generating its own power is 30 times cheaper than using diesel units which it has for standby purposes. With its own power system, costs are fixed and they change little when compared to power provided by a utility. The new Thelwood plant cost \$20 million to install and includes 2.5 miles of buried pipeline down to the power station with an elevation difference of 450 ft.

Major changes were made to Westmin's concentrate storage and port facility at Campbell River. A new ship loader was installed and the dock now can accommodate 20,000-30,000-ton ships. The loader was designed by Wright Engineers, says Westmin. The cost of the over-all project was \$5.5 million and the storage facility alone cost \$3.5 million.

Ship loading is highly automated

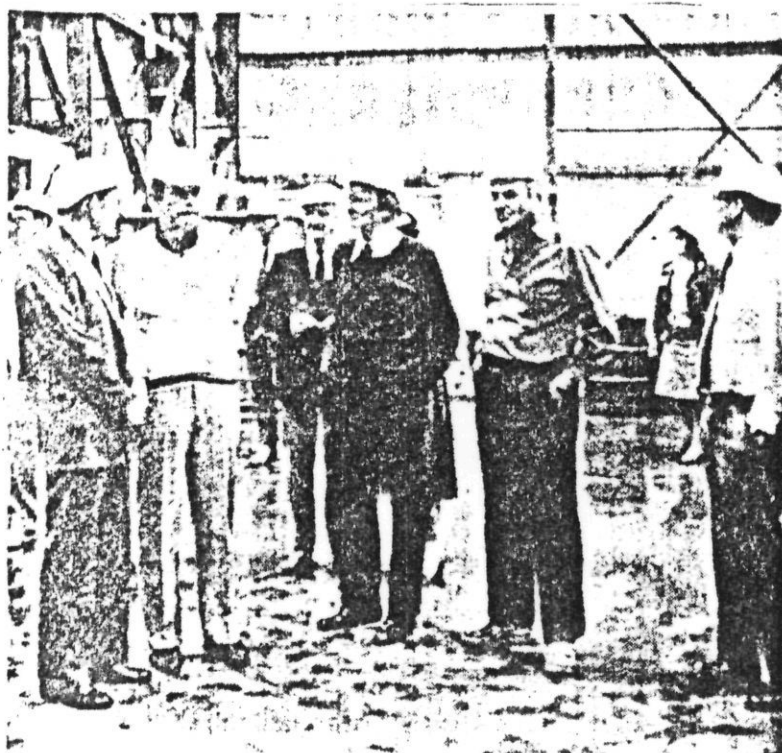
and employees are only on the ship when ships are loading. The loader can handle about 500-600 tons per hour. Copper and zinc concentrates are shipped from the facility but lead concentrates are trucked to Courtenay, about 25 miles to the southeast, where they are loaded into rail cars and shipped across to the mainland by ferry, and then to Cominco's Trail smelter. There are not enough lead concentrates produced to warrant sending them across by barge from Campbell River, Westmin says.

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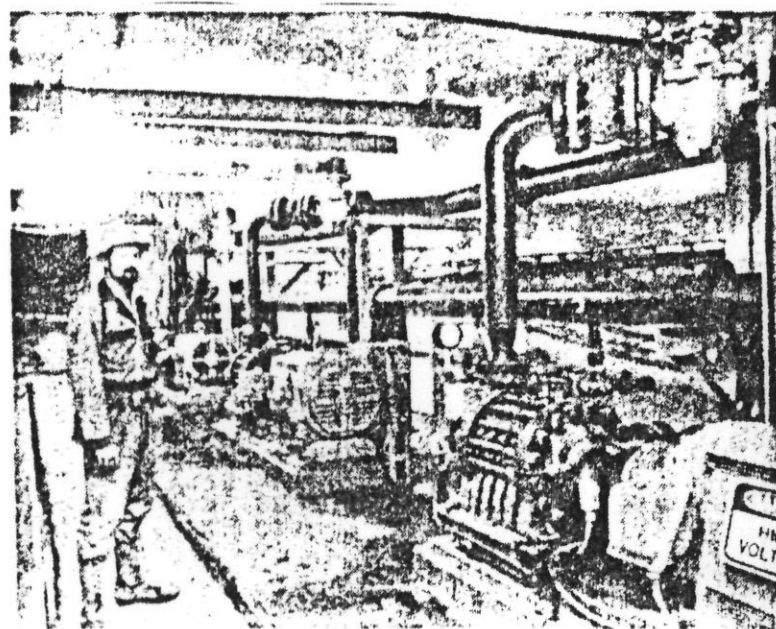
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*Gordon Montgomery, Westmin's executive vice-president and general manager, mining, addresses guests at the official opening of the new mine/mill complex.*



*Guests in the milling complex.*



*Photos by The Northern Miner*

*The pumping station at the lower level in the H-W mine. Water is pumped to surface in a single lift.*

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*Courageous decision*

# Going underground proved up big reserves

**CAMPBELL RIVER, B.C.** (Staff) — The decision to sink a shaft into **Westmin Resources'** H-W orebody was made on the basis of a much smaller minable ore reserve than the 15 million tons which have since been outlined.

Indeed, information at the time indicated the deposit would probably support a production rate of 875-1,300 tons per day, sufficient to feed the company's Myra Falls mill but probably not enough to justify construction of a new and much larger process facility. The new mill will churn out 3,000 tons per day for at least the next 15 years.

Great care was taken to accurately define what actually was there to avoid any costly surprises once the H-W ore horizon was reached. The complex, stratabound massive sulphide deposit was defined on 300-ft. sections and in thicknesses ranging from 10 ft. in the flanks to 200 ft. in the core.

## *Normal mill tuneup saw concentrator start in May.*

The H-W deposit, which is about 800 ft. lower stratigraphically than the Lynx orebody, is essentially flat-lying and shaped like a basin in cross section. It has a polymetallic ore fringe (with significant lead but more gold and silver credits), changing what Westmin calls "blend ore" of which there are three types: zinc pyrite, copper-zinc and high grade copper.

The centre of the deposit has a high grade core and exceptional widths. Open on three sides, the deposit is fault bounded on the north, but ore discoveries on the other side of this structure have not been ruled out, says Westmin's exploration department.

## **Running since 1967**

The operation has been running steadily since 1967 when the Lynx mine went into operation. Ground below the mine is relatively untested although good structure is known to exist there, some of which could be ore-bearing. From 3-4 years of reserves exist in the Lynx including the G zone which is being mined at present.

Lynx has been described as "a series of geological events" and management believes there are similar occurrences between the mine and the H-W which is lower in the stratigraphy. The major difference between the two orebodies is that the H-W is more massive and amenable to bulk mining methods. Because of its size, the orebody lends itself to mining lower grade material, the company explains.

The H-W shaft, which incidentally is named after Harold Wright, a company director and former president of Western Mines (predecessor to Westmin) reached the 2,343-ft. level in April, 1983. **MacIsaac Mining and Tunnelling** was the successful bidder for the contract, supplying its own sinking hoist.

The double-drum, 375-kw Ingersoll Rand hoist was later purchased from MacIsaac and installed as a service hoist. Outside dimensions for the 6-compartment shaft are 21 ft. 2 in. by 14 ft. 4½ in.

There are compartments for two skips, counterweight, manway and services with wooden guides utilized in the cage compartments and steel guides for the skips.

The main cage has only one rope because safety dogs will dig into the wooden guides in the event tension is released on the cable.

The main production hoist is an ASFA double-drum clutched hoist with a maximum hoisting speed of 50 ft. per second. The hoisting rate at that speed is 428 tons per hour.

As a precautionary measure, the shaft is sprayed with water, but only when it is downcast as the natural moisture content in upcasting air is sufficient to keep timbers wet.

## *H-W stands for Harold Wright, former president.*

Fourteen stations have been cut out of the shaft. However, Westmin is only using the bottom six. The other levels will be used for exploration at a later date. Water is pumped from the underground workings to surface in one lift and the shaft sump is reached by a ramp, making it easier to clean out.

The underground portion of the mine has been nearly completed with mine shops and locomotive shops remaining to be done. A trolley system will be installed in the main haulage ways and two locos will be used in tandem, making it effectively a 30-ton loco. Mine cars are 425 cu. ft. Granby units.

For loading purposes, the company has chosen Wagner 5-yd. and 3½-yd. Scooptrams, all diesel-powered. Westmin opted not to use electric loaders because they are restricted in their movement by power cables which have to be towed along with the units.

Two- and 3-boom Tamrock jumbos are used for development drilling because they are flexible and can drill up if there is enough room to position the boom. Button bits are used (1¼ in.) because the regrind interval is longer and less bit changes are required.

Hydraulic jumbos were considered but the company opted for conventional units because of the maintenance aspect of running hydraulic units and having to put in special service facilities.

Eventually Westmin may go to larger diameter holes for production drilling, but until then Tamrock solo drills are being used. These wagon drills have the capacity of drilling fan and flat holes and are highly versatile. The Northern Miner was told.

Raise drilling is totally conventional at present because slot raises are not too long and are relatively simple to complete. Westmin may eventually look at drop raises once full-scale blast-hole mining begins.

Mobile hydraulic rock breakers will probably be used to break up large pieces in draw points, reducing the need for secondary blasting underground. As a result, there will be no need to install grizzlies at ore dumps, the company states.

The mine's compressed air requirements are supplied by by six Atlas Copco reciprocating compressors with a total capacity of 16,000 cu. ft. per minute.

# Westmin opens a B.C. mining showpiece

From Page 1

project through a number of environmental minefields, Stephen Rogers, B.C.'s minister of energy, mines and petroleum resources, emphasized his government was doing everything it could to see operations like this open elsewhere. He described the development as a new mine, rather than an expansion project, pointing to the new mill which is state-of-the-art and highly automated.

With already a 15-year mine life, guests were reminded that the H-W orebody is still open in three directions and also that grades encountered underground have been higher than those indicated in drilling. Indeed, one senior executive told *The Northern Miner* some areas in the orebody average 0.25 oz. gold and 20 oz. silver. But these sections tend to be localized and are not necessarily representative of large tonnages.

High gold values are often associated with an increase in copper content which, in some instances, reach 12% or better. Mine management confirms these high grade portions will be tapped to increase revenues and reduce the payback period in the early years of operation. Net smelter return from some of these sections at today's prices will be \$200 per ton, The Northern Miner was told.

Present reserves stand at approximately 15 million tons grading 0.07 oz. gold, 1.1 oz. silver, 2.2% copper, 0.33% lead and 5.3% zinc. The precious metal content is extremely important and in terms of metal equivalent is on a par with the Pamour mine at Timmins, a major gold producer.

About the only bright spot in the base metals sector, zinc has performed fairly well during the recession owing to its usage as a galvanizing agent and rust inhibi-

tor in the automotive industry. The mine has an abundance of zinc and will be a highly leveraged supplier of the metal.

## Supplies own power

The largest components in the \$250-million H-W project included underground development (\$59 million) and mill and surface facilities (\$57 million). The mine has the ability to supply its own power from two hydro generating stations with a total capacity of 11 megawatts. Power supply and distribution was \$24 million with the next highest item, shaft and underground facilities, coming in at \$23 million.

The mine is located right in the middle of a park so addressing environmental concerns was a key element in the decision to expand. Almost \$20 million was spent on environmental and engineering studies implementing waste management systems to protect and enhance the area. Public participation was an integral part of the program.

These studies addressed environmental concerns over heavy metal content in Buttle Lake, utilizing a disposal system which would have discharged effluent into that body of water.

In the end, Westmin decided on a sub-aerial technique for

tailings disposal, a land-based system which will be sealed and revegetated when mining is completed. All water flows associated with the milling and mining complex (including waste stockpiles) pass through two treatment plants and Westmin confirms it has met performance expectations, more than satisfying all government regulations.

Westmin is aiming for an operating cost of \$50 per ton because the H-W deposit is much more massive than the company's Lynx mine where cut and fill is the primary mining method. The former is amenable to trackless mining techniques and now is producing

about 30,000 tons per month, rising to 80,000 when the Lynx mine is phased out. The H-W should be producing about 60,000 tons in the next few months, the company explains.

Zinc production will be approximately 70,200 tons per year with 40,000 oz. gold and one million ounces silver. The mine will also produce about 17,500 tons of copper and 2,500 tons of lead. There now are some 453 people on the payroll, but this could rise to 575 by early 1986. Monthly payroll is about \$2 million and the project was a major contributor to the economy of Campbell River during the recession.

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NMINER  
30 SEPT 1985

## Cornerstone of mining group

# Westmin opens \$250m. mine

by David Duval

CAMPBELL RIVER, B.C. — Like many other great mines, Westmin Resources' Myra Falls operation started small but grew.

Described by a company executive as "the cornerstone of our mining group," Westmin has just completed a \$250-million capital program to develop its new H-W orebody and triple the mill rate to 3,000 tons per day.

Truly a showpiece in British Columbia's mining industry — and probably nationally as well — this mine-mill complex was officially opened approximately five years after the remarkable H-W orebody was discovered. The polymetallic mineral deposit has been compared (albeit with some reverence) to the Kidd Creek deposit at Timmins which has just about everything else but gold.

The scene might have been different today had not Westmin's formidable exploration department fought hard for the funds needed to make the discovery. Mine life was only three years at the time of the mine's very existence was in jeopardy, a classic bind where

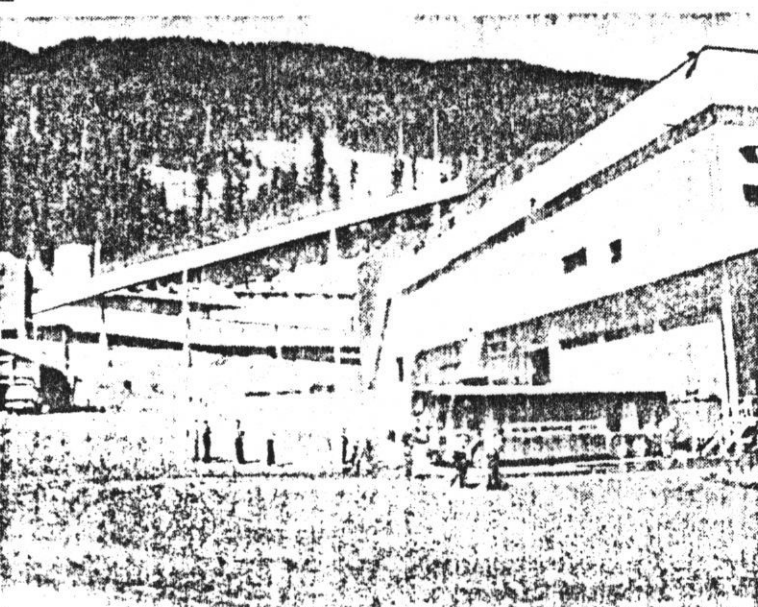


Photo by The Northern Miner

The mill complex with the concentrate loadout at the extreme right.

operating profits are sustained at the expense of exploration.

But 300,000 ft. of drilling (nearly two-thirds of it delineation) changed all that. Mine life now is at least 15 years and will probably carry over well into the year 2000.

Higher grade sections of the massive orebody will also allow the company to capitalize on improved metal prices and reduce the payback period substantially.

According to Paul M. Marshall, president and chief executive officer, the grade of the ore and mining method will offset the extremely low metal prices that exist today, and while conceding the company incurred a very high debt to develop the new mine, he predicted: "When prices improve we will do extremely well." Noting the location of the operation, Mr. Marshall quipped: "It was the first non-recourse financing of a mining project in the middle of a provincial park."

Congratulating Gordon H. Montgomery, executive vice-president and general manager mining division, for steering the

See Page 13



NMINER 25 APRIL 1985

## Westmin predicts growth in petroleum and mining

VANCOUVER — Westmin Resources says the foundation has been laid for major growth in its petroleum and mining divisions with the acquisition of a 50% interest in Sundance Oil's Alberta producing properties and the tripling of production at its base-precious metals property on Vancouver Island.

The Sundance acquisition puts Westmin among the top 30 petroleum companies in Canada in terms of assets, reserves and oil production and the expansion at Myra Falls will sharply increase its output of copper, zinc, lead, gold and silver. At the expanded rate, Westmin should be about the top gold producer in B.C.

At the annual meeting, Paul M. Marshall, president and chief executive officer, pointed out that last year's earnings were seriously affected by the labor dispute at Myra Falls which delayed the expansion project and caused production losses. Noting the \$240-million development is one of the largest programs under way in B.C. at present, he said the expanded mine-mill complex would be fully operational by the fourth quarter.

Although earnings were lower, they were still excellent by industry standards. Net earnings totalled

\$33.9 million last year compared to \$40 million a year earlier with capital expenditures more than doubling to \$145 million because of the expansion program. Working capital was a hefty \$113.4 million.

The H-W mine-mill development is being funded by a \$200-million non-recourse loan, of which \$140 million had been drawn down by year-end. A similar arrangement is being sought to finance the majority of its \$130-million Sundance acquisition.

The petroleum division continued to be the star performer, achieving an operating profit of \$50.6 million, a 10% increase from the previous year. Natural gas sales were higher and the price remained relatively firm at \$2.83 per mcf.

Initial deliveries from Westmin's Beacon Hill project in Saskatchewan began in November and the company views the potential there as "most significant." Last year Westmin expanded its holdings there to 235,000 acres, drilled 20 wells, and had commenced another 12 holes by year-end.

Low gravity oil production from the Lindbergh area in Alberta, which was 69% higher, now accounts for 57% of Westmin's total crude output. For the year Lindbergh production averaged 2,565 bbl. oil per day and output will continue to rise, says Westmin. Regarding the effect the new Western Accord price agreement will have on revenues, Westmin says old oil will go up by about \$7 with new oil (heavy) dropping by \$2-\$3. The net effect on cash flow will be approximately \$200,000, the company adds.

Crude oil and natural gas liquid sales increased one-third in 1984 to an average of 4,462 bbl. per day (the majority from Lindbergh) but the Chinchaga and Wayne-Rosedale fields in Alberta along with the Neptune in Saskatchewan were also major producers.

In the mining division, Westmin says the H-W expansion should lead to "very significant increases in cash flow" as production increases 3-fold to 3,000 tons per day. Also, costs will be reduced because of the new mill and the use of more efficient trackless mining methods underground.

At the Lynx mine, which is located close to the new H-W project, development has shifted to the west "G" zone where approximately 90,800 tons of reserves have been proven and some 150,000 tons are indicated. But these will probably be proven up this year in an aggressive development program, the company states.

Total proven reserves in the Lynx, Myra and Price mines are 757,900 tons grading 0.058 oz. gold, 2.0 oz. silver, 1.06% copper, 0.9% lead and 7.8% zinc. In addition, there are 349,000 tons of indicated reserves at Lynx with higher gold and silver values (0.079 and 2.74 oz.). Reserves in the H-W deposit were unchanged from the previous year and stood at 15.2 million tons grading 0.07 oz. gold, 1.1 oz. silver, 2.2% copper, 0.3% lead and 5.3% zinc.

A feasibility study is scheduled to be completed on the Big Missouri property in June and more drilling is planned for the Silbak Premier project, also near Stewart, B.C., later this year. More drilling is planned for the Blue Moon property in California under a joint venture agreement with Colony Pacific Explorations. The polymetallic deposit is similar to Westmin's Vancouver Island property.

Responding to a question on the sale of its 28% interest in Lacana Mining, Mr. Marshall said: "We are not actively pursuing the sale of Lacana but are entertaining pursuers." Wharf Resources announced its intention to purchase that interest last year but those plans were scuttled by lower gold prices.

Discussing new exploration projects, he said the number one priority was the H-W project which has tended to limit funding for outside programs. Admitting he's very encouraged by results in the Stewart area and also the Blue Moon project in California, he admitted: "We are not on the threshold of a production decision for either area."

GCNL #149 2 AUG 85

### WESTMIN RESOURCES LIMITED (WMI-V,T,M)

6 MONTHS ENDED 30 JUNE	1985	1984
Gross Revenue	\$105,974,000	\$ 62,525,000
Cash Flow	45,431,000	31,247,000
Net Earnings	18,055,000	15,644,000
Per Common Share *	27¢	21¢
Working Capital	108,737,000	135,397,000
* After preferred share dividends		

OIL/GAS PROFIT ROSE 41%. CASH FLOW ROSE 45%. PROFIT ROSE 15%

In the 6 months ended 30 June, Westmin Resources Limited recorded a 41% increase in gas operating profit to a record \$34,963,000 this year compared with last, chiefly due to increased production at Lindbergh and inclusion of production from the Sundance acquisition starting 29Mar85.

Mining division operating profit rose to \$2,210,000 from

\$862,000 in 1984 when production was interrupted by a strike. The expansion from 1000 to 3000 tons per day at the Myra Falls, Vancouver Island complex is on schedule with full production planned for the final quarter 1985.

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## Westmin Resources predicts growth

From Page 1

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See Page 6

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## Westmin earnings bouyed by improved oil/gas revenues

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Petroleum revenues continued to pace earnings at Westmin Resources with a 32% improvement in oil and gas operating earnings during the third quarter ended Sept. 30.

For the 9-month period, Westmin realized net earnings of \$23.4 million or 30¢ per share compared to net earnings of \$31.9 million or 50¢ per share during the corresponding period last year.

The petroleum division generated earnings of \$35.1 million during the 9-month period; essentially unchanged from the same period last year.

In Alberta, Westmin remains one of the 10 most active oil and gas operators.

For the period, the company participated in 129 wells which resulted in 90 oil wells and 15 gas wells for an 81% success ratio, the company reports.

A major deal, which will see Westmin acquire \$125 million of production assets in Alberta from Soquip, is expected to be effective as of Jan. 2, 1985.

Financing for the assets will be via long-term non-recourse borrowing (N.M., Sept. 20/84).

Hampered by lower copper gold

and silver prices, the company's mining division earnings dropped to \$1.5 million from \$9.4 million during the same period last year.

At the company's major H-W mine/mill development, work proceeded on schedule. Ore storage bins have been completed and the construction of the conveyor system from the mine to the mill site is nearing completion.

Underground development is also continuing and production from the H-W mine is expected during the second quarter of 1985.

At the company's Blue Moon deposit in California, detailed work suggests it has a striking geological similarity with the H-W deposits. Reserves at the property are estimated at 3 million tons grading 0.042 oz. gold per ton, 2.43 oz. silver, 1.1% copper and 8.3% zinc.

As at Sept. 30, Westmin had working capital of \$129.7 million

NMNER 28 FEB 1985

## Westmin revenue high but '84 earnings down

Westmin Resources reports annual revenues in 1984 rose to a record \$133,378,000, from \$128,687,000 in the previous year. The petroleum division, it says, generated a record \$97,736,000, versus \$83,429,000 in 1983, with production of crude oil up 33%, and gas sales up marginally.

Earnings in the fourth quarter last year amounted to \$10,496,000, or 17¢ a share, on gross revenues of \$46,608,000, against \$8,096,000 or 11¢ a share on \$34,694,000 gross revenues for the comparable 1983 period, when mining operations were curtailed by a 5-month strike which began in November of 1983.

Because of depressed metal prices and the strike, which severely reduced planned production, mining division revenues in 1984 amounted to \$23,032,000,

against \$34,025,000 in 1983.

Net earnings in 1984 were \$33,871,000, down from \$40,026,000 in the previous year. After provision for dividends on the preferred shares, net per common share came to 47¢ versus 66¢.

Cash flow in 1984 was \$66,873,000, compared with \$70,453,000 in 1983. Capital expenditures rose to \$145,038,000 from \$68,054,000, mainly due to the 3-fold expansion of the Myra Falls, Vancouver Island mine complex, Westmin says.

The current year, the company says, will reflect internal growth within the petroleum division, inclusion of the Sundance acquisition, and start-up of the new 3,000 ton-per-day Myra Falls expansion.

The annual meeting will be held in Vancouver on Apr. 17.

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NMINER  
30 AUG 1984

## Westmin Res. profit down but at \$15m. far from out

After a string of eight consecutive years of record earnings and revenues, **Westmin Resources** reports a slight decline in second quarter and first half results.

For the six months ended June 30, Westmin profit reached \$15,644,000 compared to \$21,727,000 in the corresponding period a year ago. Second quarter profit was down to \$8,371,000 compared to \$10,292,000 in the second quarter of 1983.

The decline is mainly due to non-recurring items such as a 4½-month strike at the Myra Falls mining operation, Westmin says.

After paying preferred dividends, the second quarter per-share profit was 12¢ (21¢ for the first half) compared to 17¢ (39¢ in the first half) in 1983.

Work on the new H-W mine north of the Myra mine is proceeding on schedule with start-up set for the first quarter of 1985. The \$225-million expansion price tag includes a 3,000-ton-per-day concentrator, and new administration and maintenance building at Myra Falls.

On the oil and gas front, Westmin's drilling activity escalated to a total 89 wells drilled with the result that 62 oil wells and seven gas wells were added to production. Crude oil production rose to an average 4,294 bbl. per day in the second quarter from 3,048 bbl. per day in the comparable period a year ago — an increase of 26%. That rate is expected to continue its upward spiral as new wells are brought on-stream.

Apart from drilling commitments in Alberta, the company will participate in the gas-prone Beacon Hill area of west-central

Saskatchewan. Since 1982, Westmin has drilled 14 wells in the area, resulting in 11 commercial gas discoveries. A gas plant and gathering system are currently under construction and gas sales should begin before year-end.

During the first half, oil and gas earnings totalled \$24,772,000 as opposed to \$28,607,000 in the comparable period a year ago. The mining division, hampered by a strike, brought in \$862,000 compared to \$6,835,000. Working capital remains at a healthy \$135,397,000.

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GCNL #103 29MAY84

WESTMIN RESOURCES LIMITED (WMI-V)

92F/102 (092F 071,072)

3 MONTHS ENDED 31 MARCH	1984	1983
Oil/Gas Earnings	\$13,193,000	\$17,168,000
Mining Earnings	(321,000)	3,666,000
Equity in Lacana Mng's(Loss)	(665,000)	(191,000)
Investment Income	2,383,000	2,031,000
Total Bef. Following	14,590,000	22,674,000
Exploration, Admin., Tax	7,317,000	11,239,000
Net Earnings	7,273,000	11,435,000
Per Common Share	9¢	22¢
Cash Flow	15,686,000	23,118,000
Working Capital	135,447,000	133,915,000
Long-Term Debt	72,000,000	27,000,000
Common Shares Issued	37,874,948	37,600,012

The decline in first quarter earnings of the Petroleum Division of Westmin Resources Limited this year compared with last is almost entirely attributable to lower sales of natural gas which averaged 47,000,000 cubic feet per day, down from 66 mmcf/day. The average price received for gas was actually up slightly to \$3.06 per mcf from a \$2.90 average for all of last year. Crude oil and natural gas liquids production continued to climb to an average of 4,039 from 3,733 a year before. There average price received was about a dollar per barrel higher than the 1983 average.

Westmin participated in drilling in 80 wells in the first quarter, all in Alberta. This resulted in 55 potential oil wells, 10 potential gas wells and 15 dry holes for an 81% success ratio. In addition, 6 farmout wells (5

oil and one gas) were drilled on Westmin acreage at no cost to the company. Low gravity oil production, chiefly from the Lindbergh area of east-central Alberta, averaged 2,054 bopd or just over half of all crude production.

The 4.5 month strike at the Myra Falls multi-metals mining operation on Vancouver Island ended on 23Mar84. Progress on the H-W project was delayed as a result of the strike. However, the company has secured a 35-month contract which will assure a smooth transition from the current expansion to the resultant threefold increase in production. The terms of settlement were similar to Westmin's original offer

A letter of intent has been signed and a formal agreement is being drafted with Colony Pacific Explorations Ltd. regarding Colony's Blue Moon property in east-central California. This is a polymetallic zinc, copper and precious metals prospect which has great similarity to Westmin's Myra Falls deposits. (See GCNL 98(84) page 2).

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NMSEVER 31MAY1984

### Westmin's profits dip during quarter

Westmin Resources' first quarter earnings fell to \$7,273,000 compared to \$11,435,000 for the same period in 1983 due largely to a strike at the Myra Falls base and precious metals mine during the 3-month period.

The 4½-month labor dispute ended Mar. 23 with a 35-month contract which will take the company through completion of the current threefold expansion and into a higher production phase.

Cash flow during the quarter fell to \$15,686,000 compared to \$23,118,000 with the mining division showing a loss of \$321,000. Oil and gas earnings totalled \$13,193,000.

Working capital at the end of the period stood at \$135,447,000 compared to \$133,915,000 at the end of 1983's first quarter.

While the strike delayed start-up of the H-W project until early 1985, it is expected that the H-W expansion will be completed in time to benefit from the metals price cycle upswing.

92F/102 (092F 071,072)



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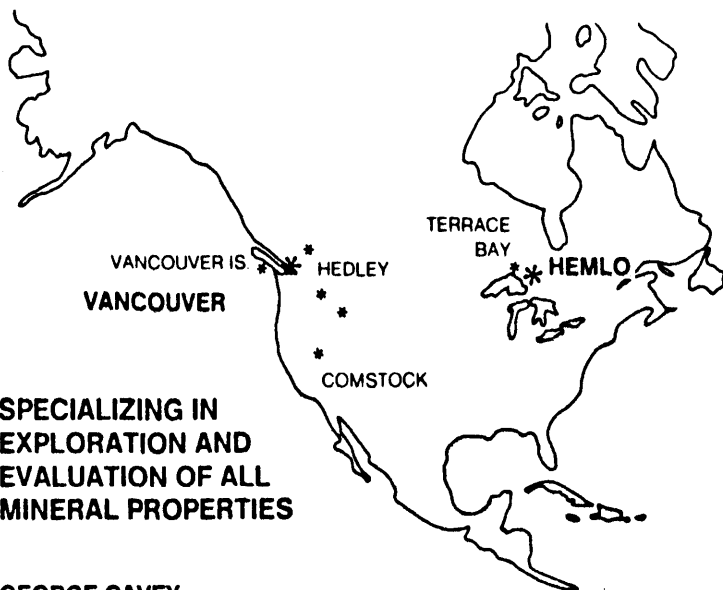
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for early production. The orebody remains open in three directions. Drill indicated geological reserves for the H-W orebody remain unchanged from 1982 at 15.2-million tons averaging 0.07 oz/ton gold, 1.1 oz/ton silver, 2.2% copper, 0.3% lead, and 5.3% zinc.

104B 1E (104B 046)  
Big Missouri/British Silbak. Some (104B 051)  
eleven miles inland from Stewart, British Columbia, near the tip of the Alaska Panhandle, Westmin has spent several seasons defining and expanding ore deposits in the Big Missouri and British Silbak properties. Both of these were former producers, and the properties are separated by less than a kilometre at their nearest points.

Westmin has spent about \$2.4-million over five seasons on the Big Missouri property, to explore four potential open pit zones with indicated reserves of 2,167,000 tons averaging 0.098oz gold equivalent, with minor lead and zinc values.

Mine evaluation studies are under way, and will form the basis of a feasibility study, to be delivered to *Tournigan Mining Explorations Ltd* by 1 June 1985. This is in partial fulfilment of an option agreement wherein Westmin may earn a minimum 70% interest in the property.

Under an agreement with *British Silbak Premier Mines*, Westmin can earn 50-80% interest in the property through a series of work commitments and cash payments. Numerous near-surface and underground targets have been identified for future exploration. The 1983 program included diamond drill holes with intersections ranging from about 25ft to over 160ft. Gold values averaged around 0.05 oz/ton, with silver values in the range 0.1-0.2 oz/ton.

**Colony Pacific.** In March 1984 Westmin concluded an agreement with Colony Pacific Explorations whereby Westmin can earn a minimum 50% interest in the Blue Moon-American Eagle property in Mariposa County, California.

Over the past three years, Colony Pacific has defined 2.7-million tons averaging 0.045 oz/ton, 1.71 oz/ton silver, 0.88% copper, and 7.15% zinc, with the deposit open to depth and to the south. Another 10,000 feet of diamond drilling is in progress, and Westmin is committed to spend \$300,000 on the property by 30 September 1984, another \$700,000 by 31 March 1985, and \$5-million by 1988. The deposit has similarities to those currently being mined at Westmin's Myra Falls complex.

Commenting recently, Dr A E Soregaroli, Westmin's vice-president exploration, noted that Colony Pacific had done a superb job in its work on the property.

WMJNER  
APRIL 1984



Westmin Resources: at the Big Missouri/Silbak exploration camp are Dr Art Soregaroli, vice-president, exploration, mining division (left) and Gordon H Montgomery, executive vice-president and general manager, mining division (right) with Shaun Dykes, geologist.

## New directions for Westmin Resources

Westmin Resources Limited has come a long way in recent years from the days when, known as Western Mines Limited, it was a respected but perhaps rather anonymous company, mainly engaged in mining in a picturesque part of Vancouver Island, British Columbia.

That particular property turned out to be something of a 'sleeper' with a highly promising orebody and a current very sizeable development program. There is more promise in two almost adjoining properties in Northern BC, the Big Missouri and the British Silbak, now being explored.

The latest development in the metallic mineral field (Westmin has considerable oil, gas, and coal interests) is a gold, silver, copper, zinc property in California (Blue Moon-American Eagle).

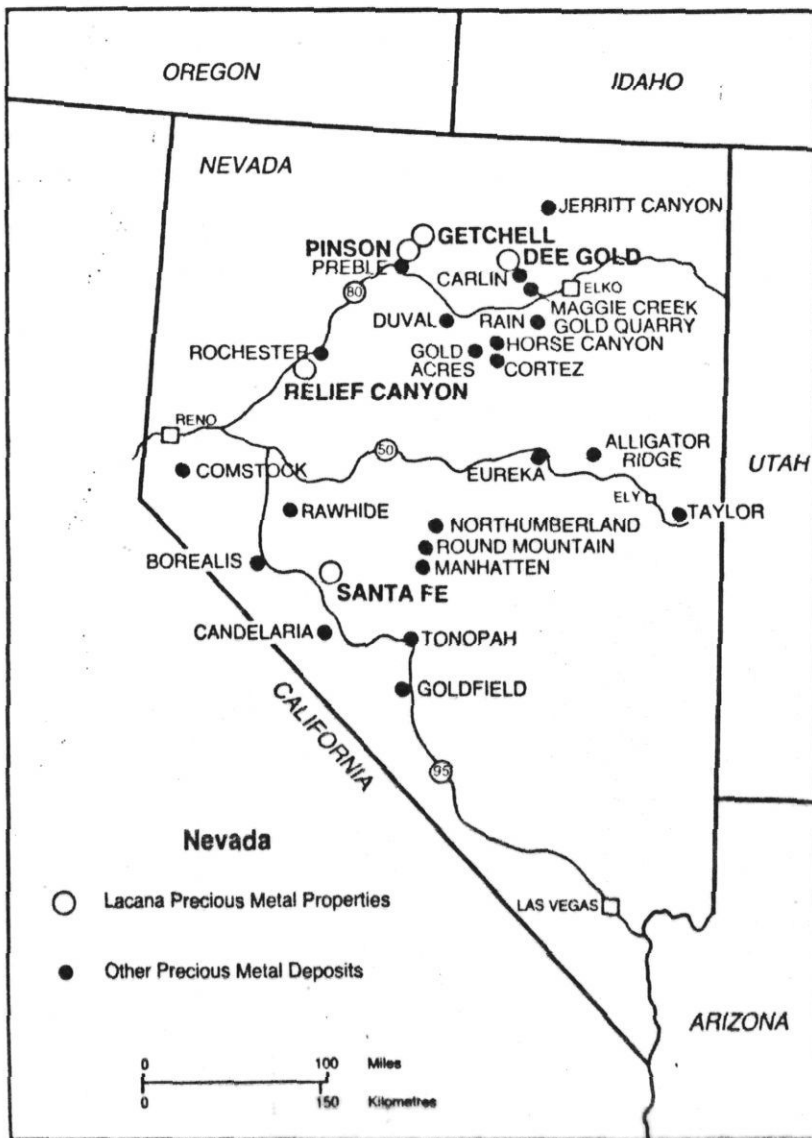
To summarize, Westmin Resources is well represented in exploration and development projects along the Pacific Rim of North America.

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Myra Falls mining complex, inland from Campbell River, Vancouver Island, the complex includes four orebodies: the H-W, Lynx, Myra, and Price. The Lynx and Myra were producing in 1983, and work continued on access to the Price orebody. Diamond drilling defined some 360,000 additional tons of mine average ore in the new G zone west in the Lynx mine.

The new H-W orebody is believed to be among the more significant massive sulphide developments in Canada, in recent times. Some \$225-million will be spent on construction and development. The expansion, already well under way, includes a new 3000 ton/day concentrator, new administration and maintenance buildings, and other facilities, including expanded hydroelectric generating capacity.

The project was due to be completed by late 1984 or early 1985, but was delayed by a strike which started on 16 November 1983 and was still in force in March 1984. Despite this, some underground development has been completed on the new H-W mine and orebody, which is scheduled to triple the current capacity of 1000 tons/day by 1985.

Because sufficient ore had been established to justify the decision to proceed with the H-W expansion, diamond drilling in 1983 was limited to definition drilling of the zones planned



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## Westmin oil and gas division continues strong performance

VANCOUVER — Westmin Resources' oil and gas division continues to be a strong performer with cash flow and earnings at all time highs. According to the company's annual report, gross revenues from natural gas, crude oil and gas liquids totalled a record \$83.4 million in 1983 compared to \$69 million the previous year.

A major contributor to that performance was the Lindbergh-Hazeldine-Vermilion area of east-central Alberta. Westmin says the area has become one of the largest sources of cash flow, adding it's also a relatively low risk development area.

Apparently the wells here qualify for Petroleum Incentive Program grants, the production is readily marketable, and it also qualifies for New Oil Reference Prices.

In 1984, Westmin plans to drill 62 wells at Lindbergh and another dozen in low gravity producing areas, bringing the total on production to over 200 wells. There were 137 on stream by year-end. As part of an enhanced recovery program, the company will drill 12 directional wells to augment four existing producers on a quarter section development. This will fully develop 160 acres for the installation of permanent thermal recovery facilities as the first phase in a larger scale tertiary recovery program, Westmin explains.

Pipeline construction for the Lindbergh production should be completed and fully operational in the second quarter. The completion will coincide with the commissioning of a \$3.5-million, 3,000-bbl.-per-day cleaning plant and both these projects will result in significant savings in trucking and oil cleaning costs, the company claims.

Westmin was one of the more active operators in Alberta last year, participating in 137 wells of which 75 were oil, 31 gas and the remainder dry holes. Other operators drilled 33 wells on Westmin lands at no cost to the company. Westmin will have a royalty interest in the wells, 17 of them oil the other nine gas.

Proven reserves of crude oil and natural gas liquids at year-end stood at 10.8 million bbl. while total proven and probable reserves amounted to 83.9 million bbl. No new gas reserves were proved up because of market

conditions and the reserve inventory (proven) at year-end was 386.4 billion cu. ft. Combined with probable reserves, the total comes to 492 billion.

Westmin also notes that an aggressive exploration program in the Lynx mine outlined the new G zone west which has a strike length of 1,400 ft. The zone is still open at both ends and is being prepared for initial production in the second half of 1984. Total reserves in the Lynx (where the majority are), Myra, and Price mines amount to one million tons grading 0.06 oz. gold, 2.6 oz. silver, 1% copper, 0.9% lead, and 7.4% zinc. But the bulk of the reserves occur in the H-W which has 15.2 million tons grading 0.07 oz. gold, 1.1 oz. silver, 2.2% copper, 0.3% lead and 5.3% zinc.

On the exploration front, the company has located four potential open pit zones at its Big Missouri property near Stewart, B.C. The prospect falls under an option agreement with Tournigan Mining Explorations and Westmin can earn a 70% interest in the project. Mine evaluation studies are currently under way and a feasibility study must be submitted to Tournigan by June 1, 1985.

## Westmin strike over

The strike at Westmin Resources' Buttle Lake mining operation on Vancouver Island is over after four months. According to Gordon H. Montgomery, executive vice-president and general manager mining division, the new 3-year contract will run to Aug. 31, 1986. Full scale production will resume this week, he adds.

The settlement with the Canadian Association of Industrial, Mechanical and Allied Workers will allow resumption of construction activity and underground development for the new H-W project which was scheduled to triple existing production capacity by 1985.

Mr. Montgomery admits there is a possibility some of the lost time can be made up but he can't say how much at this moment. One problem area is the underground development for the H-W mine which was being handled by Canadian Mine Services. That company recently went into receivership although its U.S. subsidiary, American Mine Services, continues to function normally.

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## WESTMIN RESOURCES LIMITED

## YEAR ENDED 31 DECEMBER

	1983	1982	Westmin Resources Limited has
Total Revenue	\$128,687,000	\$124,874,000	reported production of oil and
Including Petroleum Division	83,429,000	69,039,000	natural gas was at record levels, up
Mining Division	34,025,000	47,504,000	27.5% and 5.9% respectively during
Cash Flow	70,453,000	72,183,000	the year ended 31Dec83.
Net Earnings *	40,026,000	39,812,000	Mining Division revenues in 1982
* After Dividends			which included a \$10,000,000 advance
Earnings Per Common Share	66¢	65¢	royalty payment on a coal lease agree-
Working Capital	\$140,452,000	\$ 76,054,000	ment, while 1983 revenues were

adversely affected by a strike which commenced in mid-November at the Myra Falls, Vancouver Island mining complex. Capital expenditures during the year amounted to \$68,054,000.

During 1983, Westmin doubled the annual rate of dividends on the common shares to 20¢ per share. Earnings in the final quarter, which were adversely affected by the Myra Falls strike, amounted to \$8,096,000 or 11¢ per common share versus \$10,783,000 or 20¢ in the comparable 1982 quarter. Total revenues came to \$26,368,000 versus \$34,367,000 while cash flow amounted to \$15,754,000 versus \$19,050,000.



min can earn a 70% interest in the Big Missouri property. In conjunction with that program, Westmin is also doing exploratory work on **British Silbak Premier Mines** 87-claim property 15 miles north of Stewart. By the end of August, Westmin had spent \$675,000 on the ground which included extensive trenching and diamond drilling. The majority of that drilling (75%) was done on the central part of the property and 16 mineralized intercepts were encountered in 12 drill holes completed immediately north of the glory hole. But further drilling will be required to determine the significance of those preliminary results.

Although Westmin's **Buttle Lake** property on Vancouver Island is not a primary gold producer, a tripling of the production rate there to 3,000 tons per day will move the company into the forefront of B.C. gold producers. Development of the **H-W** mine which, including the mill expansion and related facilities, will constitute a \$225 million capital expenditure, is currently under way with start-up projected for the last quarter of 1984. In 1982, the operation produced 20,000 oz. gold (at a 930 ton-per-day mill rate) and 959,000 oz. silver.

But the gold grade for the H-W deposit (0.07 oz.) will be 0.01 oz. higher than that previously mined, improving gold output even further. But silver values will be less than half that encountered previously in the underground operation.

**Teck Corp.'s Afton** mine is also a significant producer of precious metals although last year a strike and later a recession-related shut-down, affected production dramatically. The last full year of production was 1981 when 41,024 oz. gold was produced along with 246,150 oz. silver. It has a mill capacity of 7,500 tons per day.

Afton reopened in May but the company's future is tenuous with gold and copper prices currently below profitable levels. Compounding the problem, the mine is still in a low grade cycle.

Despite its small mill capacity of 120 tons per day, **Teck's Beavertell** mine is a real money maker. With a herd of grade of 12.9 oz., the mine produced 467,433 oz. silver in 1982 and a profit for Teck of approximately \$1.3 million to Sept. 30, 1982.

#### Resumes production

In the Yukon, **United Keno Hill** Mines' silver operation near Elsa has restarted production after being shut down for over a year. The mine had been producing at 8,100 tons per month but the new rate was scheduled to be 5,500 tons per month which would yield about 115,000 oz.

silver per month from this high-grade operation. The company's concentrate is sent to Cominco's Trail smelter. A recent labor contract which ends in June 1985 should allow the company a period of labor stability, with known costs, enabling the operation to get back on its feet again.

Although not a primary silver producer, **Cyprus Anvil Mining** ranks on a par with **United Keno** (when in full production) as far as silver output is concerned. Closed in June, 1982, because of poor metal prices for lead, zinc and silver, the federal government has granted Cyprus Anvil a \$19.6 million interest-free loan which will allow waste stripping at the mine located near Faro, Yukon. In its last full year of production (1981), the mine accounted for

1.7 million oz. of Yukon silver production. Only a significant increase in lead-zinc prices will allow this high-cost operation to produce as it has in the past.

#### Potential producer

One of the more interesting "potential silver producers" in the Yukon is **Regional Resources** Midway property. Actually, the main discovery is just over the B.C. border but the huge property encompasses considerable ground with good potential in the Yukon as well. At the end of last year's program, **Regional** announced reserves of 3.5 million tons grading 12 oz. silver and 18% combined zinc-lead. A major exploration program this year costing approximately \$2.3 million should improve the reserve picture even more. **Canamax Resources** is expected to take over as operator next year.

Of all the placer mining operations in the Yukon, **Queenstake Resources** probably draws the most interest. It operates a placer dredge on Clear Creek and expects 1983 will be a record year as far as gold production is concerned from its Yukon operations. Weather problems delayed start-up last year but conditions were excellent at the onset this season which prompted the company to forecast gold production of 6,000 oz. in 1983. **Queenstake** which is 45% owned by **Canada Tungsten Mining**, has a number of excellent gold properties both in Canada and the U.S. With a strong mineral portfolio, that company expects to be a major precious metal producer in the future.

#### Finds new zone

**Mosquito Creek Gold Mining** operates a small gold mine near Wells, B.C. which, although producing at a rate of 80 tons-per-day, is technically still in the exploration stage. Recently the company

reported it has discovered a new ore zone on ground it holds under option from **Wharf Resources**. **Mosquito Creek** feels the discovery could be the largest found on the property since the inception of production in 1980. At the moment, the company is trying to ensure an adequate stockpile is on hand to allow maximum production through the winter months.

**Blackdome Exploration's Clinton** gold prospect under option to **Heath**

**Steele Mines**, a wholly-owned Noranda subsidiary, is currently the subject of a detailed exploration program by **Heath**. By meeting its option commitments, **Heath** eventually could own a 55% interest in **Blackdome**. Assuming this year's results live up to expectations, the company could be in a position to make a production decision early in 1984. At the end of last year the property had drill-indicated reserves of 455,000 tons grading 0.32 oz. gold and 2.7 oz. silver.

**Mascot Gold Mines** has been exploring its **Hedley** gold property for years. The old **Nickel Plate** mine was a major producer in the past with a historic grade in the range of 0.2-0.3 oz. At the annual meeting earlier this year **Mascot** said a reserve of at least 500,000 tons would be needed to warrant a production decision which most observers feel it has now. **Campbell Resources** took over **GM Resources** this year which held a 73% interest in **Mascot** but it's still uncertain whether **Campbell's** entry is a positive development or not as far as the mine ever achieving production again.

#### Outstanding successes

A number of Vancouver-based companies have chalked up some outstanding successes in the U.S. including **Pegasus Gold** which operates a gold-silver heap-leaching prospect near **Landusky, Mont.** The company expects gold production from the property will be over 70,000 oz. this year. In the three months ended June 30 the seasonal mining operation generated a net profit of \$2.09 million for **Pegasus**.

**Inca Resources** **Rich Gulch** gold property in California is in the feasibility stage and a production decision will probably be based on a 3,000 ton-per-day mining rate with a grade of 0.12 oz. gold.

# B.C. financing flows to Ontario

By David Duval

Considering that B.C. hosts one of the greatest risk-capital markets in the world (the Vancouver Stock Exchange) it's ironic that most of the money raised in the province goes elsewhere. Although the province is endowed with a wealth of natural resources, exploitation of these resources is generally more difficult and expensive than in other parts of the country.

The mountainous terrain, high labor costs and low productivity — all contribute to making the province a high-cost area for new mining developments.

Predictably, where costs are lower and the logistics better that's where companies will be heading. And this is particularly the case in Eastern Canada where B.C.-financed companies have already precipitated several discoveries the best known of which is undoubtedly Hemlo. A substantial portion of those exploration dollars is also going to the U.S.

Ontario's mineral incentive program has provided further stimulus to explore in the province, significantly reducing capital requirements for such work. But there seems little chance a similar program will be initiated in B.C. because of the provincial government's current restraint program.

While exploration in B.C. last year ended on a high note (with several intriguing gold discoveries announced) follow-up work on these properties, although encouraging, did not live up to earlier expectations. Precious metals exploration, it seems, is considerably more difficult than people ever imagined — especially for gold where the erratic nature of the metal usually requires a great deal of close-spaced drilling to block out a minable reserve.

Even though 0.3 oz. gold by industry standards today represents a decent grade underground reserve, that often "non-homogeneous" one-third ounce occurs in one ton of rock — not the easiest thing to find. There is also a marked trend towards reactivating old producers and many companies are finding old data from these mines are not nearly as accurate as was thought. Also that they are simply inheriting someone else's problem.

## Hurdles

The past few years have been devastating for B.C.'s mining industry and the precious metals sector didn't escape the onslaught of high interest rates and low metal prices. In most cases, existing gold producers in the province are struggling to make ends meet, including Carollin Mines near Hope, B.C. and Scottie

Gold Mines near Stewart. Although Scottie recently received an equity infusion from Goldcorp Investment, a Toronto-based holding company which could pump as much as \$3.5 million into its treasury. Already, the first instalment of that financing has allowed Scottie to step up exploration at its Summit Lake gold mine both underground and on surface, and early in the program the results are very encouraging, it says. Prior to the Goldcorp transaction, Northair Mines had a 21% equity in Scottie but it was required to convert \$1.6 million in Scottie debt into shares (272,593) increasing that equity further. Northair's gold mine near Squamish remains closed and will probably be until gold reaches at least \$US500.

At last report, Carolin was seeking a further equity infusion to keep its Ladner Creek operation afloat but the company is heavily in debt, with a relatively small reserve inventory, and a complicated recovery process. The recent drop in gold prices will only aggravate an already difficult situation.

## Bright spot

About the only real bright spot on the horizon is Erickson Gold Mines (180 ton per day) but profitable gold operation near Cassiar, B.C. The mine has the earmarks of becoming a major gold producer in the next few years, possibly the largest in the province. Erickson has consolidated the biggest land position of any gold mining company in

the area and recently concluded a \$3.1 million agreement with the trustee of Plaza Mining Corp. to buy that company's 150 ton-per-day Cassiar gold mill and even more important its mineral claims adjoining and adjacent to the Erickson mine.

Shortly after that deal was announced the company acquired control (94.7%) of Table Mountain Mines which also has extensive holdings in the area near Erickson. The shares (1,166,552) representing an additional 44.1% equity in Table Mountain, were acquired from United Hearne Resources in a sharp swap. Hearne ended up with 225,000 Erickson shares in the exchange. Hearne's gold operation at Cassiar is now being run by Taurus Resources.

## A real success

Equity Silver, a 70%-owned Placer Development subsidiary, is proving to be an outstanding success, despite a large cost overrun in the leach plant which is still operating below design capacity.

Even though silver prices tend to follow gold downward the industrial applications for the metal are much greater, suggesting that operation's continuing success is almost certain. Operating at approximately 5,700 tonnes per day, as of Dec. 31, 1982, Equity had 23.6 million tonnes of reserves grading 98.2 g silver (3.2 oz.) and 0.884 g gold (0.028 oz.). The mine is a world-class producer and a highly profitable one for Placer and its subsidiary. In the first half, Equity reported net earnings of \$8.3 million because of higher metal prices and lower interest charges. Equity is repaying its outstanding debt quickly and recently announced plans for a prospectus offering involving cumulative, redeemable, preferred shares. No doubt some of these funds will be used to reduce that debt further.

Earlier this year, Allen Born, Equity president, who is also chairman of Placer, predicted that precious metals would be the largest contributor to Placer's earnings this year. Augmenting those earnings will be the company's 100%-owned Golden Sunlight mine in Montana which is operating at approximately 5,000 tons per day. A major gold producer, the open pit operation should put out over 72,000 oz. gold this year based on a mine grade of 0.05 oz. gold per ton. The carefully conceived mining operation came on stream 31% under the proposed \$U73 million budget and should be a major profit centre after pay back.

In Mexico, Placer has a 34% interest in the Real de Angeles silver mine which should produce approximately 7.0 million oz. annually with associated lead, zinc and cadmium. Very definitely, Placer Development represents a major force in precious metals. Production from that sector this year should total approximately 6.5 million oz. silver and 140,000 oz. gold. This compares with silver output of 170,000 and 25,000 oz. gold in 1976.

Westmin Resources has extensive interest in the Stewart area of B.C. and earlier this year reported 1.9 million tons of reserves grading 0.1 oz. gold equivalent on property it holds under option from Tournigan Mining Explorations. Through share purchases and for completing a feasibility study by June 1, 1985, West-

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## Westmin reports record earnings progress on major expansions

Westmin Resources, which is in the midst of major expansion in both its mining and petroleum divisions, says earnings of \$10,292,000 in the second quarter to June 30 gave the company record earnings of \$21,727,000 in the first half of this year.

The latest earnings compare with \$6,587,000, and \$14,281,000, for the similar periods last year.

The company says first half cash flow rose to \$40,700,000 against \$25,300,000 in the comparable period last year.

Net per common share, after provision for preferred dividends, amounted to 17¢ in the second quarter, or a total of 39¢ for the first half, compared with 6¢ and 15¢ respectively, in 1982.

Westmin says the second quarter's per share earnings are based on 37,700,000 common shares outstanding, following the March private placement of 3,600,000 treasury shares to net the company approximately \$50,000,000.

These proceeds, along with higher earnings and lower capital expenditures have just about tripled Westmin's working capital position, raising it to \$147,800,000 as of June 30, versus a figure of \$54,400,000 at the same time last year.

Both oil and gas and mining operations contributed handsomely to the record profit picture. Oil and gas operating earnings in the first half rose to \$28,600,000 from \$17,600,000, while the mining division generated \$6,800,000 against \$4,000,000.

Commenting on its current expansion programs, Westmin says construction is under way in a \$225,000,000 project at the Myra Falls, Vancouver Island, H-W base-precious metals mine site, and contracts have been let on major com-

ponents for the threefold expansion to 3,000 tons per day scheduled for start-up in the last quarter of next year. The new mill will supplant a 1,000-ton facility treating ore from the neighboring Lynx and Myra mines.

The company adds that a 50-well drill program is also well under way in the Lindbergh heavy oil area in east-central Alberta, where it holds 75 sections of mineral title acreage, overlying an estimated 1.4 billion bbl. oil in place. Current production qualifies for New Oil Reference Prices.

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WESTMIN RESOURCES LIMITED

PERIOD ENDED JUNE 30,	THREE MONTHS		SIX MONTHS		Westmin Resources Ltd. is in the midst of major expansions in both the mining and petroleum divisions. At the Myra Falls, Vancouver Island, B.C., minesite,
	1983	1982	1983	1982	
Oil & Gas Earnings			\$28,600,000	\$17,600,000	
Mining Div. Earnings			6,800,000	4,000,000	
Net Earnings	\$10,292,000	\$6,587,000	21,727,000	14,281,000	
Earnings Per Share	17¢	6¢	39¢	15¢	
Cash Flow			\$40,700,000	\$25,300,000	
Shares Issued	34,100,000	37,700,000			
Working Capital			\$147,800,000	\$54,400,000	

construction is under way and contracts have been let on major components of the threefold expansion to 3,000 tons per day scheduled for start-up in the final quarter of 1984.

A 50-well drilling program is well under way in the Lindbergh heavy oil area where the company holds 75 sections (square miles) of mineral title acreage overlying an estimated 1.4 billion barrels of oil in place. Current production qualifies for New Oil Reference Prices. In addition, the company is into an eight-well steam stimulation program which will increase recoveries several-fold.

GCNL #153 10AUG1983

WESTMIN RESOURCES LTD.

6 MOS. TO JUNE 30,	THREE MONTHS		SIX MONTHS		RECORD FIRST HALF RESULTS REPORTED. WORKING CAPITAL EXCEEDS \$147,000,000 Westmin Resources Ltd. second quarter earnings per share are based on 37,700,000 common shares
	1983	1982	1983	1982	
Net Earnings	\$10,292,000	\$6,587,000	\$21,727,000	\$14,281,000	
Per Common Share	17¢	6¢	39¢	15¢	
Cash Flow	N.A.	N.A.	\$40,700,000	\$25,300,000	
After preferred share dividends					

outstanding following the March, 1983 private placement of 3,600,000 treasury shares which netted the company approximately \$50,000,000. Management say these shares were broadly distributed among over 40 financial institutions and investment funds almost entirely within Canada.

These proceeds, along with higher earnings and lower capital expenditures, resulted in a working capital of \$147,800,000 as of 30Jun83 versus \$54,400,000 a year earlier.

During the first half, oil and gas operating earnings rose to \$28,600,000 from \$17,600,000 while the mining division generated \$6,800,000 versus \$4,000,000.

At the Myra Falls, Vancouver Island minesite, a threefold expansion to 3,000 tons per day is in progress for start-up in fourth quarter 1984. A 50-well drilling program is well underway in the Lindbergh heavy oil area of Alberta where Westmin hold 75 sections overlying an estimated 1.4 billion barrels of oil in place. Current production qualifies for New Oil Reference Prices. In addition, an 8-well steam stimulation program now in progress, will increase recoveries several fold.

**Myra Mine** is a smaller, but higher grade, extension of Lynx, preserved where the ore zone extended into Mount Myra on the opposite side of Myra Valley. The dip length of the ore horizon diminishes towards the southeast and in Myra mine both limbs total about 1000ft. The rhyolitic host rock (sericite schist) appears compressed in the hinge of the anticline with a form varying from nearly isoclinal to asymmetric. Again, ore bodies lie on both limbs. Myra mine is mainly trackless with three adit levels and two levels off a 2080ft, 14.8% ramp. Level spacing is 150ft. Production from Myra mine began in 1972.

The **Price zone** is an offset extension of the Myra zone. It was displaced from Myra by an inclined cross-fault with a 2800ft net slip. The vertical component of this displacement is about 1000ft with the Price block up. Initial exploration development of the Price zone has been by two adits with access by road up the east side of Mount Myra from the valley floor 1300ft below.

In the Lynx, Myra and Price mines, lateral development (8x8ft) totals 180,000ft, vertical development totals 72,000ft and underground diamond drill footage totals close to 1.2-million ft with an additional quarter million feet drilled from surface. Ore thickness is typically in the range of 5 to 15ft (maximum 40ft) and most production has been by cut and fill with a small amount of blast hole and room and pillar mining. Ore definition diamond drill hole spacing is generally 50x50ft on the plane of the ore.

#### H-W

The H-W deposit was discovered in December 1979, by surface drilling, at a depth of 1400ft below the floor of Myra Valley. Faced with declining reserves in the producing mines, a decision was made at the end of January 1980 to proceed with a new shaft.

Surface drilling of the deposit continued until mid 1981 and was then replaced by underground drilling from an exploration heading driven from the bottom level of Myra Mine as the deposit was followed under Mount Myra. Both the surface and underground holes ranged to depths of 2000ft or more in this initial exploration phase. Hole spacing began at about 250x100ft and was soon widened to 500x150 to 350ft. This first phase exploration was completed by the end of 1982. By mid 1982 a level had been driven from the new shaft to gain early access to ore for bulk sampling and to provide drill position for a second phase of drilling. This second phase drilling filled in a portion of the deposit at 100x100ft spacing to provide sufficient data for current mine planning of an initial production area.

The ores of the H-W mine occur principally within a single, large, thick

body of very pyrite-rich, massive sulphide (figures 2 & 3).

The ore grade portion averages 70 weight percent pyrite and the remaining massive sulphide is base metal-poor, fine grained pyrite. In contrast the Lynx-Myra-Price ores average about 15 weight percent pyrite. The H-W massive sulphide body ranges in thickness from over 100ft in an axial zone to thin tapering margins. The average massive sulphide thickness is in the order of 60ft. The orebody exhibits strong lateral zoning from a very massive, pyrite core with high copper: zinc ratios, to zinc and barite-rich margins with low copper: zinc

ratios. The marginal phase contains significant silver and lead in contrast to the core zone. Gold is fairly uniformly distributed. The relatively smaller tonnage, marginal ore phase represents higher grade ore.

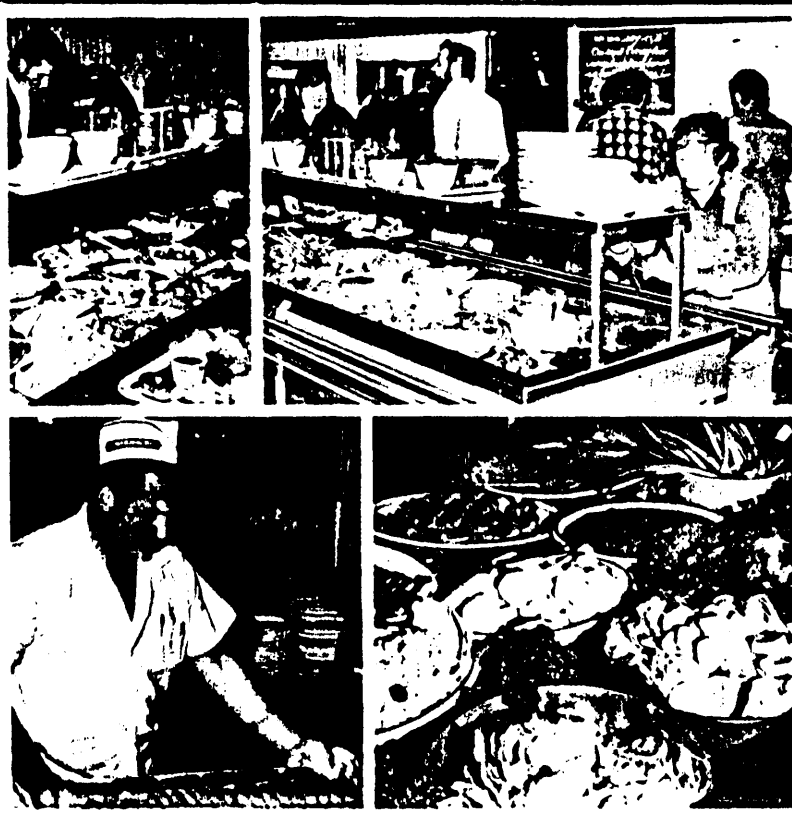
Mechanized, trackless mining utilizing ramps between levels is planned for the H-W mine. Multiple stoping methods are anticipated.

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W/M

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represented by sericitization, silicification and pyritization.

The major minerals comprising ore are pyrite, sphalerite, chalcopyrite, galena and barite which vary widely in their proportions. Minor minerals include tennantite, bornite and pyrrhotite. Ore textures are primarily fine grained and massive or banded.

Occurrences of rhyolite, sulphides and altered rocks are distributed vertically and laterally within a stratigraphic zone approximately 1200 to 1500 feet thick.

This mine sequence lies within the Myra Formation of the Paleozoic Sicker Group (Muller, 1980). The mine sequence is composed of massive

volcanic and coarse to fine volcanoclastic rocks which include basalt, andesite, dacite and rhyolite as well as subordinate sedimentary rocks which include chert, carbonaceous argillite, sulphides and barite. Chert includes black, green, gray and red varieties. The mine sequence is internally bedded and is predominantly mafic and volcanoclastic. Lithologic units are laterally discontinuous with a distinct northwest trend parallel to the trend of ore zones.

The H-W orebody and associated ore lenses occur at the base of, and within, the H-W rhyolite unit which lies at the bottom of the mine sequence. The Lynx, Myra and Price ore zones are correlated

as a single, elongate zone of rhyolite, ore and altered rocks which lies near the middle of the mine sequence. The Lynx-Myra-Price ore zones have been documented over a strike length of 19,000ft along the northwest trend. The H-W ore zone has been traced over 4500ft along a parallel trend located 2000ft northeast. In both cases, the plunge of ore lenses and broader zones is near horizontal.

The mine sequence has been folded and metamorphosed in the lower greenschist facies. Deformational rock fabrics are variably developed with the widespread occurrence of schistose and lineated rocks. Schistosity is most intense in sericitic rhyolites and altered rocks. Schistosity strikes northwest and dips steeply northeast. Lineations, as well as fold hinges, trend northwest with flat to very shallow plunge.

Post-metamorphic faults of many attitudes offset the ore zones. Zones of gouge and broken ground are common along major faults and ore contacts.

#### LYNX-MYRA-PRICE

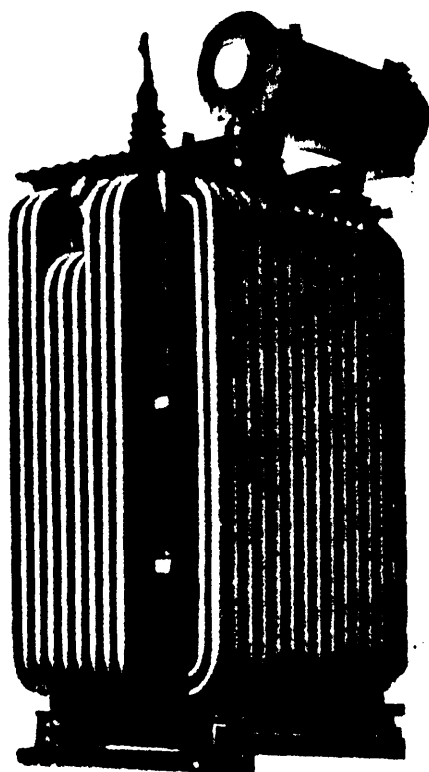
The rhyolitic ore horizon in Lynx, Myra and Price mines appears to be folded over a major anticline with ore lenses lying on both limbs. The hinge of this fold trends northwest with a flat plunge.

In Lynx mine the southwest limb dips generally 50 degrees southwest to 70 degrees northeast (overturned) but averages near vertical over an elevation range of more than 1500 feet. The north limb dips, on average, about 40 degrees northeast and has been traced over more than 1500 feet of dip length. Smaller scale folds and faults considerably complicate ore geometry on a stope scale.

The distribution of major ore zones in Lynx mine is illustrated in figure 1. The southwall zone and S zone lie in the steeply dipping, southwest limb of the anticline. G-zone orebodies lie in the moderately dipping northeast limb. The west G-zone was discovered in 1982 as the result of a major drifting and drilling program designed to test the northeast limb 3000ft northwest of the previously known G-zone. This new ore lens is currently known to extend over 1000ft of strike length and is open on both ends. It appears similar to currently mined G-zone orebodies.

The basic geometry of Lynx mine has led to extensive lateral and vertical development. Mining on the property began with an open pit at the southeast end of Lynx, where the ore structure was eroded through by Myra Valley producing the geographic separation of Lynx and Myra Mines. In total, 1.7-million tons of ore were taken from the Lynx pit. Underground development is by five adit levels and seven levels off an internal shaft which is 1125ft deep. Levels are tracked and spaced approximately 150 feet apart.

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# COMPOSITE LONG SECTION 127 + 00 N & 128 + 00 N

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0 100 200 300 400  
scale in feet

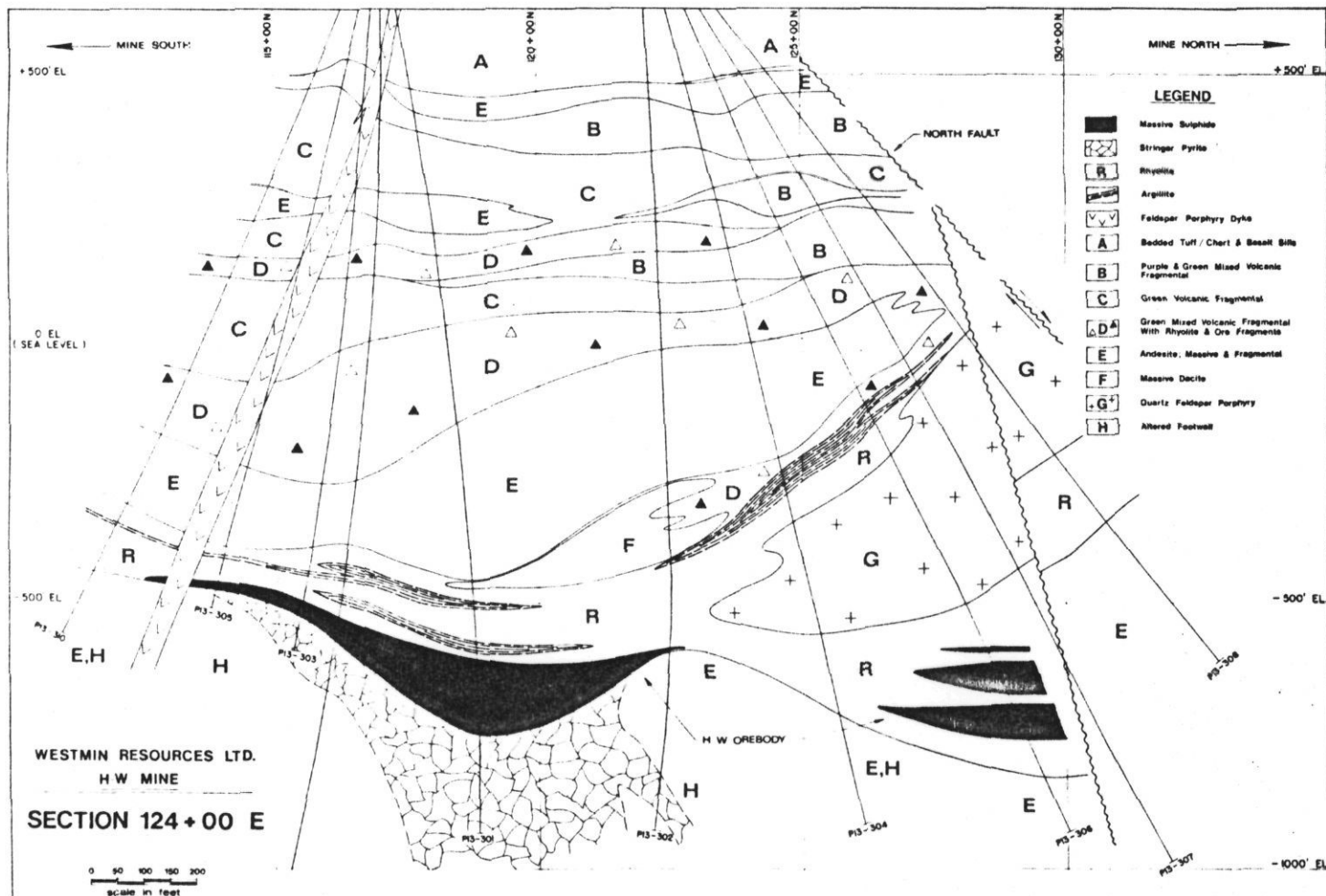
## LEGEND

- Massive Sulphide
- Stringer Pyrite
- Rhyolite
- Argillite
- Green Mixed Volcanic Fragmental With Rhyolite & Ore Fragments
- Andesite, Massive & Fragmental
- Massive Dacite
- Quartz Feldspar Porphyry
- Altered Footwall

# LONG SECTION 120+00N

MINE WEST

MINE EAST



65



## Ore deposits at the Myra Falls minesite

Westmin Resources Ltd is currently conducting mining and milling operations at their Myra Falls mine site located near the south end of Buttle Lake in the center of Vancouver Island. A 56 mile paved highway provides access from Campbell River.

The Myra Falls deposits occur as many individual ore bodies grouped into several major zones (figure 1). These ore zones are currently being mined underground from two mines — Lynx and Myra — at a rate of 930 short tons/day. These two mines have provided all production since start-up at the end of 1966. Production to the end of 1982 totalled 5,204,300 short tons which averaged 0.06 oz Au/ton, 3.32oz Ag/ton, 1.5% Cu, 1.1% Pb, 7.6% Zn.

The Price zone, discovered in 1979, represents a modest but significant

extension of reserves for the existing mining operations and has been subject to underground development and definition drilling. Proven mining reserves in Lynx, Myra and Price at the end of 1982 totalled 1,021,000 short tons averaging 0.06 oz Au/ton, 2.6oz Ag/ton, 1.0% Cu, 0.9% Pb, 7.4% Zn.

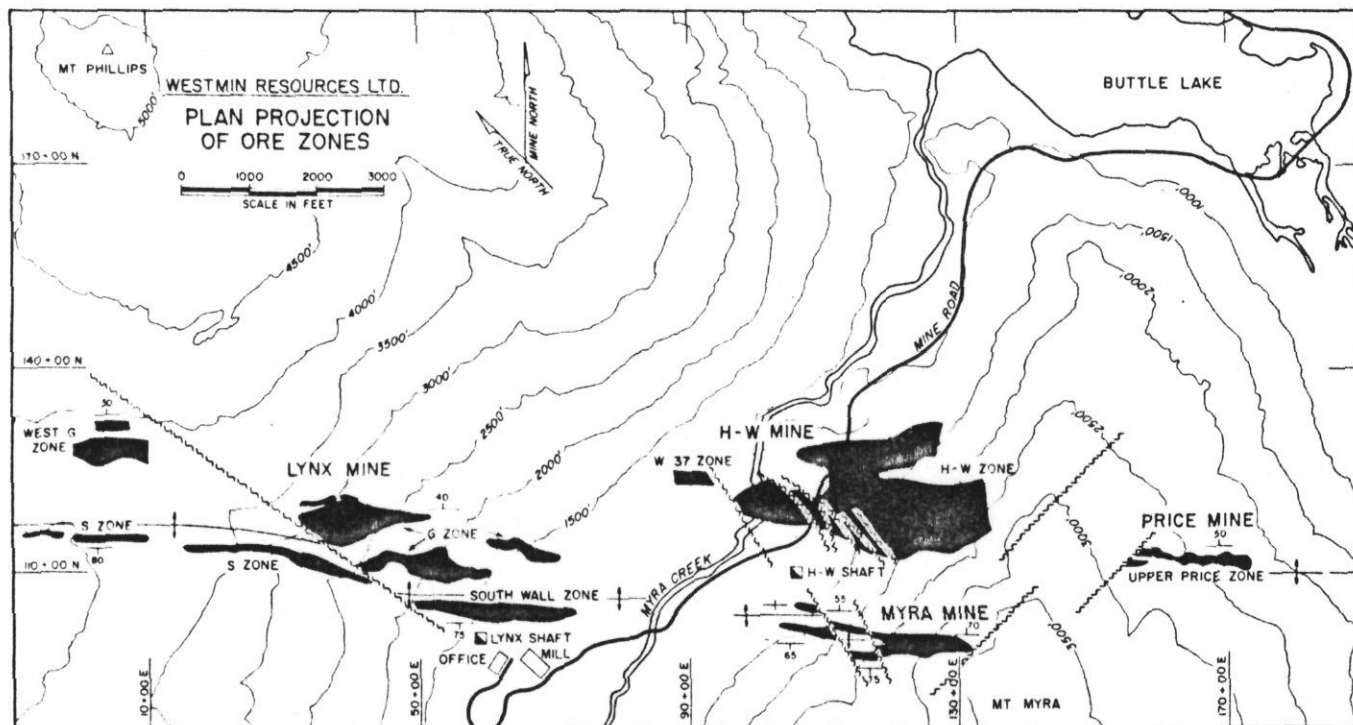
The H-W Mine represents a major new ore zone, which will substantially transform the mining operations at Myra Falls. Geological reserves in the H-W Mine total 15,232,000 short tons, probable plus possible, with a combined average grade of 0.07oz Au/ton, 1.1oz Ag/ton, 2.2% Cu, 0.3% Pb, 5.3% Zn. In conjunction with development of the H-W Mine, the company is engaged in expanding production to 3000 short tons/day. This expansion will include a new 2350ft shaft (nearly completed) as

well as a new mill, mine offices, shop, surface tailings disposal system and hydroelectric power plant. H-W was also discovered in 1979.

### GENERAL GEOLOGY

The Myra Falls ores are polymetallic, massive sulphide deposits associated with felsic volcanic rocks. The ore formed as sedimentary lenses on the sea floor, precipitated from metal bearing hot springs contemporaneous with the felsic volcanic host rocks. Hot spring activity produced widespread hydrothermal alteration of wallrocks, particularly below the ore lenses. Major centres of hydrothermal discharge are marked by zones of stringer and disseminated pyrite. For the most part, these pyrite stringer zones are not ore bearing. Hydrothermal alteration appears to be primarily

Myra Falls Mine orebodies





Westmin's bus fleet waits in line. Most of the employees live in Campbell River and are bussed to and from the minesite

recently been implicated in the contamination of Myra Creek. Down-pit run-off and groundwaters passing through and under the waste dumps transported these leachates to Myra Creek. In July and August of 1982 a surface and subsurface water collection system was installed between the waste rock dumps and Myra Creek to intercept these flows. This system of under-drainage will also service the tailings disposal system.

Being located inside Strathcona provincial park, Westmin has paid particular attention to its environmental and reclamation programs. Included in the Stage II program is a commitment that requires the company to provide

\$500,000 to fisheries enhancement projects and \$500,000 for improving Strathcona park access and recreational facilities.

#### SHIPPING FACILITIES

Existing ship and barge loading facilities at Tyee Spit in Campbell River will be upgraded to handle 35,000 DWT ships. (Product is shipped in 20,000 DWT ships at present.)

Storage capacity will be tripled to 38,000 tons and a new wharf, located a further 50km offshore from the existing wharf, as well as a new shiploader will be required.

Westmin's products are sold world-wide. At present, zinc concentrate is sent

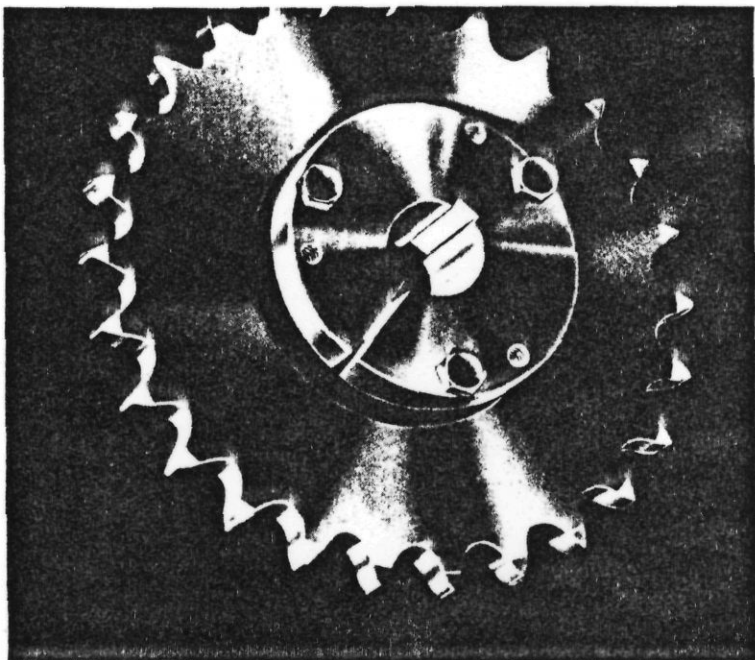
to Cominco's smelter at Trail, while lead concentrates go to Asarco in Montana and copper concentrates are shipped to Japan.

#### NEW JOBS

Some 110 new jobs will be created by the expansion, adding to the 360 currently employed at the mine. Mr Flumerfelt estimates that during peak construction, some 540 workers will be on the site. Most of Westmin's employees live in Campbell River. The 227 underground workers are transported daily to and from the mine in four company buses. The miners work two 8 hour shifts/day. The 31 people working in the mill live on the site four days on/four days off; the mill operates 24 hours/day. It is estimated that 70% of the new jobs will be filled locally. Some 200 indirect jobs will also be created by the expansion.

W/M

Project development for Westmin Resources H-W Mine was carried out under W Peter Stokes PEng. There was a project management group in Vancouver, and underground and surface mining teams at the mine-site. Detailed engineering was provided by various consultants, and most of the surface work was done by Wright Engineers Ltd.



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filters rather the present vacuum filter drying system will be used, Charlie Cuzzocrea, general mill foreman explains.

The existing mill will operate throughout the construction period, processing ore from the Lynx and Myra mines. The mill employs three-stage crushing, two-stage grinding and differential flotation to produce separate copper, lead and zinc concentrates. Payable values of silver and gold are contained in all three concentrates, and payable cadmium is contained in the zinc concentrate. In 1982 production amounted to 20,000oz of gold, 959,000oz silver, 5.3-million lb of copper, 4.8-million lb of lead, 33.5-million lb zinc and 35,000lb cadmium.

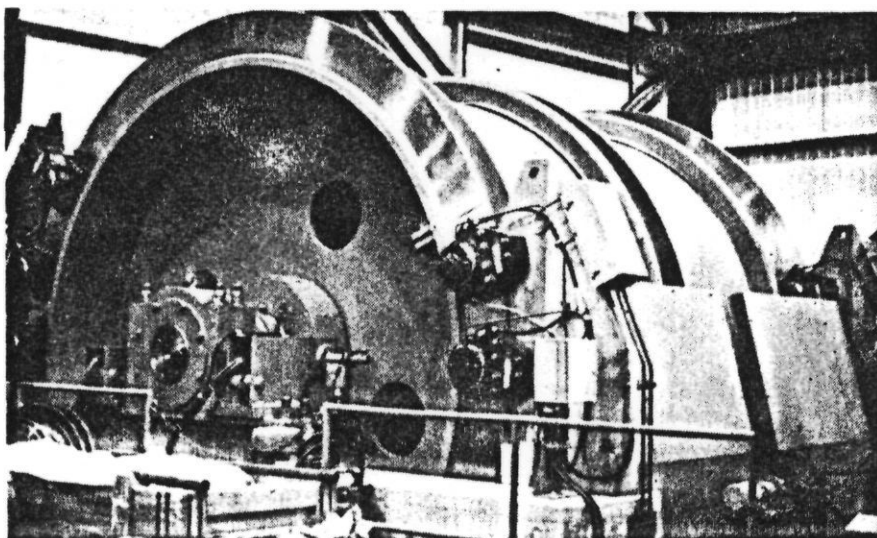
Once the new concentrator is on-stream, the old one will probably be pulled down, leaving only the crusher plant standing. Ore from the H-W will be crushed underground, while Lynx and Myra ores will continue to be transported to the surface crusher before going to the mill, Mr Cuzzocrea reports.

Water for existing plant operations is obtained from underground water, internal recycle, Watertank Creek and the hydroelectric power plant tail race. Water for the new mill will come from these same sources and, if possible, by recycling supernatant from the water treatment systems.

Power is currently supplied from a hydroelectric plant on Tennent Creek, supplemented by eight diesel electric generating units on-site. The existing operation needs an average 2.17MW and peak loads reach 4.8MW. The new facilities will require an additional 10MW of power and Westmin plans building another hydro plant on Thelwood Creek, which will provide approximately 3000kWh. A 5-mile road will be built into the Thelwood Valley.

#### TAILINGS SYSTEM

Another part of Westmin's expansion program will be construction of an on-land tailings disposal system to eliminate the discharge of tailings into

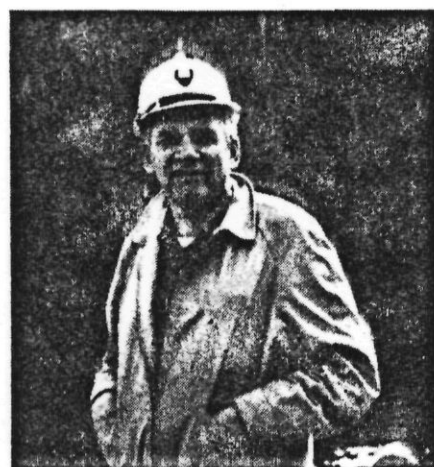


Main hoist for the new H-W shaft

Buttle Lake. Tailings from the new mill will originate as zinc circuit tails and will be cycloned in a sizing plant for recovery of mine backfill.

The new on-land tailings storage facility will employ a method known as the sub-aerial technique, which is different from the conventional method of sub-aqueous deposition, in which tailings are deposited under water in a tailings pond.

In the sub-aerial technique, the tailings slurry is discharged through spray bars onto the high end of a gently sloping beach; the slurry then flows down the beach, forming a uniform layer typically about 100mm thick. Once a section of beach has been covered, the discharge is moved to another section, and the newly deposited layer is left to settle, drain, bleed and air dry, before being covered with a subsequent layer. Partial removal of the liquid contained in the tailings through these processes causes negative or suction pore pressures to develop in the tailings mass, which result in the retention of the remaining moisture in the material, thus preventing any seepage.

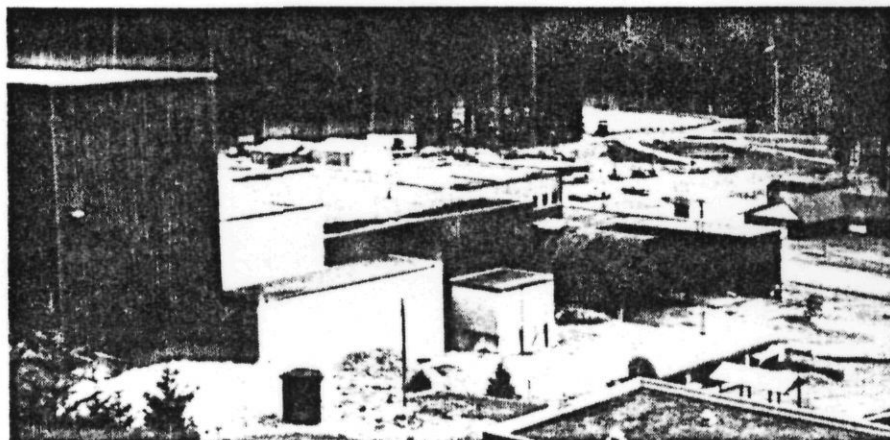


General Manager Gordon Flumerfelt

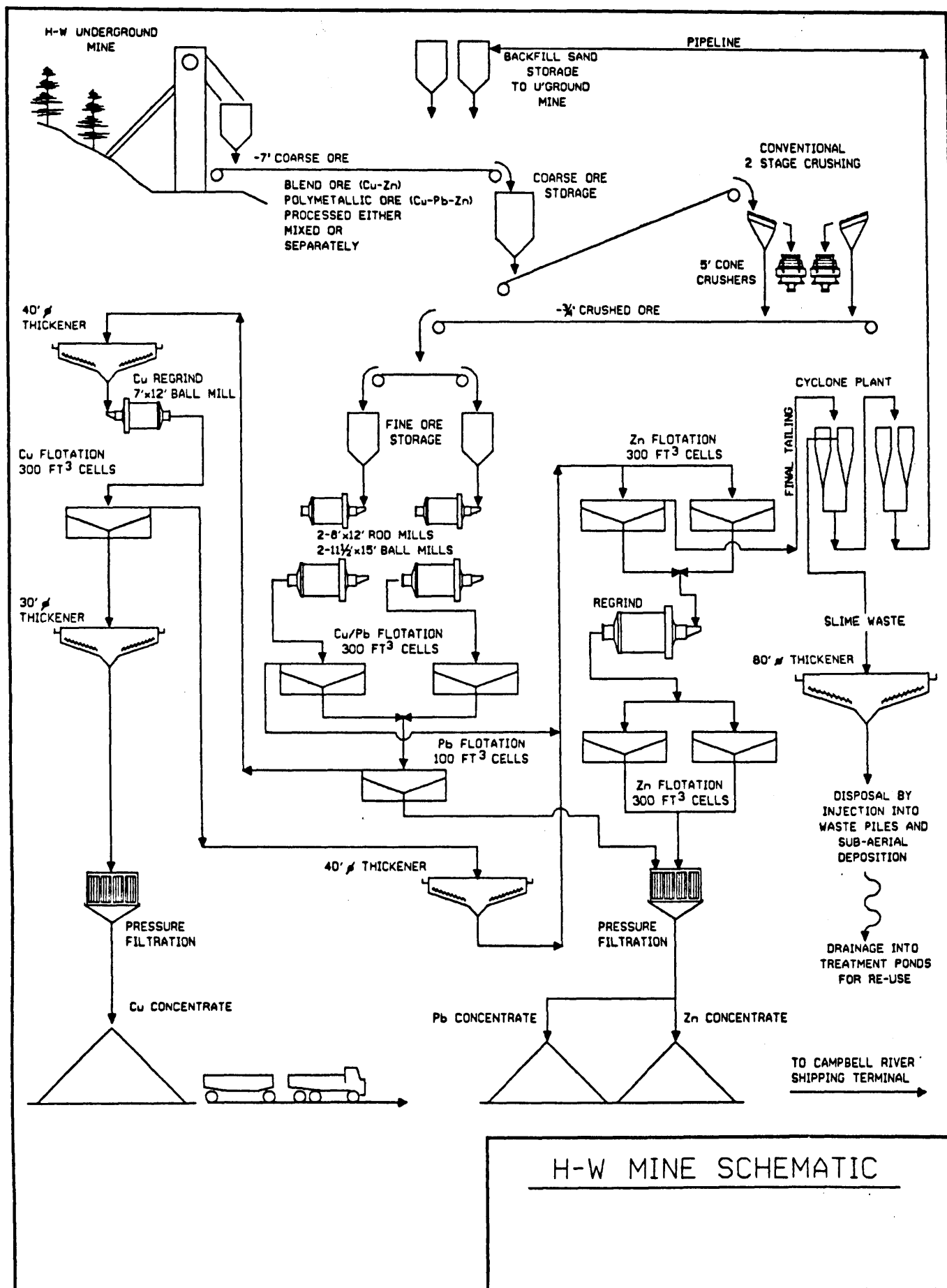
A comprehensive water management plan has also been devised to ensure that all surface and subsurface waters affected by mining operations will be treated to within acceptable limits before release into the environment.

Leachate from the former Lynx open pit high pyrite waste rock dumps has

Westmin's new mill will be built adjacent to the existing one. Crusher plant is to the left









developed as the main zone fringe areas are mined out.

A tracked haulage system on 24 Level will gather the ore from stoping operations and move it to a coarse ore storage bin ahead of the primary crusher. The crushed ore will be delivered via a conveyor on 26 Level to skip loading facilities at the shaft, and then hoisted automatically to surface.

(The hoist was purchased from Asea Ltd. The compressor room houses three 2200cfm Atlas Copco ER8 compressors.)

Waste removal will be by truck, while the ore will be conveyed to the new mill via a 1066mm wide enclosed conveyor. The overhead conveyor system will be 1.4km long.

H-W in-place reserves at 1 Jan '83 stood at 15,232,000 tons grading 0.07 oz/ton gold, 1.1 oz/ton silver, 2.2% copper, 0.3% lead and 5.3% zinc. And it is expected that this in-place reserve figure will go even higher as the deposit is still open in three directions.

#### EXISTING MINES

An estimated 1,021,400 tons grading 0.06 oz/ton gold, 2.6 oz/ton silver, 1% copper, 0.9% lead and 7.4% zinc were reported for the Lynx, Myra and Price mines at the same date, although this figure has been increased since then by a recent discovery of an extension to the Lynx mine orebody.

Although the size and grade of this new orebody has not yet been determined, Mr Flumerfelt admits it 'is pretty exciting'.

'The new zone appears to have been moved 365-460m west of the Lynx orebody by geological faulting', he explains.

'Drilling has now been aimed at six sections over a strike length of 240-275m and Lynx ore grade material has been intersected in each section. The deposit is open to the east and west and drifting to the east is underway to allow for further drilling', he reports.

The Lynx discovery means plans to bring the Price mine on-stream may be put on the backburner. The Price is

mineable, but has not yet been developed to production. And, with an extensive drilling and drifting program planned for the Lynx zone extension this year, future development work for the Price mine has been deferred for 1983.

#### NEW CONCENTRATOR

Following extensive laboratory and pilot testing of H-W blend and polymetallic ores, a two-product copper-zinc concentrator, capable of also producing lead concentrate (as the mill feed lead grade permits), was selected as the most flexible design option with regard to both overall mine production rate and the proportions of blend and polymetallic ore mined and milled.

The 2700t/d concentrator is designed in two parallel 1350t/d lines, capable of processing blend and polymetallic or any combination of blend and polymetallic ores from the H-W and Myra-Lynx mines.

H-W ore, crushed underground, is delivered to the secondary crushing plant via a 1.4-kilometre long overland conveyor to a 3600-tonne coarse ore bin, and then further reduced by secondary and tertiary crushing. The product is conveyed to two 3600-tonne silos for fine ore storage. Provision is made to convey Myra-Lynx ore, crushed in the existing crushing plant, directly to these fine ore storage bins. The fine ore is further reduced in size in two parallel rod mill-ball mill grinding circuits. Each grinding circuit is capable of processing blend, polymetallic or any combination of these ores.

The classified ground ore is processed initially in two parallel flotation circuits. Each circuit is capable of producing a copper, lead and zinc concentrate as ore grade demands. The rougher concentrates from each of the parallel circuits are combined for cleaning and production of final concentrates. Concentrate dewatering to 6% moisture is by pressure filtration, eliminating the need for vacuum disc filters and oil- or gas-fired rotary dryers.

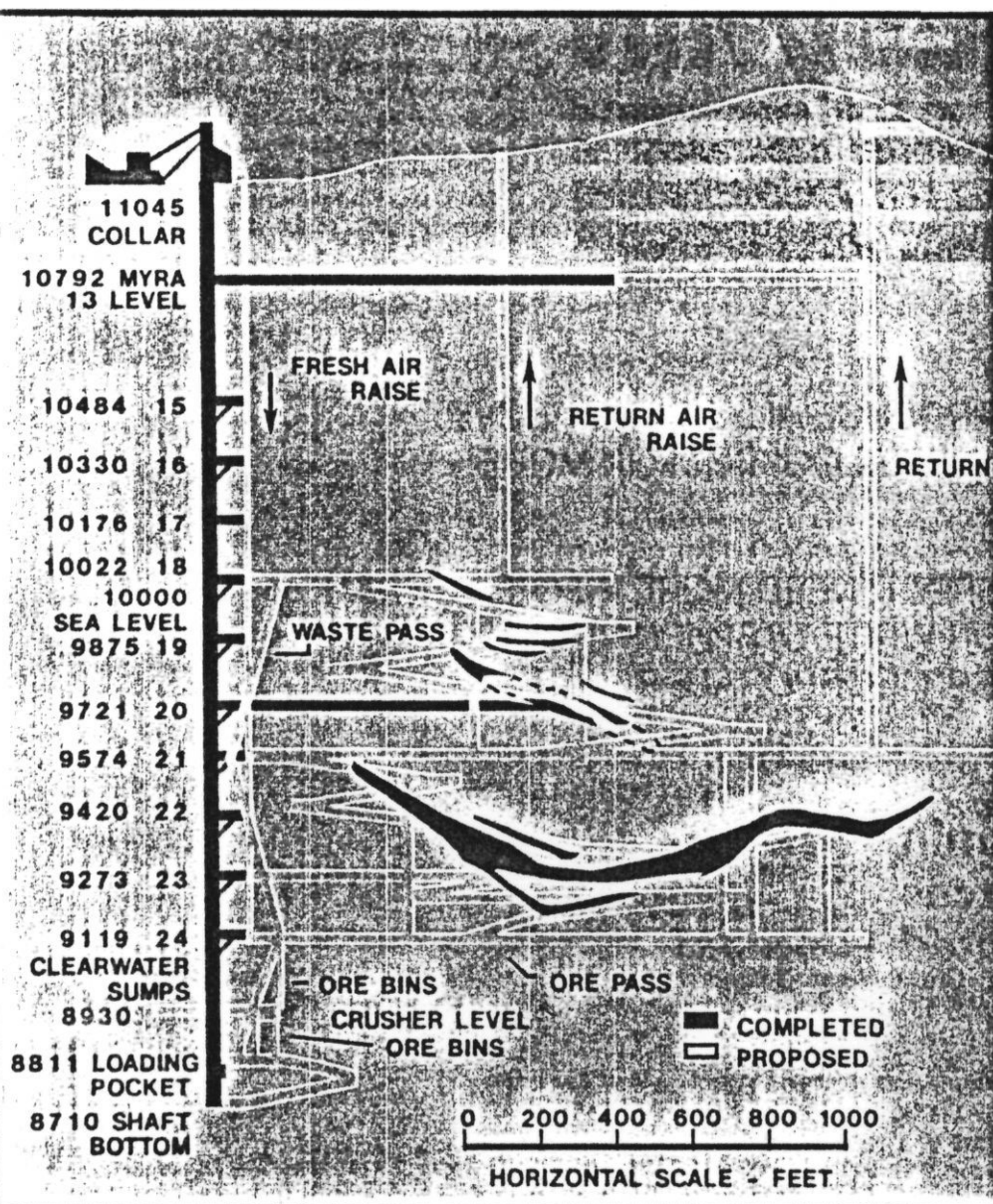
Sufficient concentrate storage capacity is provided to accommodate 3 days production. The on-site storage is intended solely to provide surge capacity in the transportation system.

A separate tailings cyclone plant and cyclone overflow thickener are located to the east of the existing Myra-Lynx concentrator. This plant receives the tailings via a gravity pipeline and produces deslimed sand for use as mine backfill. The thickened cyclone overflow is pumped to the tailings disposal area for impoundment.

Major changes include greater automation in the mill design. A process control computer will be installed and a new assay office is currently under construction.

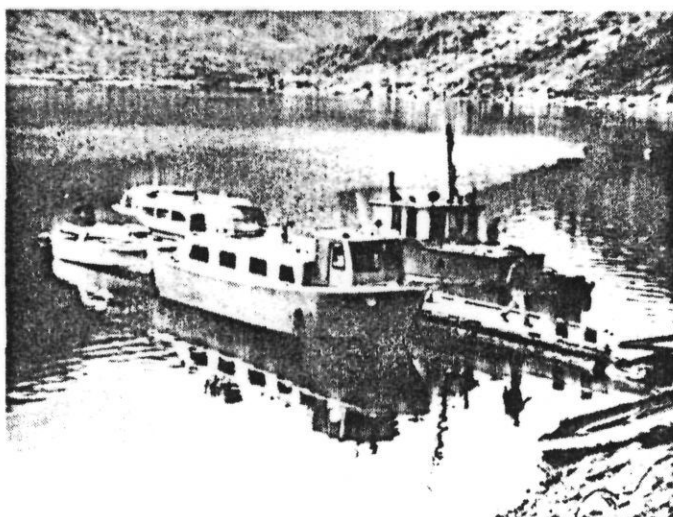
The new circuit will feature the use of thickeners before filtering and pressure

H-W Mine Cross-section





*Trestle under construction in 1966 to take ore from Lynx mine portal to the mill, also under construction*



*Western Mines 'fleet' included tug and passenger boats to bring in men and supplies before the road was built*

Since there was no road to the property, everything had to be brought in on log rafts and a small fleet of company boats on Butte Lake.

However, there were two major offsetting plusses. One of the first big shipments brought in was a portable sawmill. It was used to make lumber for mill construction from timber on the property. Some trees ranged to six feet in diameter.

And to this day, the company benefits from savings in power costs from the building of its own hydro-electric generating station at Tennant Lake, only a mile west of the Lynx mine site. Currently diesels supplement power requirements in periods of low run-off but hydro generating facilities will be expanded to provide power for the current expansion at a very attractive rate.

Western Mines got a shot in the arm with the decision to open pit some of the Lynx ore, even though it meant rearranging plans for surface facilities.

During the first year of production, 82% of the ore milled came from the pit and this increased to almost 97% in 1968. From 1969 onwards, the pit was gradually phased out in favor of underground ore. By the end of 1974, the pit had yielded over 1.6-million tons of ore, a far cry from original estimated reserves of 300,000-400,000 tons.

Early in 1970, a serious drilling program was started on the Myra property and almost immediately, they ran into a rich ore deposition. A 9ft x 9ft decline for trackless mining and haulage equipment was driven to its objective of 2200ft to the vicinity of the high grade drill intersections. Haulage from the Myra continues with low-profile trucks to surface stockpiles adjacent to the portal, from where ore is loaded and conveyed by dump truck to the concentrator.

Once steady production was achieved, a road was constructed linking Campbell River to the mine site. Thirty-one miles of this road is Highway 28, while the remaining 25 miles runs along the east shore of Butte Lake to the mine.

Production settled down to the rated capacity of 1,000 tons/day during the first decade of operations but by the late 1970's management became somewhat anxious about future mill feed, since reserves were on a slow but steady downtrend. This is when a renewed exploration program was launched, which resulted in the discovery of the H-W orebody. A decision to sink the shaft was made in January, 1980 and sinking actually began in February 1981. The rest, as they say, is history. A couple of months ago, the Board of Directors gave the go-ahead for construction of a new mill and auxiliary facilities which will triple capacity by the end of 1984.

#### **CORPORATE DEVELOPMENTS**

As the mine developed from humble beginnings, so did the corporation.

Western Mines was incorporated with an authorized capital of 2.5-million \$1 par shares of which 1,720,006 were issued for the Ainsworth property. In 1957, these shares were consolidated into \$2 shares and the authorized capital was increased a couple of times to provide funds for exploration and Lynx development.

Senior financing to bring the mine into production was \$11-million, consisting of \$7-million in 6% income debentures (with a bonus of 140,000 shares) and a \$4-million bank loan. Cost overruns led to the issuance of another 250,000 shares in 1966 and there were problems in meeting repayment schedules. However, cash flow improved considerably in 1968 and the bank loan was paid off by April, 1969 and the

income debentures were redeemed in full by July, 1970.

The next major corporate development occurred in late 1975 when Brascan Resources acquired 2,095,671 shares of Western Mines and subsequently increased its holdings to 50.3%.

Brascan Resources (formerly Mikas Oil Limited) was acquired by Brascan Limited in 1970 to administer its natural resource holdings. In 1972, Brascan Resources acquired Western Minerals Limited, (no relation to Western Mines) which contributed the base for the oil and gas assets.

In June, 1980, Western Mines acquired all the outstanding shares of Brascan Resources from Great Lakes Power Corp, both units of Brascan Limited of Toronto. The company issued one million \$100 par value Class A preferred shares and 14,135,859 common shares to Great Lakes Power. As a result, Western Mines had 16,824,704 common shares outstanding, of which 84% were held by Brascan Limited through Great Lakes Power. Brascan Resources was liquidated with Western Mines remaining the surviving company.

At a special general meeting of shareholders in Vancouver on March 26, 1981, the corporate name was officially changed from Western Mines to Westmin Resources Limited. In addition, the outstanding shares were subdivided on a two-for-one basis. There were 33,822,288 common shares outstanding as of the 1982 year end. Another 3.6-million common shares were issued by way of private placement at \$14 per share in March 1983.

In April, 1981, Westmin issued \$100,000,000 of Class B Preferred shares consisting of 4,000,000 shares convertible into common shares at \$14.749 per common share until May 1, 1988.

WM





## WESTMIN RESOURCES: PROFILE OF PROGRESS

### Westmin started as just another penny stock...

92F/12E  
(092F 071,072)

Although Westmin Resources' predecessor, Western Mines Limited was incorporated in 1951, the company's history as a producer goes back only as far as 1967, Canada's Centennial year.

However, like many other mining areas in Canada, the showings on which the present operations are based were known as far back as 1917, when Strathcona National Park was opened for prospecting.

The claims on the Lynx and Price showings were held by Cross and Dubois of Victoria, while what was known as the Paw claims, were held by Paramount Mining Co of Toronto. The latter company did some trenching, drove an 80-ft adit and put down 10 diamond drill holes totalling 2169 ft between 1919 and 1925.

Probably due to remoteness and depressed metal prices, little subsequent work was done on the properties, even

after the bullish assessment of Dr H C Gunning in a report to the Geological Survey of the Canada Department of Mines in 1930. He referred to 'extensive copper, zinc and lead mineralization' in a number of zones extending about three miles and over widths 'up to at least 25 ft' containing mineralization 'of probable milling grade ...'

Between 1946 and 1960 the properties were examined by various engineers and geologists. In 1952, the ground was optioned to Granby Consolidated Mining, Smelting and Power Co. After drilling only four holes for a total of 1925ft they concluded that the mineralization was not of particularly high grade.

In 1959, the claims were acquired and consolidated by the Reynolds Syndicate, a group of men destined to become quite prominent in Canadian mining. Members included H H Huestis, P M

Reynolds, J A and W H McLellan. Jack McLellan is still a very active director of Westmin Resources.

Western Mines came on the scene in 1961 after negotiating an option-purchase agreement with the Reynolds Syndicate. The payment involved 250,000 shares of Western Mines and \$166,500 cash.

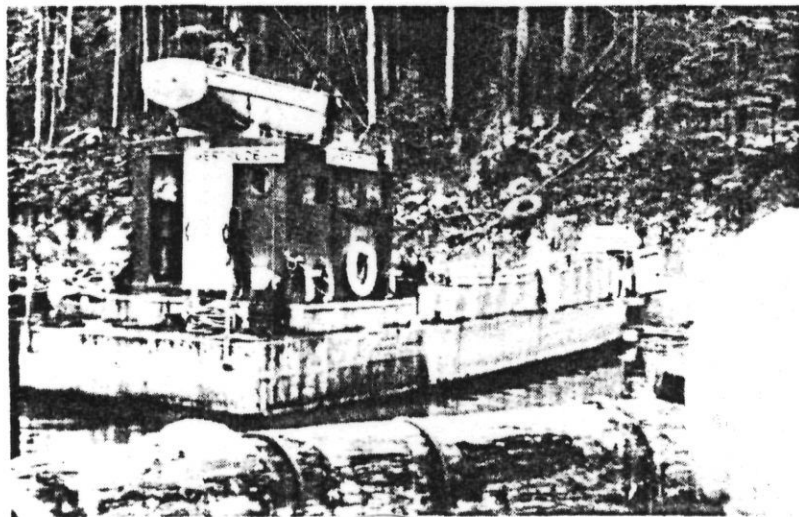
During the previous decade Western had been struggling to find and develop a viable property. The company was originally incorporated to acquire the Ainsworth lead/zinc mine on the western shores of Kootenay Lake, some 35 miles north of Nelson, BC. However, the property ceased production in 1953 due to depressed prices for the metals produced.

However, once the company and the new property were brought together, the tempo of exploration quickened dramatically. Emphasis was placed on the Lynx group where excellent surface showings were uncovered.

A shaft was sunk and by mid-1964, ore zones had been defined and opened up on five levels. Underground work and extensive diamond drilling indicated 810,300 tons of assured ore and 689,999 tons of possible ore at the Lynx, plus a total of 113,300 tons assured and possible at the Paramount (now the Myra). As is the case today, the zones were open in several directions and it was assumed that substantial additions to reserves could be reasonably expected when mining operations proceeded towards these locations.

It was decided to proceed with production, with 69 weeks allowed from go-ahead to the production of first concentrates. However, extremely heavy snowfall during the winter, a carpenters strike in BC and slow delivery of component parts pushed first production into early 1967.

The Gertrude H landing craft at the Myra dock on Buttle Lake in 1963, before road connection to Campbell River



# Westmin prospers despite economy

VANCOUVER — Westmin Resources, which began "staying the course" well before the recession started, not only survived the economic crisis but it actually prospered. With an economic game plan based "on plain common sense" this diversified mining, oil and gas company posted a solid profit of \$39.9 million during the past difficult year — a 21% rise over the previous year.

Addressing the annual meeting, A. W. Farmilo, chairman, told shareholders the company's objectives always remained flexible from year to year and they were "tailored to our ability to be self-financing." As a result Westmin avoided debt and the high cost of servicing borrowed money when interest rates climbed.

Another important element in the game plan included a concentration on development projects offering quick returns — especially heavy oil while avoiding extremely risky exploration and development expenditures. Not part of this risk category, of course, is the expansion program at its Myra Falls mine which is expected to generate cash flow in 1985, he pointed out.

In the petroleum division, oil production was up approximately 25% to 2,633 bbl. per day and higher production rates are predicted for 1983.

Most of the increase was attributable to the Lindbergh freehold acreage in east-central Alberta which qualified for New Oil Reference Prices. This particular project was one of the most important highlighted by Paul M. Marshall, president and chief executive officer, in his keynote address.

Westmin's first steam stimulation project in the Lindbergh/Hazeldine/Vermilion heavy oil area was very successful and production appears to be several times the primary production rate, Westmin claims.

Six or seven additional wells will be stimulated in 1983 and two plants, one for oil cleaning, the other for steam generation, will be constructed during the year. Westmin will also participate in the proposed heavy oil pipeline from the Lindbergh area to Lloydminster. Thirty-two additional wells are planned for the heavy oil belt in 1983.

A large amount of royalty income was derived from coal and industrial minerals — some \$13.7 million in 1982 — although \$10 million was a non-recurring advance. Westmin recently leased about 120 million tonnes of coal in the Highvale area

near Wabamun, Alta., to a major utility. These coal royalties are expected to exceed \$3 million this year.

The company received its stage two report from the B.C. government for its H-W mine at Myra Falls and production from the new mine should be under way by the end of 1984. Additional shaft sinking is scheduled this quarter and the H-W shaft will be deepened to 2,350 ft. A recent discovery in the Lynx mine is expected to take some of the pressure off the H-W development which Mr. Marshall feels will be timed with the economic recovery.

Responding to a question from a shareholder, Mr. Farmilo explained that the acquisition of Noranda shares held by Placer Development was not under consideration. He predicted the company would probably increase its interest in Lacana Mining (25%) eventually. Lacana has substantial minority interests in two Mexican precious metals mining complexes and a 26.3% interest in the Pinson gold property in Nevada.

## GENL #101 26 MAY 1983 WESTMIN RESOURCES LIMITED

### THREE MONTHS ENDED 31 MARCH

	1983	1982
Oil/Gas Earnings	\$ 17,168,000	\$10,027,000
Mining Earnings	3,666,000	1,862,000
Equity in Lacana Profit(Loss)	(191,000)	311,000
Investment Income	2,031,000	1,658,000
Mineral Exploration Expense	947,000	989,000
General, Admin. Expense	1,210,000	1,071,000
Income & Resource Taxes	9,082,000	4,104,000
Net Earnings	11,435,000	7,694,000
Per Common Share	22¢	9¢
Common Shares Issued	37,600,012	33,698,168
Cash Flow	23,118,000	13,883,000
Working Capital	133,915,000	77,394,000

### PROFIT ROSE SHARPLY

In the first quarter, oil and gas operations continued to be the major contributor to overall earnings of Westmin Resources Ltd., with revenues from these areas up over 70%. This was chiefly due to greater oil and gas production and higher prices for oil, say chairman A.W. Farmilo and president Paul M. Marshall in interim report. Production of crude oil and natural gas liquids averaged 3,733 barrels per day

compared with 2,243 in first quarter 1982. Much of this is a direct result of the 1982 special \$30,000,000 program to develop heavy 'new' oil production and to add gas production and gathering facilities. Production from the Lindbergh heavy oil area rose to an average of 119 BOPD from 336 in the first quarter of 1982. Plans call for drilling 30 more wells and building an oil cleaning plant there this year. By 31Mar83, 11 of the 16 new gas plants announced under the early 1982 special program come on stream. Westmin's share of their capacity is about 26,000,000 cu.ft.p/day.

Higher precious metal prices enabled the Myra Falls mines near Campbell River, B.C., to increase first quarter operating earnings this year. Operating earnings from coal rose during the quarter as a result of increased royalty income from Westmin's coal leases.

Approval-in-principle by the B.C. government for development of the H-W base and precious metal mine beside the existing Lynx mine at Myra Falls was received on 11Mar83. In late March, directors approved the expenditure of some \$225,000,000 (in current dollars and including interest capitalized during construction) to bring that mine to production. This will involve construction of a new 3,000 tons per day mill to supplant the 1,000 tpd facility currently treating ore from the neighboring Lynx and Myra mines. The new facility is scheduled to come on stream in late 1984, which should coincide with the next major cycle in metal prices, say the chairman and president.

Exploratory drilling the Lynx West area has extended the ore zone a total length of 900 feet. Drilling on the Detour gold properties in NE Ontario and the Great Slave lead/zinc holdings near Pine Point, NWT brought encouraging results. The option agreement with British Silbak Premier was finalized and plans for this summer's exploration are being prepared for that ground and the neighboring Big Missouri base/precious metals property of Toumigan Mining Exploration Ltd. near Stewart, NW B.C.

92F/12E  
(092F 071, 072)

92F/12E (092F 071, 072)

104B/1E (104B 046)

57



MINER APR 1983

## Westmin to go ahead with \$225m. outlay for H-W mine project

Westmin Resources plans to spend approximately \$225 million to bring its H-W base-precious metals mine into production by the last quarter of 1984. The budgeted expenditure is in terms of current dollars and includes interest capitalized during construction.

The mine development at Myra Falls, Vancouver Island, will involve the construction of a new 3,000-ton-per-day mill to supplant the 1,000-ton facility currently treating ore from the neighboring Lynx and Myra mines.

The company believes the H-W orebody to be "the most significant massive sulphide development in Canada since the Kidd Creek (Texasgulf) discovery near Timmins in the mid-1960s."

At year-end, the H-W had drill-indicated geological reserves of 15,232,000 tons averaging 0.07 oz. gold, 1.1 oz. silver, 2.2% copper, 0.3% lead and 5.3% zinc per ton. The estimates are based on ore within 50-100 ft. of individual diamond drill intersections. At a production rate of approximately a million tons per year, this is sufficient to keep the new mill going for 15 years.

However, Westmin says numerous mineralized areas extend beyond the proven blocks and to other parts of the extensive property, which should extend mine life well into the next century.

To the end of 1982, some \$35 million of the projected total had already been expended, mostly on sinking the shaft which will be bottomed at 2,500 ft. early in the second quarter.

The board of directors' decision to go ahead with this project follows receipt of Stage II approval-in-principle from the British Columbia government on Mar. 11.

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WMINER MARCH 1983

**Westmin discovers extension  
to Lynx mine orebody**

Westmin Resources has discovered an extension of the orebody at its Lynx mine on Vancouver Island.

Although not fully outlined, the new zone will extend the mines' life for many years and add substantially to total reserves at the Buttle Lake operation. Drilling is ongoing, aimed at four sections over a strike length of 700ft. Lynx ore grade material has been intersected in each section. Drilling has been too widely spaced to calculate mineable reserves.

The deposit is open to the east and

west, and drifting is underway to the east to allow for further drilling.

Westmin is proceeding with the \$180-million expansion of its Buttle Lake operation. The new H-W underground mine is expected to be in production by late 1984. The production rate will eventually be 4000 tons/day from the new and existing mines.

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Major extension discovered**Westmin's Lynx mine gets new lease on life**

Westmin Resources has discovered an extension of the orebody at its Lynx mine on Vancouver Island that could extend its life for many years.

"It is so good that if we hadn't discovered the H-W orebody we would be throwing our hats in the air," Paul Marshall, president, told a group of financial analysts in Toronto.

Westmin has believed for many years that the Lynx mine was on its last legs, and that is why it began a massive search for new ore in the late 1970s which eventually resulted in the discovery of a huge H-W deposit. But the new zone, although not fully outlined, means that the company will be able to add substantially to the approximately one million tons of non-H-W reserves grading 1% copper, 1% lead, 7.9% zinc, 2.8 oz. silver and 0.06 oz. gold per ton. While declining to put a grade or size on the Lynx extension, Mr. Marshall said the results from the limited drilling on the zone so far were "better than anything we have had before."

After the meeting, Mr. Marshall told The Northern Miner that "drilling has now been aimed at four sections over a strike length of 700 ft. and Lynx ore grade material has been intersected in each section. But drilling is still too widely spaced to calculate minable reserves." He added that the deposit is open to the east and west, and that drifting to the east is under way to allow for further drilling.

On the H-W deposit, which is currently the subject of a major underground development program (N.M., Jan. 20/83), Mr. Marshall says "we have come across interesting sections of high grade ore underground, more than when it was drilled. But the design is such that the grade will be about the same as the current production." He added that he expects the new mine to go into production between the second and fourth quarters of 1984.

The production rate will eventually be 4,000 tons per day from the new and existing mines. Cost of the entire expansion has been increased by \$30 million to \$180 million, of which about \$40 million has been spent so far.

Mr. Marshall said Westmin has not yet decided how to finance the H-W expansion, adding "we will decide closer to the wire. We have had a lot of interest from foreign firms that want a claim on the concentrates."

Mr. Marshall indicated that the only thing that could hold up the new mine is a delay in obtaining government approvals.

Turning to the company's energy division, Mr. Marshall said that both oil and gas production would be up substantially in 1983. After years of stagnancy near the 40 mmcf per day rate of gas production, Westmin expects to increase the daily flow by about 40% this year. Oil production will also rise, to about 4,000 bbl. per day from about 2,600 in 1982. About 50% of this is heavy oil.

Mr. Marshall indicated one of the company's major long-term projects is in the Lindbergh heavy oil area of Alberta, where Westmin has about 1.2 billion bbl. of reserves. However, he pointed out that only 1%-2% of this is recoverable by tertiary production.

But with steam injection Westmin estimates recovery could rise to 30% and beyond, increasing total recoverable reserves to more than 100 million bbl. Steam on one well so far tested quadrupled production. The company hopes to put steam to six or seven more wells this year.

The company is currently netting back \$20 per bbl., and with steam recovery the netback would be about \$17. To put steam to one section of leases, Mr. Marshall said, would cost about \$100 million, and the company has 10 sections in the area. However, he said the money would not all be spent at once since it is a 20-25-year project.

He says the company feels it can market all the heavy oil it can produce until 1985, at which time it is expecting a glut on the market. For this reason Westmin is now investigating various upgraders.

From the company's leased coal properties in Alberta Westmin received a \$10 million advance royalty in 1982 as well as a \$3 million regular royalty. Although the advance royalty will not be repeated this year, the regular royalty is expected to increase to \$5 million annually in four years.

Like most other companies, Westmin is eschewing base metal exploration this year and concentrating on precious metals. It is currently drilling its Detour Lake area property with one drill, and expects to concentrate most of its activity in the area of the option it holds from Tournigan Mining Explorations.

The company says revenues reached a record \$124.9 million, versus \$106.1 million in 1981.

Westmin had a record cash flow of \$72,183,000, up from \$63,415,000 in 1981. Net earnings rose to a new high of \$39,812,000 from \$32,946,000. Net per common share, after provision for dividends on Class A and B preferred shares, came to 65¢ versus 58¢ in 1981.

As of December 31, 1982, working capital stood at \$76,364,000 compared with \$83,000,000 a year earlier.

In the year's final quarter, cash flow came to \$19,050,000 versus \$14,808,000 in the comparable 1981 quarter. Earnings were \$10,783,000 in the latest period compared with \$7,306,000 in the last quarter in 1982 and net per common share was 20¢ and 16¢ respectively.

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while rectangular hollow section steel (127 x 178 mm) forms the skips guides and 102 x 102 mm, the counterweight guides. Timber sets are at 2.13 m centres with bearing sets at approximately 45.7 m intervals. Water rings are provided as required.

Shaft excavation commenced January, 1981, and by December, 1981, had reached 461 m below surface. The shaft was stopped at this point to drive "20 Level" to obtain bulk ore samples for metallurgical testing, definition drilling and information on ground conditions. Approximately, 1,067 m of lateral development and 9,144 m of diamond drilling were completed. Seven thousand tons of ore were obtained for the testwork.

Sinking resumed in May and by December had reached 645 m.

Ground conditions in the shaft down to 640 m have been fair-to-good. Support has been 1.5 and 2.4 m rockbolts, generally on 1.2 m centres with modifications where required.

A major fall of ground in the shaft at the 25 Level station (crusher level) has necessitated additional ground support measures below this point in the shaft. It is planned to pour 1.2 m concrete rings (minimum thickness of 203 mm at 2.1 m. centres) from the 25 Level station to the shaft bottom. The loading pocket area and the shaft bottom station will be continuous concrete support. In addition, Stations 24, 23 and 21 are

being provided with additional support. Three metres and 3.66 m grouted rebar is being placed in the brows and reinforced concrete and shotcrete utilized where necessary. In order to assess ground conditions at the loading pocket, crusher stations, i.e. major excavation areas, diamond drilling from the 20 and 24 Levels and the shaft has been completed. To correctly place the crusher station, it is planned to diamond drill from 25 Level as soon as access is available.

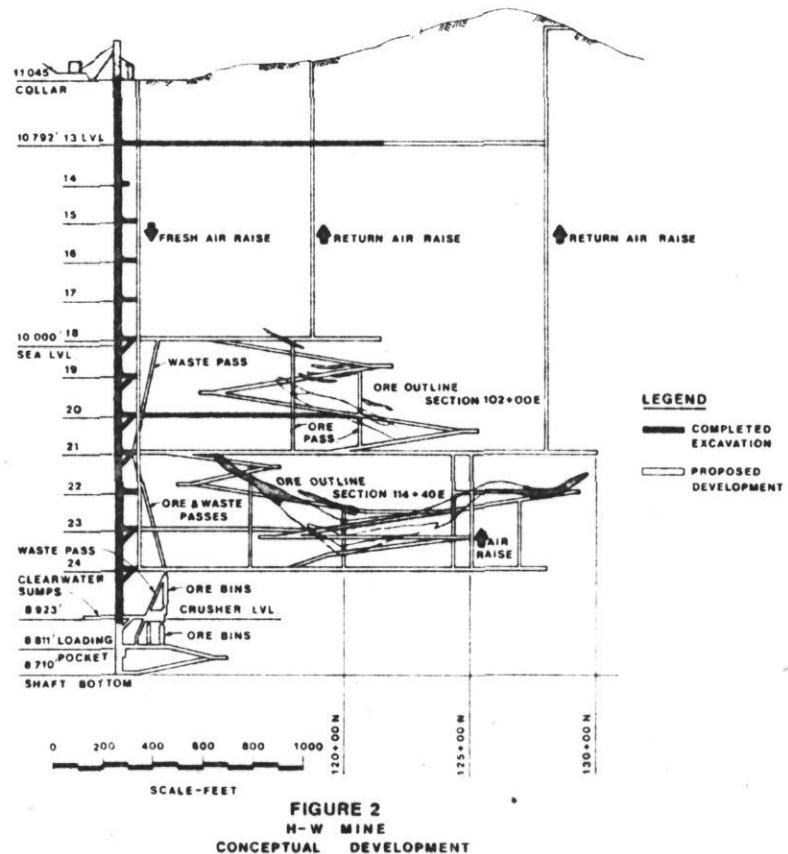
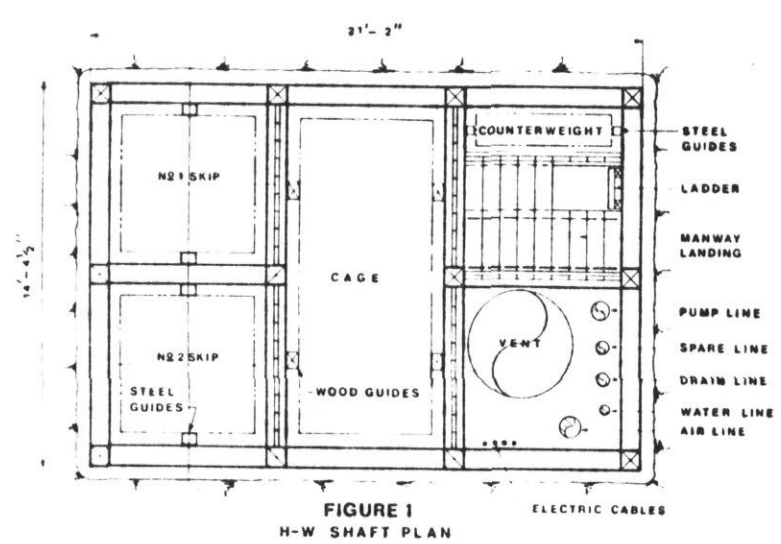
Shaft stations have been excavated at 46 m intervals from 13 Level to the shaft bottom. Thirteen Level was driven to provide a connection through to the Myra Mine for future ventilation and escapeway considerations. To facilitate development, brown pockets were excavated from 18 Level to the crusher level.

The best advance in the shaft, which is being driven by the bench method of excavation, is 56.7 m in October. The average advance to date is 1.4 m per day.

Upon completion of the shaft in March it is expected that approximately three months will be required to install the loading pocket, temporary pumps, brow pocket controls, power cables, electrical equipment and changeover from a sinking mode to a development mode. Level development and development of major openings, e.g. the crusher station, will then follow.

Production from the H-W orebody is expected to commence during the third quarter of 1984. □





# Westmin's H-W shaft nears completion

By Peter Stokes,  
General Manager, Projects  
Westmin Resources Ltd.

It has taken considerable courage and foresight to proceed with a mine expansion while all around you others are curtailing production or closing down completely.

However, management at Westmin Resources is confident that metal prices will be significantly stronger by the time the new H-W orebody is scheduled to come on stream in the third quarter of 1984.

Meanwhile, the costs associated with shaft sinking and construction of the headframe and ancillary facilities have been kept in line with the ready availability of goods and services during a period of depressed economic activity.

It is now anticipated that the shaft will be bottomed at 716 m toward the end of the first quarter of 1983.

As a bit of background to the H-W development, Westmin Resources is

the result of a 1980 merger of Brascan Resources Ltd. with Western Mines Ltd. with the latter name changed to Westmin in 1981.

Western Mines had been operating two mines, the Lynx and Myra, at Myra Falls in British Columbia since the mid-1960s. This extensive property is located some 93 km inland from Campbell River on Vancouver Island.

## Exploration stepped up

As the original mines were being gradually depleted, a stepped-up exploration program was put in place and in the fall of 1979 the discovery hole was drilled for what is now known as the H-W orebody (named after Harold Wright, a Westmin director and Western Mine's first president). As early as 1980, exploration information was sufficient to indicate that there was a minable ore reserve to sustain an 875 t, 300 tons per day (tpd) operation. It was at this point that a decision was made to sink the shaft to access the H-W orebody.

The Lynx, Myra and H-W orebodies are located in the narrow Myra Valley; with a floor elevation of 300 m ASL while the adjacent mountain peaks range up to 2,000 m ASL. As a result of this topography a suitable shaft location, outside the estimated limits of the orebody, posed difficulties. It was thus decided to excavate on the south side of the orebody to provide sufficient area

for the shaft, hoistroom and associated facilities.

The excavation consisted of bench cutting, some six benches high, involving removal of 350,000 cu. yd. of overburden and rock. The work was completed from March through July, 1980, by Gretsinger and MacDonald.

From July through December, 1980, the collar for the shaft was excavated and concreted, foundations for the headframe, hoistroom, compressor room and electric rooms were constructed and the headframe and hoistroom were erected. The foundations were constructed by mine employees, while the steel for the buildings was supplied and erected by Brittain Steel Ltd. of Vancouver. The buildings were closed in by Robertson Buildings Systems Ltd.

The headframe was designed for two double drum hoists with a 180-tonne waste rock bin and 90-tonne ore surge bin. Waste removal would be by truck, while the ore would be conveyed to a new mill via a 1,066 mm wide conveyor. The overhead conveyor system will be 1,480 m long. The headframe is 46.6 m high. The hoistroom was designed to incorporate two 2,540 mm double drum hoists. The compressor room houses 3 x 2,200 cfm Atlas Copco ER8 compressors.

## Exceeded expectation

As exploration drilling continued and the results were evaluated, it became apparent that the H-W orebody would be able to sustain a production rate considerably more than initially envisaged. It was thus decided, following suitable feasibility work, to redesign for 2,700 tpd (milling rate). The main changes here were a redesign of the production hoist and hoistroom with changes to the sheave deck. The headframe itself was sufficient to withstand the extra loading with

minor change to the foundation for the backlegs. The production hoist was increased in size to a 3,810 mm double drum 1,200 kw single motor drive with a single clutch. Rope diameter is 47.6 mm and the hoisting capacity is 270 t/h. The hoist, purchased from Asea Ltd., is being installed. In order to provide flexibility, the production hoist has been designed such that by installing an additional identical motor to that being installed and minor changes

to the gearbox, rope speed can be increased from 6.9 m/sec to 15.24 m/sec. The hoisting rate at the higher speed is 428 t/h.

The production hoist will be fully automatic. In order to reduce the high power peaks expected from the production hoist during operation, an additional compressor was installed in the compressor room to act in a similar manner to a flywheel. The power demand of the production hoist is monitored by a computer which in turn controls the load-off load cycle of the compressor. The 2-stage operation of the compressor enables the peak demands to be evened out.

The shaft will be equipped with an aluminum single deck cage 1,829 mm x 3,899 kg and capable of hoisting 32 men or a maximum payload of 4,537 kg. The cage will operate in balance by utilizing a 4,763 kg counterweight.

The skips are two 5.95 cu m bottom dump of aluminum and steel construction, weighing 7,938 kg each of a payload of 10,433 kg.

Specifications, drawings and contract documents for the headframe, hoistroom, hoist, shaft and shaft furnishing were supplied by Wright Engineers Ltd., Vancouver. The shaft layout was provided by Westmin's staff.

MacIsaac Mining and Tunnelling Co. was the successful bidder for the shaft sinking. They commenced by excavating and concreting the collar down to 50 ft. This was completed during August and September, 1980. To reduce the water inflow from surface and near surface structure, the area to the south and adjacent to the shaft was grouted.

MacIsaac provided the sinking hoist, a 2,054 mm double drum, 375 kW Ingersoll Rand hoist built in 1941 (rope dia 31.8 mm). This hoist was in excellent condition and Westmin decided to purchase it from MacIsaac as the service hoist for permanent operations.

The shaft itself was designed as a conventional rectangular, 6-compartment, timber furnished shaft. Outside dimensions of timber are 6,452 mm x 4,382 mm. The compartments (see Figure #1) consist of two

skips, cage, counterweight, manway and services (cables, pipes, etc.). Shaft timber is 254 x 245 mm. Wooden guides (190 x 139 mm) are used in the cage compartment.

# Westmin

(CONT.)

## Mill

The new mill will be built adjacent to the existing one and will have a capacity of 3,000 tons per day, giving the whole operation a total capacity of 4,000 tons. The structure has been designed in such a way that it can be expanded easily should the situation warrant such a move. Overhead conveyors, totally enclosed, will feed ore a distance of 1.2 km from the H-W mine to the process plant. Although no decision has been made yet on what to do with the old mill, it might be used for crushing, or as a backfill plant for underground.

## Tailings system

Environmental considerations are an important component in Westmin's expansion program and as a result the company has chosen a land-based tailings system to alleviate public fears of pollutants entering the water system. Extensive testing has shown this wouldn't happen but Westmin decided that tailings disposal on land would be more appropriate given these fears.

# The Northern Miner

NMINER 4NOV82

NOVEMBER 4, 1982

New mine, new mill

## Westmin moving into ranks of major gold producers

By David Duval

BUTTLE LAKE, B.C. — With new production from its H-W mine and a tripling of the existing mill rate to 3,000 tons, Westmin Resources should find itself among the top producers of precious metals in this country by 1985.

The company says its stage 2 report, which leads to approval in principle for the expansion, will probably be sanctioned by the B.C. government by December, enabling major construction to begin.

Not only does the expansion scheme call for construction of a new and much more "instrumented" milling operation but also the completion of an \$8.5 million rectangular shaft, designed to tap reserves in the new H-W orebody which the company admits is substantially better than the original discovery made in the early 1960s.

The shaft should be completed early next year after bottoming out at 2,335 ft. MacIsaac Mining and Tunnelling, the contracting firm, was just below the 24th level (1,925 ft. below the collar) when The Northern Miner was at the property.

According to Peter Stokes, general manager, projects-mining division, total cost of the expansion in 1982 dollars should be around \$150 million and the H-W mine will provide at least two thirds of the mill feed until reserves are exhausted elsewhere on the property.

After reviewing the progress Westmin has made delineating and expanding not only the H-W deposit but reserves elsewhere on its nearly 10-sq.-mile property, The Northern Miner can say the potential there appears virtually unlimited. Richard Walker, Westmin's exploration manager, who incidentally spent time at Kidd Creek Mines' Timmins operation, (formerly Texas Gulf), admits about the only thing he can compare the Buttle Lake property to is the deposit at Kidd Creek.

Westmin has nearly all the same metals and significant amounts of gold as well. Kidd, on the other hand, doesn't have any appreciable amounts of gold at its main mine but the company's reserve inventory is enormous.

Mr. Walker notes that the H-W deposit contains 0.07 oz. gold and at the end of 1981 had reserves of 12.9 million tons with 1.0 oz. silver, 2.2% copper, 0.4% lead and 5.1% zinc. A new reserve estimate is being prepared at present and it appears probable there will be a significant expansion of the H-W reserves, The Northern Miner gathers.

Approximately 1.1 million tons grading 0.07 oz. gold, 3.3 oz. silver, 1.1% copper, 1.0% lead and 7.7% zinc were reported for the Lynx, Myra and Price mines at the same date although that would be depleted somewhat by mining since. However, the chances of additional reserves being blocked out in these mines are also good, The Northern Miner believes.

Mr. Walker points out that most of the "additional potential" in the H-W zone resulted from "drilling to the east" which blocked out the eastern limit of the deposit. That limit was outlined from the bottom level of the Myra mine where a crosscut extends out to the new H-W zone, although it's about 1,500 ft. above. So far, the H-W zone has been drilled along a strike length of 4,000 ft. and 1,500 ft. of this was drilled from the bottom of the Myra mine. "Compared to other Canadian massive sulphide deposits, it's about average grade," but he adds, "it has an unusual gold content."

Shaft sinking was stopped temporarily at the 20 level (about 1,328 ft. down) until 3,000 ft. of lateral development work was completed which provided a good bulk sample for metallurgical testing and drill stations for close-spaced drilling. Ground conditions were also monitored closely. However, Westmin doesn't think there will be any problems in that area.

The metallurgical program identified three major sulphide types and part of the Myra high grade circuit in the mill was devoted to test material from the H-W mine. No significant recovery problems were identified.

According to Mr. Walker, "there is a distinct possibility of finding other orebodies in the H-W rhyolite," although he notes the "Lynx mine is far from dead yet." Edward Soder, mine manager, says most of the mill feed is being supplied by Lynx at present.

Ideally situated, the H-W deposit is right in the centre of Westmin's property which, incidentally, is located in a Class B park.

### H-W shaft

M. F. Lindsay, superintendent, H-W project, says the ultimate depth of the new shaft will be 2,335 ft. and the work is proceeding with an average advance of 7.0 ft. per day (when crews are sinking) for the 14 x 21 ft.-rectangular shaft.

Once the shaft sinking phase is completed, Peter Stokes, general manager, projects, says there will be a changeover period of about three months when power cables are installed together with the pumping system and the roping in of the hoist and skips takes place. By May 1983, major development work underground should be under way.

The H-W will be entirely different from the Lynx mine. Completely trackless (with the exception of haulageways), Mr. Stokes predicts the operation will probably employ a variety of mining methods which might include mechanized cut and fill, blast hole and room and pillar. "We can't utilize any single mining method but rather a variety of methods." Because of the elongated nature of the orebody a ramp will be needed between production levels.

He expects operating costs in the H-W mine will be "substantially lower" than present costs although metallurgical work suggests a finer grind will be needed in the mill for this ore.

The new production hoist is a Swedish model (Asea) with a hoisting capacity at present of 4,200 tons although there is 1,800 tons of additional capacity. The basic requirements have been met to modify the unit to this rate if feasible but Westmin doesn't think it's warranted at the moment. There will only be a hoistman for the service hoist since the production unit will be completely automated.

(CONT.)



NO.152(1982)  
AUGUST 10, 1982

GCNL #152 10AUG82 WESTMIN RESOURCES LIMITED

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OIL/GAS PROFIT SET  
NEW COMPANY RECORD LYNX PROFIT

6 MONTHS ENDED 30JUNE	1982	1981
Oil & Gas Earnings	\$17,636,000	\$13,950,000
Mining Earnings	<u>3,330,000</u>	<u>16,628,000</u>
Cash Flow	25,535,000	33,459,000
Net Earnings	14,281,000	17,390,000
-Per Common Share*	15¢	32¢
Capital Outlay	42,124,000	21,485,000
Working Capital	\$54,430,000	\$94,524,000
*After preferred dividends		

Oil and gas earnings of Westmin Resources Limited rose to record levels during the first 6 months of 1982 but depressed returns from the mining division resulted in lower year-to-year figures. Still, with better prices for increased rates of production of oil and gas, plus even modest improvements in metal prices, management expect a strong third quarter say president Paul Marshall and chairman William Farmilo in their semi-annual report. This should help bring earnings for the year much closer to 1981 levels than currently indicated by the first half results.

During the first half this year, Westmin was the tenth most active operator in Alberta. They participated in drilling 85 wells in western Canada and the U.S. resulting in 32 potential oil wells, 33 potential gas wells and 20 dry and abandoned wells for a success ratio of 77%. Production from the Western Mines division was slightly higher than planned but financial results were severely reduced by depressed metal prices and higher operating costs.

reserves by 243%, to just under 13-million tons averaging 0.07 oz/ton gold, one oz silver, 2.2% copper, 0.4% lead and 5.1% zinc. These reserves are based on a \$30/ton net smelter return cut-off.

These calculations are based only on the work carried out to year-end 1981, which included the 1370ft  $\delta f$  shaft advance, some 34,000 ft<sup>3</sup> of station excavation and 406ft of lateral development.

In addition to this multi-million dollar expansion at Myra Falls, Westmin has been active in exploration projects in various parts of the country. In 1981, the company participated in \$7.6-million of joint-venture exploration with Westmin picking up \$6.1 million of the tab.

Right on the property, a new area of Lynx-type ore of mineable widths has been discovered lying between the Lynx and H-W locations and this will require further investigation.

Jointly with Du Pont of Canada Exploration (50%) and Phillip Brothers (Canada) Ltd (10%) Westmin has discovered several separate mineral zones containing an aggregate geological reserve of 8-million tons grading 10% combined lead/zinc at Great Slave Reef in the Northwest Territories. Some of these zones have not been fully delineated and will require further work.

On the ~~Big Missouri~~ British Columbia property under option from Tournigan Mining Explorations, three potential open pit gold/silver zones have been identified but not yet completely delineated. Other zones are to be evaluated in 1982 on this property and on the British Silbak Premier mine property some three miles away.

Additional diamond drilling is going on in the Detour Lake area of Northeastern Ontario on 900 claims in the area of the major gold mine development by Amoco Canada Petroleum, Campbell Red Lake Mines and Dome Mines.

#### Oil and gas

While the benefits from the exploration programs could be some years away and those from the H-W project will commence in 1984, Westmin's oil and gas programs have a much more immediate impact.

During 1981, production of oil increase to 2100 barrels/day from 1900, while natural gas production remained about the same at 42-million ft<sup>3</sup>/day.

Early 1982, Westmin announced a special \$30-million petroleum development program for Alberta alone. This special program centres on major developments in natural gas and new oil.

The gas program involves participation in the building or expansion of 15 gas plants and related facilities and the tying in of existing and proposed development wells. The gas from all these wells has been contracted and production is

scheduled to start during the fourth quarter of 1982. Westmin's share of this added production is estimated at 21-million ft<sup>3</sup>/day.

The special program also involves the drilling of 60 wells for the production of conventional and heavy oil. Most, if not all of these wells, will qualify for the 'new' oil price. Another plus is that most of the wells will be on the company's mineral title lands which means that taxes payable on production are significantly lower than prevailing Crown royalties applicable to similar production on other lands.

As a result of this special program, Westmin is looking forward to new cash flow of approximately \$24-million per annum commencing late 1982. These funds will serve to replace cash flow from depleting wells as well as adding substantially to funds available for further exploration and development.

Over the years, Westmin has acquired a great deal of expertise in finding and developing heavy oil. Based on continuing success in the Lindbergh area of east-central Alberta, McDaniel Consultants have upped proven and probable reserve estimates by 541% over the past 12-month period to 74.5-million barrels while gas reserves have increased 41% to 500.7 billion ft<sup>3</sup>.

The value of these petroleum reserves at 31 Dec 1981, as determined by McDaniel Consultants, amounted to \$442-million, an increase of \$116-million or 36% over year-earlier evaluations. These values are based on a 15% annual discount rate.

Westmin also has significant interests in other oil plays in other parts of Canada, the US and a 13% interest in almost 2-million acres in Abu Dhabi where drilling and seismics are currently under way.

There are several large blocks in the Beaufort, the most significant being the 12% in 290,000 acres just to the south of Dome Petroleum's Kopanoar and Koakoak wells which came up with very encouraging tests last fall. Westmin also has a 7.4% working interest in a block offshore Labrador.

Despite the uncertainties of 1981, Westmin ended the year with record revenues, cash flow and net earnings. Total revenues increased to \$106.1-million from \$94.7-million and cash flow rose to \$63.4-million from \$60.1-million. Net earnings climbed to \$32.9-million from \$31.9-million.

Westmin ended the year with no debt and a working capital of \$81.4-million with \$55.8-million of that being cash and short-term investments. This leaves the company in very good shape to pursue further exploration, development and/or acquisitions.

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APR 82



New H-W headframe at Westmin Resources Buttle Lake mine

## Westmin Resources: 'you have to believe that there will be a brighter day...'

Stephen J Vitunski  
Manager, Corporate Relations  
Westmin Resources Limited

We are certainly glad that you added 'over the next few years' to your request for Westmin Resources' outlook for the mineral industry in Canada.

Something quite dramatic would have to happen to turn the near-term outlook from uncertainty and depression to something approaching optimism.

Still, if you're in the resource business, you have to believe that there will be a brighter day, sooner than later. All it would take is but one major development to start the turn-around ... something as simple as a change in monetary policy here or in the US or probably in both countries. Then, there is the whole spectrum of worldwide trouble spots ... any one of which is capable of flaring up into a broader, more disruptive conflict. If this happens, both Reaganomics and budget-balancing would be shunted to the back burner as world leaders wrestle with the more immediate danger.

Unfortunately but traditionally, confrontations of varying geographic scope and intensity have tended to reverse economic downtrends.

Whether the economies turn around under duress or because things are getting better, resource industries should follow suit almost immediately ... especially those companies with established productive capacity, good management and ready capital for investment in expansion. In addition to these qualities, Westmin possesses a well-diversified portfolio of interests in oil & gas plus the mining of base metals, precious metals and coal.

### Westmin's activities

Since this is the *Western Miner*, we shall start with our hard rock interests. Westmin's mine at Myra Falls on Vancouver Island operates at a capacity of some 1000 tons/day and in 1981 produced 17,000 oz of gold, 783,000 oz

silver, 4.8-million lb of copper, 4.3-million lb lead, 29.2-million lb zinc and 30,000 lb cadmium. Most of the ore has come from the Lynx and Myra mines.

However, plans are well advanced to bring the big new H-W orebody on stream early in 1984. Already a six-compartment shaft has been sunk to the 1370ft level on its way to a 2500ft target. Right now, lateral development is taking place to get into the massive sulphide orebody for further definitive diamond drilling and for bulk samples needed to establish metallurgy for a proposed new mill. Management envisages a 3000 tons/day operation, three times current output.

While still not entirely defined (its still open in three directions) the H-W orebody is shaping up as one of the more significant deposits of its kind in Canada. The 1981 diamond drilling program, from surface and underground, increased drill-indicated and possible ore

NMINER 29 APR 82  
Relatively unscathed

## Westmin bright spot in resources

VANCOUVER — In these times of economic uncertainty there's one bright spot in the resource sector that's proving to be the exception to all the rules — Westmin Resources.

Addressing the well-attended annual meeting, Paul M. Marshall, president and chief executive officer, said the company had come through the recession "relatively unscathed" and even though first-quarter earnings of approximately \$8 million were about \$1 million less than last year, he predicted a "significant comeback" by the end of 1982.

He argued that the previously announced \$30-million oil and gas development program in Alberta would contribute new cash flow of

\$20-25 million annually commencing late this year. New oil prices will probably apply to all production and contracts are already in place for the gas.

Royalty and other tax concessions recently agreed to by the Alberta government are also expected to help and he speculated that "a similar recognition of the facts by the federal government could instill new life into the industry and give rise to sufficient renewed activity to perhaps lead the economy out of the current recession."

Responding to a question on its Beaufort Sea interests the company stated no cash flow was expected from this area for at least 5-10 years and no drilling activity was likely on any of its extensive holdings there in the coming year.

Westmin has a 12% interest in large blocks within a few miles of the Tarsuit Koakoak and Kopanoar wells.

Westmin claimed that the National Energy Program's petroleum and gas revenue tax reduced profits by almost 15% or 10¢ per share largely because it was imposed on gross revenues from oil and gas. The company said this constituted "triple taxation" since the scheme didn't take into account crown or other royalties paid by the producer nor did it allow the tax to be deducted for income tax purposes.

A. William Farmilo, chairman, said government policy in the energy sector was "working against Canadian companies" and he expressed the view that Canadianization was a fair objective if it was done equitably, over a period of time, and wasn't based on negativism, hostility and anti-Americanism.

Mr. Marshall told the meeting that contracts for some 90 million tons of existing coal reserves located on mineral title lands will have a particular effect on 1982 earnings. These represent barely one-third of reserves on these lands and negotiations are under way to obtain the mining rights to an additional four billion tons.

At the company's Buttle Lake operation on Vancouver Island, further drilling of the H-W orebody has increased drill indicated and possible reserves by 61% to 12.9 million tons and plans are under way to triple the current production rate to 3,000 tons per day. The expanded mining division should be "augmenting cash flow sometime in 1984" and the first full year of production will take place in 1985.

Most of Westmin's precious metal production was sold forward in 1981 avoiding the slide which saw metal prices "plummet to their lowest real values in over 30 years but only a limited amount of 1982 production is similarly insulated," noted Westmin.

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# The Northern Miner

THE NORTHERN MINER April 15, 1982

## Westmin earnings accentuate new image

VANCOUVER — There's plenty of substance behind Westmin Resources' impressive new corporate image, the annual report indicates, and the future for the diversified mining, oil and gas company appears bright.

Westmin had a record year in 1981 with "gross revenues, cash flow and net earnings all increasing to new highs," says Paul M. Marshall, president and chief executive officer, who noted they were attained in a year "which saw the imposition of new and onerous taxes on petroleum revenues and much lower prices for base and precious metals."

As reported earlier, Westmin had net earnings of \$32.9 million last year, over \$1 million more than in 1980. However, dividends on preferred shares reduced net earnings per common share to 58¢ from 71¢ the previous year.

Despite "unsettled conditions" the petroleum division had an active year with oil production increasing to 2,100 bbl. per day — a 200-b/d increase over last year — while gas production averaged 42 million cu. ft. per day, almost the same as before.

The value of petroleum reserves increased by 36% and are now estimated at \$442 million by company consultants based on a 15% annual discount rate before income tax.

About \$30 million is budgeted for a "special petroleum development program" in Alberta this year, which will see Westmin participate in the building and expansion of 15 gas plants and related facilities. Existing and proposed development wells will be tied into these facilities.

New cash flows of approximately \$25 million annually are expected from the program, from which Westmin's share of natural gas pro-



Paul M. Marshall, president and chief executive officer Westmin Resources

duction is projected to be 21 million cu. ft. per day.

Located in Vancouver, Westmin has one of this country's strongest mining divisions with its most valuable asset, the Buttle Lake operation on Vancouver Island. Net smelter returns here in 1981, amounting to \$40 million, were almost identical to 1980 since precious metals were sold forward in 1980, cushioning the effects of subsequent price drops. Production in 1982 will not fall in this category, the company notes.

Most significant is the new H-W deposit which, according to Westmin, appears to be "shaping up as one of the larger deposits of its kind in Canada." The orebody is still open in three directions and now has a strike length of 3,600 ft. with drill indicated and possible reserves of 12.9 million tons grading 2.2% copper, 0.4% lead, 5.1% zinc and a precious metals content averaging 0.07 oz. gold and 1.0 oz. silver per ton.

Westmin expects to complete the new H-W shaft to 2,500 ft. by year-end after suspending sinking at the 1,370-ft. level for lateral development. This will permit more detailed drilling and the completion of rock mechanics studies required in mine planning. A stage two report for government is scheduled by mid-year, and a major construction program to triple the present mill rate to 3,000 tons per day could start late 1982 or early 1983 once approval is given.

Meanwhile, near Stewart, B.C., Westmin continues to expand the mining potential of its holdings there and only recently announced that drilling on the Big Missouri property, under option from Tournigan Mining Explorations, came up with drill-indicated reserves of 929,000 tons grading 0.103 oz. gold equivalent, minable by open pit.

Westmin has stated in the past that the property could be the nucleus of an important mining operation, and results seem to be proving them right. Consolidating its Stewart position further, Westmin optioned British Silbak Premier Mines' gold-silver-base metal prospect and must spend \$5 million over five years for a 50% interest.

As the largest shareholder in Lacana Mining, with 25% of the shares outstanding, Westmin has equity in a company, essentially debt free, with a working capital of about \$14 million and net earnings of \$1 per share expected for 1981.

Topping \$1 million for the first time, Westmin's coal revenue royalties are expected to accelerate in the coming years. The company is negotiating with an Alberta utility on leases which would yield royalties escalating from a base in excess of \$2 million annually.

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### Westmin Resources reports improved nine month profits

Nine month earnings reported by Westmin Resources show an increase to \$25.6-million from \$24.4-million, despite a third quarter decline to \$8.2-million from \$8.8-million in the similar 1980 quarter. Cash flow from operations increased to \$48.6-million for the nine month period from \$45.4-million in 1980. 92F 12E 072F 071

The company reports that it has found a 500ft eastward extension to the H-V massive sulphide orebody being developed at Myra Falls on Vancouver Island. A \$20-million shaft sinking program is more than halfway to its projected 2500ft depth.

Westmin recently signed a letter of intent enabling it to earn a 50% interest in British Silbak Premier Mines' Stewart BC gold-silver-base metal property. The agreement calls for Westmin to spend \$5-million over five years. After expenditures of \$7-million have been made on the property, British Silbak can back in for a 50% participation by making a \$1-million payment to Westmin or it can elect to commit \$2-million for property development, thereafter assuming half of all future expenditures. Its interest will be reduced to a 20% net profits carried position by electing not to participate.

As part of the agreement, Westmin will purchase 120,000 Silbak shares at \$2.50 each with an option on an additional 600,000 shares. 104B 11E 104B 046

On the Big Missouri gold-silver property also near Stewart, Westmin completed 8500ft of diamond drilling in 61 holes together with 9600ft of percussion drilling in the 1981 field season. The program was designed to evaluate the open pit potential of several zones discovered earlier. W/M

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**Westmin's H-W deposit**

Westmin Resources' new H-W orebody on the extensive Myra Falls property on Vancouver Island is shaping up as one of the larger base metal deposits of its type in Canada.

At present, the shaft is a little more than half-way to its projected depth of 2,500 ft.

This \$19 million project will be the first vertical development on the property as both the Myra and Lynx are being mined via adits into the surrounding mountains.

Diamond drilling from these workings and the surface, has extended the H-W orebody another 1,000 ft. eastward to bring over-all strike length to 3,000 ft., while the indicated dip length is 1,600 ft. and the orebody is still open to the east, west and south, while the northern extension is offset by a north dipping east-west fault.

One of the latest holes into the eastward exterior area penetrated a total of 111 ft. of massive sulphides, considered to be ore grade copper-zinc. Two other holes, intended to define the southern boundary, intersected 38.7 and 42 ft., respectively, of massive sulphides with average copper and higher zinc values.

#### Ore reserves grow

As a result of all this success, the ore reserve picture is constantly being expanded. An outside consultant is updating these figures.

However, it is significant that as of July 31, "probable" and "inferred" A" H-W reserves, stood at 18.8 million tons averaging 1.81% copper, 0.21% lead, 3.45% zinc, 0.066 oz.

gold per ton and 0.77 oz. silver. This represents a big improvement over seven months earlier when Jan. 1 independent estimated 5.3 million drill indicated tons and 2.7 million additional "possible" tons averaging 2.1% copper, 0.3% lead, 4.9% zinc, 0.7 oz. gold per ton and one oz. of silver.

Of course, these reserves are in addition to over a million tons proven at the existing Lynx and Myra mines.

These two mines, plus some development ore from the small but rich Price mine, keep the mill running at about 1,000 tons per day.

When the H-W comes on stream, by the first quarter of 1984, production will gradually increase to sustain a mill rate exceeding 3,000 tons per day by 1985.

With the Myra and Lynx orebodies gradually running out of ore, there could be a shortfall in output near the end of 1983 before the H-W comes into full production.

All metals are shipped from the property as concentrates. During 1980 these concentrates contained over 5.9 million lb. copper, 5.1 million lb. lead, 33.7 million lb. zinc, 19,000 oz. gold, 786,000 oz. silver and 64,000 oz. cadmium.

Westmin's precious metals participation is further enhanced by its approximately 25% interest in Lacana Mining Corp. which is a major silver-gold producer in Mexico. Lacana, in turn, has a 26.25% interest in the Pinson open pit gold mine in Nevada which came on stream early this year at a rated capacity of 45,000 oz. of gold per year.

#### Exploration

On the exploration front, Westmin holds some 900 claims in various blocks between the Big Detour Lake gold mine being developed by Amco Canada Petroleum (50%), Dome Mines (25%), and Campbell Red Lake (25%) and the recently commissioned Selbaie base metal mine across the border in North-western Quebec. Preliminary exploration on the Westmin holdings has been encouraging.

Along with DuPont of Canada Exploration (50%) and Philipp Brothers Canada (10%), Westmin has been working on the 2,477-claim Great Slave Reef holdings west of Pine Point in the Northwest Territories. So far, some eight million tons grading 10% combined lead-zinc have been outlined.

And in the Big Missouri area of British Columbia, the company is assembling a large block of gold-silver properties via option deals with Tournigan Mining Explorations and latterly British Silbak Premier Mines.

Westmin owns the coal rights beneath some 500,000 acres of mineral title lands in central Alberta.

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Extends Myra Falls orebody

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## Westmin's 9-month earnings up despite third quarter decline

Westmin Resources reports that it has found a 500-ft. eastward extension to the H-W massive sulphide orebody being developed at Myra Falls on Vancouver Island (N.M., 21/81). MYRA, LIX

A \$20 million shaft sinking program is more than halfway to its projected 2,500-ft. depth to reach what Chairman A. W. Farmilo and President Paul M. Marshall say is "becoming one of the larger base metal deposits of its type in Canada."

The company reports higher earnings for the first nine months of 1981, even though third quarter profits were off somewhat. The 9-month net profit came to \$25,640,000, up from \$24,409,000 for the same period last year, whereas the third quarter's earnings of \$8,250,000 compare with a previous \$8,837,000.

Dividend considerations for both the Class A and B preferred shares had the effect of reducing 9-month net per common share to 42¢ from 56¢, with third quarter net at 10¢ vs. 20¢.

Despite "unsettled conditions affecting Canadian resource industries," Westmin's cash flow from operations increased to \$48,607,000 for the nine months to Sept. 30, 1981, from \$45,418,000 in the corresponding 1980 period.

Westmin's working capital amounted to \$81,973,000 at Sept. 30, as against \$17,822,000 a year earlier, reflecting proceeds of the \$100 million Class B preferred issue completed earlier this year.

A high percentage of current assets is invested in relatively short-term, high yield securities. This had the effect of pushing third quarter investment income over the \$3 million mark, compared with less than \$500,000 in the matching 1980 quarter. Investment income for the

latest 9-month period came to \$6,177,000 vs. \$3,113,000 in the first three quarters of 1980.

With Sceptre Resources as operator, Westmin has a 13% interest in a recently spudded well on a 2-million-acre concession in Abu Dhabi.



Company	Purpose of expenditure	\$000s to be spent			
		1981	1982	1983	Beyond 1983
Scottie Gold Mines 104B/11E 104B 074	The company's gold-silver mine was recently placed in production. Total: \$7.5 million	7,500			
Teck Corp	Construction is slated to begin on the Bullmoose coking coal mine in northeast BC in the spring of 1982. It is designed to supply 1.7 million tons of coal annually, beginning in late-1983. Total: \$220 million		110,000	110,000	
Westmin Resources 22F/12E 071, 072	The shaft is being sunk for development of the Creek zone copper-lead-zinc deposit near the Myra and Lynx mines at Buttle Lake, BC. Production is expected by 1983 and ore will be milled at the existing concentrator. Total: \$15 million	5,000	5,000	5,000	

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**Westmin Buttle Lake strike is settled**

The strike by workers at the Buttle Lake mining operations of Westmin Resources which began Oct. 1 has been settled. The Northern Miner learned at press-time.

The company also reports that it is seeking approval to expand production at the Vancouver Island mine site, where shaft sinking is under way to tap newly discovered reserves in the H-W deposit.

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Company	Purpose of expenditure	S000s to be spent			
		1981	1982	1983	Beyond 1983
Equity Silver (continued)	Regional exploration		100		111
	Replace mill equipment	155	<del>6</del>		6
	Buy on-stream analyzer	200			
	Additions to flotation	200			
	Mill expansion				2,500
	Replace plant equipment	121	300	70	280
	Move carpenter shop	55			
	Replace misc. equipment	41	177	39	363
	New warehouse storage	50			
	Buy computer facilities		75	75	
	Replace telephone system	20			
Total: \$11.64 million					
Esso Minerals Canada	Having just bought the Byron Creek colliery in southeastern BC, Esso plans to expand it.	35,000	35,000		
Total: \$70 million					
Fording Coal Ltd	The \$115 million coal mine expansion at Elkford is well under way.	38,000	26,000	20,000	
Total: \$84 million					
Lornex Mining Corp Ltd 92I/7W 07AISE00E	The \$160 million expansion of the copper mine at Logan Lake, BC, is complete. Project included upping the milling rate to 80,000 tpd and purchasing additional pit equipment.	78,300			
Total: \$78.3 million HIGHLAND VALLEY					
Noranda Mines Ltd 82M/9W 082M 141	The Goldstream copper-zinc mine near Revelstoke is scheduled to be in production late in 1982 at a rate of 1350 tpd. Total cost of the project is estimated at \$62 million.	27,600	16,300		
	Studies have started on modifications to the ore handling and processing systems at the Granisle mine.	300	300		
Total: \$44.5 million					
Norco Resources	A hydraulic and longwall coal mine is planned at Bowron River, near Prince George, BC. Output will be sold to Taiwan Power Co.	40,000	41,000		
Total: \$81 million					
Placer Development Limited 93K/3E 093K 006	The bulk of spending at the Endako moly mine will be for upgrading the mill.				
	Replace mobile equipment	50	1,291	1,511	
	Upgrade and replace process equipment	536	1,815	1,040	
	Complete flotation expansion	185			
	Complete roaster expansion	1,697			
Total: \$8.125 million					
Ruth Vermont Mine Limited 82K/15W 082KNE009	This silver-lead-zinc producer was reopened this summer in southeastern BC.	4,000			
Total: \$4 million					

Company	Purpose of expenditure	\$000s to be spent			
		1981	1982	1983	Beyond 1983
BP Canada	Plans are being made for the Sukunka coal mine development near Chetwynd, BC. Total: \$400 million			400,000	
Carolyn Mines Ltd 92H111W 0924NW003	The Ladner Creek gold mine development was completed this year. Total: \$10 million	10,000			
Cominco Ltd 82F19E 082FNE052	The modernization and associated metallurgical projects at the Trail smelter will receive the bulk of spending — \$355 million. Trail modernization Sullivan mine and mill Minor projects Total: \$443 million	85,000 7,000 12,000	105,000 10,000 12,000	160,000 40,000 12,000	
Crows Nest Resources Ltd	The Line Creek coal mine at Sparwood is nearing production set for next year. Total: \$120 million	70,000	50,000		
Dankoe Mines Ltd 82E14E 082ESW002	Spending is modest at the silver mine near Keremeos, BC Total: \$750,000	250	250	250	
Denison Mines Ltd	With the promise of a rail line to northeastern BC, development of the Quintette coal deposit is planned by 1985. Total: \$700 million		100,000	100,000	500,000
Dickenson Mines Limited KAM-KOIT 82F114U 030F111E	The silver-lead-zinc mine near New Denver, BC is receiving several improvements. Conversion to central diesel plant for mine and mill plus upgrading and increasing hydro plant Replacing mill equipment and upgrading capacity 60 per cent to 200 tpd Total: \$550,000	100	300	150	
Dimac Resource Corporation 82M13E 082M13E	This small tungsten mine was recently placed in production near Clearwater, BC Total: \$2.5 million	2,500			
DuPont Canada Inc 74E11E 074E11E	The Baker gold mine at Chappelle, BC, is in production. Total: \$6 million	6,000			
Equity Silver Mines Ltd 93L11W 093L11W	This newly-opened silver mine is planning expenditures of about \$7 million for mining and \$3 million for milling. Replace pit equipment Total: \$10 million	477	695	4,673	855

# CANADIAN MINING JOURNAL

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## CMJ Capital Spending Report

**BRITISH COLUMBIA \$2.996 billion**

Company	Purpose of expenditure	S000s to be spent			
		1981	1982	1983	Beyond 1983
Afton Operating Corporation 92I/10E 092INE003	Mobile equipment for open pit copper mine	3,500	3,500		
	Systems improvements at mill	750	750		
	Systems improvements at smelter	750	750		
	Total: \$5 million				
BC Coal Ltd	The \$278 million Greenhills coal mine is expected to begin production in mid-1983 at a rate of 1.8 million tonnes/year.	63,000	100,000	60,000	
	Expenditures at Sparwood include \$17.6 million for pit equipment, \$13 million for land acquisition and residential construction and \$1.6 million for a new lab.	53,000	46,000	28,000	10,000
	Construction at the Harmer mine includes a new dry and office and maintenance shop extension.	9,458	7,635		
	Cost of increasing the throughput of Westshore terminals and upkeep.	43,000	74,000	38,000	
	Total: \$472.093 million				
BC Hydro	The price tag of the Hat Creek coal mine and generating plant due to come on stream in 1988 has risen to \$5 billion, with roughly 45 per cent of the cost being for the mine.	32,000	32,000	32,000	129,000
	Total: \$2.25 billion				
Bethlehem Copper Corporation 92I/7.0 092ISE001	Spending at this open pit copper mine has nearly doubled this year over last.				
	Replace mining equipment	4,554	2,117	1,468	
	Construct tailings dam	7,316	2,376		
	Total: \$17.831 million				
Brenda Mines Ltd 924/110E 0924NE047	A new mining shovel and mill equipment were added at this copper-moly producer.				
	New mining shovel	2,000			
	Classifying and flotation equipment	4,250			
	Normal equipment replacement	3,500	4,000		
	Total: \$13.75 million				



JUNE/81

W MINER

## Westmin Resources: new name, new progress for a growing Canadian resource company

From its roots as a small BC mining company, Westmin Resources (formerly Western Mines Limited) has grown, in less than 30 years, to become a major factor in Canada's resource industry. -

The company's most spectacular growth has occurred in the past year, beginning in June 1980 when it combined its mining interests with the petroleum and coal interests of Brascan Limited (through the acquisition of Brascan Resources) and in doing so became the principal resource arm for Brascan. (Westmin is owned 84% by Brascan Limited.)

Following this merger, Westmin acquired 23% of Lacana Mining Corporation which has a 30% interest in the Las Torres silver-gold mine in Mexico, as well as a 26% interest in the Pinson project, a new gold mine in Nevada which will produce around 45,000 oz/year of gold. Westmin has a three-year option to purchase an additional 1-million shares of Lacana which if exercised, would increase its ownership in the company to 30%.

Westmin's oil and gas interests, centred in Alberta, now stretch from the Beaufort Sea to the Labrador Coast; New York State to Texas and California; and to Abu Dhabi. Mining involvement extends from BC to Quebec and from the central Arctic to Latin America.

In 1980 net earnings amounted to \$31.9-million or 71¢/share, compared to \$28-million or 60¢/share the year before. Record profits were reported for the first quarter of 1981 of \$8.9-million or 19¢/share compared to \$8.1-million or 17¢/share in the same period of 1980. During the first quarter the company split its issued and outstanding shares on a two-for-one basis and completed a public share offering which netted \$100-million.

### MINING DIVISION

The 1979 discovery of two new orebodies (the Price and H-W deposits) marked a significant turnaround for Westmin's Butte Lake copper-lead-zinc mine on Vancouver Island, BC.

Both deposits are now being developed for production, assuring continuity of the Butte Lake operations after the Myra and Lynx ore is exhausted.

'Three years ago, remaining ore in the Lynx and Myra deposits was sufficient for only a three-year life at the current milling rate of 300,000 tons/year', George Furnival, general manager of the

Mining Division told shareholders at the annual meeting held recently in Vancouver.

Proven reserves in the Lynx/Myra mines at 1 Jan 1981 were estimated at 1,091,000 tons averaging 0.07 oz/ton gold, 3.3 oz/ton silver, 1.1% copper, 1% lead and 7.7% zinc.

Exploratory drilling to date on the H-W deposit has uncovered 5,314,000 tons of drill-indicated ore and 2,714,000 tons of possible ore reserves averaging 0.07 oz gold, 1.0 oz silver, 2.1% copper, 0.3% lead and 4.9% zinc.

'Currently estimated reserves in the Lynx/Myra, Price and H-W mines now total more than 9-million tons, sufficient to maintain current milling rate for more than 30 years', Dr Furnival reports.

Three drills are now working on the property, one on the surface and two exploring underground. The Lynx, Myra and Price orebodies all occur at the same horizon in the volcanic series, above the H-W horizon.

Development of the Price deposit includes driving two new adits; one has already been driven in 1660ft and the second has reached 1000ft. Dr Furnival reports that neither adit has yet reached the western end of the zone. Mining from the Price is expected to begin before the end of 1981, he says.

The H-W deposit is being developed by a \$20-million six-compartment shaft which is now down over 600ft. The shaft, planned for a total depth of 2500ft, is scheduled for completion in early 1982.

The deposit is estimated to have a strike length of 2000ft, a dip length of 1600ft and an average thickness of 56ft; it is still open in three directions and has been explored for only a third of the strike length of the higher orebodies.

The H-W deposit is named after Harold Wright, chairman of Wright Engineers. Mr Wright is a director of Westmin who was instrumental in bringing the Butte Lake property into production.

### EXPLORATION

Westmin's emphasis in its outside exploration program has been on base metals, precious metals and uranium. In 1980 the company spent \$4-million but because much of it was in joint ventures, this equated to about a \$7-million program.

At Great Slave Reef in the Northwest Territories, diamond drilling in early 1980 encountered two new mineralized zones

west of the original discovery zone. Four drills operating on the property during the past winter have completed the 50,000ft of drilling slated for 1981. Reserves are estimated at 8-million tons grading 10.3% combined lead-zinc. Westmin, as operator, has a 45% interest in the project, participating with Dupont of Canada (45%) and Philipp Brothers (10%).

Encouraging results are reported from work on the Big Missouri gold property near Stewart, BC, held under option from Tournigan Mining Explorations. Westmin has the right to earn up to a 77.5% interest in the property. Percussion and diamond drilling will continue this summer to determine the grade of the potential open pit area, as well as to test other targets, Dr Furnival reports.

In the Detour Lake area of Ontario, Westmin will be drilling this season on its holdings near the Amoco Gold mine now being developed by Dome Mines and Campbell Red Lake. A diamond drilling program is also planned on the Cook gold prospect southeast of Timmins, Ontario by Asarco (38.25%), operator of a joint venture with Westmin (38.25%) and Inco (24.5%).

The search for uranium is continuing at a strong pace with 10 prospects being explored under joint venture agreements in Saskatchewan, Quebec, New Brunswick and the Northwest Territories. Of particular interest is the Dubawnt property in the NWT, in which Westmin has a 70% interest. Extensive uranium-bearing boulder fields were discovered and partially defined in the 1980 drilling program.

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## Westmin has record first quarter and money for new acquisitions

The record will probably show 1980 was a new beginning for Westmin Resources (formerly Western Mines.) Last June minority shareholders approved the acquisition of all the outstanding shares of Brascan Resources making it Westmin's principal natural resource arm. After this merger, the company proceeded to acquire 23% of Lacana Mining which has a 30% interest in one of the world's largest silver producers located in Mexico. Lacana also has a 26% interest in The Pinson project, a gold mine in Humboldt County, Nevada, which recently came into production. The Pinson project is expected to produce 45,000 oz. gold per year.

This year, Western's shares were split two for one and its name was changed to reflect that company's broadening resource base.

On the financial side, Westmin made a public offering in mid-April of four million convertible class B preferred shares at \$25 each to provide funds for new resource acquisitions. The \$100 million from the offering, plus a good line of bank credit, will enable it to purchase additional resource assets, said A. W. Farmilo, chairman, at the annual meeting in Vancouver.

Record first-quarter earnings were achieved this year, he told shareholders. For the three months ended Mar. 31, Westmin had earnings of \$8,957,000 or 19¢ per common share compared to \$8,089,000 or 17¢ per common share in the same period last year. Cash flow from operations increased to \$17,202,000 from \$15,962,000 the previous year.

A previous issue (N.M., Apr. 23/81) summed up the progress made in both the oil and gas and mining divisions during 1980. However, at the meeting, Dr. George Furnival, Westmin's executive vice-president and general manager of the mining division based in Vancouver, gave an update on the company's Buttle Lake mine on Vancouver Island as well as mineral exploration programs elsewhere in the country.

According to Dr. Furnival, the Buttle Lake operation provided \$41 million in revenue and \$26 million in cash flow during 1980. And he noted the two new orebodies discovered in 1979, the Price and the H-W deposits, were being aggressively developed. Two adits are being driven on the Price, and the H-W deposit is being developed by a 6-compartment shaft which is down over 400 ft. The shaft is scheduled for completion in early 1982.

Metallurgical testing of the H-W ore is being carried out, and preliminary results indicate good zinc recovery with the concentrate grading over 50%. Studies are continuing on the copper metallurgy.

Two drills are currently exploring the H-W orebody, and it is known that the Lynx, Myra and Price orebodies all occur at the same horizon in the volcanic series, above the H-W horizon. The H-W is now believed to have a strike length of 2,000 ft., a dip length of 1,600 ft. and an average thickness of 56 ft. It is still open in three directions and has been explored for less than one-third of the strike length of the higher orebodies, says Dr. Furnival.

Indicative of the H-W's potential is the fact the first drill hole completed underground in the 1981 program, some 500 ft. east of the eastern limit of the known H-W orebody, intersected 50 ft. of massive sulphides. The upper 34.7 ft. of that intersection was ore grade material. The H-W deposit now ranks among the top 10 base metal deposits of its type in Canada, reports Dr. Furnival.

Reserves in the Lynx and Myra mines as of Jan. 1, were estimated to be 1,091,000 tons averaging 0.07 oz. gold, 3.3 oz. silver, 1.1% copper, 1% lead and 7.7% zinc. Precious metals accounted for 60% of revenue from concentrate in 1980, says Westmin.

An engineering report has established drill-indicated and possible reserves of 8,029,000 tons for the H-W deposit for the same date. Averaging 0.07 oz. gold, 1.0 oz. silver, 2.1% copper, 0.3% lead and 4.9% zinc they bring the total reserve picture for the property up to nine million tons — enough for 30 years of production at the present mill rate.

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## 1981 outlook encouraging

## Westmin expands exploration

Despite concern over the Canadian political and economic environment, the outlook of Westmin Resources (formerly Western Mines) in 1981 is encouraging, says Chairman A. W. Farmilo in the latest annual report.

In 1980, net earnings of Westmin amounted to \$31.9 million compared with \$28 million 1979. This was equivalent to 71¢ per share versus 60¢ a year earlier.

Mr. Farmilo says that "with solid, growing and diversified asset base, efficient operations in all divisions and exciting exposure the company is in a position to move forward vigorously."

Reviewing the company's performance last year, Mr. Farmilo and President Paul M. Marshall note that exploration, development and other capital expenditures were at all time highs resulting in significant additions to reserves in both the petroleum and mining divisions.

Production of ore from the Lynx and Myra during the year rose by 4% to a 5-year high at 306,712 tons. This, however, did not completely offset the lower mill head grades and consequently there was a drop in mill recovery. Concentrate production was down some 8% from 1979 levels.

**Ore reserves**

During 1980, 306,712 tons were mined and 254,512 tons were added to ore reserves, resulting in a net decrease in reserves of 52,200 tons. Proven ore reserves in the Lynx and Myra mines at the end of the year were 1,091,800 tons averaging 0.07 oz. gold and 3.3 oz. of silver per ton and 1.1% copper, 1% lead and 7.7% zinc.

Exploratory drilling of the Price and H-W discoveries during 1980 indicated the potential for much greater reserves. However, until underground development has been able to block out these reserves, it is not possible to classify them as "proven" reserves and therefore they have not been included in the above table. An independent consultant prepared a year-end estimate of the drill-indicated and possible reserves.

An independent consultant prepared a year-end estimate of 5,314,400 tons (drill indicated) and 2,714,600 tons (possible) having an average grade of 0.07 oz. of gold and 1 oz. of silver per ton and 2.1% copper, 0.3% lead and 4.9% zinc.

Major new development commenced with the preparation of the H-W shaft site and erection of the headframe, hoistroom, and some ancillary facilities. The collar has been cemented, equipment is now in place and sinking commenced in early 1981. The shaft is scheduled for completion in August 1982.

**Exploration**

The Mining Division participated in an active mineral exploration program in 1980 throughout Canada, either alone or in joint ventures, many of which Westmin managed. Gross exploration expenditures which included partner contributions and exploration of the new H-W orebody, totalled \$8.3 million.

To the end of 1980, 37 diamond drill holes had intersected the deposit over a strike length of 2,000 feet, and a dip extent ranging from 400 feet on the western end to 1,600 feet on the east. Average thickness of the deposit is 59 feet, although some intersections are as thick as 130 feet.

At Great Slave Reef/West Reef, Northwest Territories, diamond drilling in early 1980 encountered two additional mineralized zones, O-556 and P-449, west of the original R-190 discovery. Further drilling will be required to determine the extent of these intersections.

**Gold prospects**

The annual report notes that its Big Missouri B.C. prospect has numerous attractive gold-silver zones and Westmin's exploration emphasis is on those amenable to lower cost surface mining.

Westmin is involved in two gold exploration programs in Northern Ontario and Northwestern Quebec. Geological and geophysical surveys were carried out over favorable geology south of the Detour gold deposit and Westmin participated in an overburden drilling program in Currie and Bowman twps., Ontario. Both programs have targets and anomalies which will be evaluated in 1981.

**Coal**

Westmin owns the coal rights beneath some 500,000 acres of its mineral title lands in Central Alberta. The Company also holds an interest in Crown coal leases in B.C., Alberta, and Saskatchewan. Drilling in these areas has defined 400 million tons of coal recoverable by current mining methods.

**Petroleum division**

During 1980, Westmin participated in drilling 117 gross wells which resulted in 31 oil and 58 gas wells. In addition, other operators drilled 45 wells on Westmin lands, at no cost to Westmin, which resulted in 5 oil and 23 gas wells in which the company retained overriding royalty interests. Included in the total 162 wells drilled in which the company has either a working interest or royalty interest, 133 wells were located in Alberta, seven wells in British Columbia, 20 wells in the United States, one well in the Beaufort Sea and one well in the Labrador offshore area.

**Royalty income**

Westmin's royalty interests in petroleum and natural gas amounted to \$6.8 million in 1980. \$1.4 million of this amount was received from gas royalties and \$5.4 million from oil royalties, primarily from the Redwater oil field. During 1980, royalty gas sales represented 4.6% of total gas sales and royalty crude oil sales represented 48.9% of total crude oil sales. Based on average 1980 operating profit per barrel, one barrel of royalty oil is worth approximately 1.7 bbl. of working interest oil.

The working capital of \$19,401,000 at the year end was represented by \$42,033,000 in current assets and \$22,632,000 in current liabilities.

104B/1E  
104B 046

N MINER

23 APR 81

GCNL #159

18-08-80

WESTERN MINES LIMITED

92F/125

092F 072

F

NEW DRILL RESULTS FROM - Western Mines Limited has reported that one drill continued to be engaged during most of July in cementing drill holes. Drilling of new holes is continuing with two drills on surface and one underground on the H.W. zone at the mine near Campbell River, Vancouver Island, B.C. DDH W-125, drilled vertically at a location 500 feet east and 100 ft. north of W-103 cut 50.4 ft. assaying 0.058 oz. gold/t, 0.76 oz. silver/t, 0.53% copper, 0.24% lead, 3.19% zinc. Hole W-127 and W-129 failed to find favourable geology north of the east-west trending fault. W-128 cut weak mineralization. Hole W-130, drilled vertically at a location 300 feet south of W-125 intersected 25 ft. of what appears to be ore grade massive sulphides and assays are awaited. W-131 drilled vertically at a location 300 feet south of W-130 cut 50 ft. visually estimated to be 1% to 2% chalcopryrite. The underground hole P 13-297 penetrated massive sulphides 260 feet south of the intersection in W-123 and cut 42.5 ft. (32 ft. true width) grading 0.072 oz. gold/t, 4.53 oz. silver/t, 2.13% copper, 3.02% lead, 19.87% zinc. P 13-298 penetrated massive sulphides 75 ft. south of the intersection in P 13-297 which across 30 ft. true width assayed: 0.665 oz. gold/t, 5.30 oz. silver/t, 2.26% copper, 2.78% lead, 12.98% zinc.



GCNL #128 03-07-80 WESTERN MINES LIMITED 72F112E 52F 072

TWO MORE SIGNIFICANT - Western Mines Limited report that, although assay results are incomplete, results from two holes recently drilled are of such significance it is felt they should be reported at this time.

DDH W-125 was lost because of stuck rods at a depth of 1500 feet and had to be re-drilled from 550 feet. It intersected massive sulphides from 1926.1 feet to 1976.5 feet, a total thickness of 50.4 feet. Assays are not available but visual estimates are chalcopryite from trace to 7%, galena trace to 1%, and sphalerite from 4% to 20%. The significance of this intersection is that it represents a step-out hole, having been drilled vertically at a location 500 feet east of hole W-103.

The underground diamond drill hole P13-297 was drilled northward at -70° from a location on 13-Level that lies 600 feet south of surface hole W-123, assays of which are included in a story in GCNL 108(80). The hole intersected the H-W ore body at a point 250 feet south of the W-123 intersection and passed through a thickness of 32 feet of massive sulphides. Assay results for gold, silver and lead are not yet available, but copper averaged 2.11% and zinc 19.5% for the 32 feet. This hole indicates a 250-foot extension of the H-W ore body to the south and extends the dip length of the ore body on this section 114+00E to approximately 1300 feet.

A further report will be made when complete assays become available on these two holes.

GCNL #154 11-08-80 WESTERN MINES LIMITED F, P 72F112E 072F 072

6 MONTHS ENDED 30JUNE	1980	1979
Mining Income	\$12,287,000	\$8,111,000
Petroleum Income	13,043,000	8,172,000
Investment Income	2,619,000	4,522,000
Other Income	268,000	280,000
Income Bef. Following	28,217,000	21,085,000
Interest Expense	592,000	- -
Mineral Exploration Exp.	1,705,000	1,441,000
General Corporate Exp.	1,554,000	1,554,000
Income, Mine Tax: Current	390,000	3,271,000
-Deferred	8,404,000	4,238,000
Net Income	\$15,572,000	\$10,581,000
-Per Common Share*	89¢	63¢
Cash Flow Fr. Ops.	\$29,109,000	\$17,111,000

\* Giving effect to preferred dividends from 5Jun80 only and calculated as if the common shares issued to acquire Brascan Resources had been outstanding throughout 1979 and 1980

In their first report since the acquisition of Brascan Resources Limited, A.W. Farmilo, chairman of Western Mines Limited and P.M. Marshall, president, say the company drilled 57 wells in the first half 1980, resulting in 32 potential gas wells, 10 potential oil wells and 15 dry and abandoned wells; a 74% success ratio. The company produced 1679 barrels per day of crude oil and condensate and 44,300,000 cubic feet per day of gas. In the second quarter, oil was discovered at the Issungnak 0-61 well in the Beaufort Sea drilled at no cost to Western who hold 2%. Western also hold 12% interest in some 290,000 acres nearby. The Botha-Chinchaga gas plant in NW Alberta was completed in the second quarter. Western's share of production at capacity

is 10,000,000 cu.ft. per day of natural gas and 780 bpd of natural gas liquids. Production from this plant is to start this month.

At Western's Vancouver Island mine during the second quarter, the concentrator treated 82,795 tons of ore at a rate of 1,022 tons per operating day. The grade of ore was ore reserve average. Collaring of No.2 shaft at the H-W orebody has started. Surface and underground drilling continued on the Creek zone with 3 drills and by 30June had indicated the H-W orebody had a strike length of 2,400 feet and a dip length of 1,400 feet at its widest. The ore zone remains open in all four directions.

Drilling on the Keystone property has been completed and results are being evaluated. A tungsten property in the Yukon Territory has been optioned and field work is underway. Detailed geological, geochemical and geophysical programs have started on the Dubawnt uranium project in the Northwest Territories and on the Lake Detour properties in NW Ontario.

- CONTINUED ON PAGE TWO -

#### WESTERN MINES LIMITED

CONTINUED FROM PAGE ONE - Additional gas sales are expected to start by 30September and this should enhance results in the fourth quarter and beyond. Oil/gas exploration expenditures will rise in the second half and partially defer tax on income from the Mining Division. Further improvement in both cash flow and earnings is expected in the second half.

GCNL #101 26-05-80

## WESTERN MINES LIMITED

92F/12E 092F 072

PROFIT MORE THAN DOUBLED

THREE MONTHS ENDED 31 MARCH	1980	1979
Concentrate Sales, Net	\$10,934,590	\$6,909,813
Oil/Gas Income, Net	930,902	-
Investment & Other Income	476,961	399,632
Total Revenue	12,342,453	7,309,445
Concentrate Production Costs	3,712,112	3,194,096
Oil/Gas Production Costs	140,777	-
Admin., General Expense	178,402	110,362
Deprec'n, Depl'n, Amortiz'n.	887,798	333,935
Exploration Expense	755,992	587,651
Interest, Etc. Income (Expense)	(567,055)	11,697
Currency Translation Gain(Loss)	158,707	(300,654)
Income & Mineral Tax: Current	1,064,811	1,545,000
-Deferred	2,280,000	(87,000)
Net Before Extra. Item	\$2,914,213	\$1,336,444
-Per Share	54¢	25¢
Tax Loss Carry Forward	\$16,000	\$66,000
NET EARNINGS	\$2,930,213	\$1,402,444
-Per Share	54¢	26¢
Shares Issued Less Repurchased	5,418,838	5,387,638
Cash Flow	\$6,082,011	\$1,582,551
Working Capital	\$15,539,506	\$19,237,616

Significant aspects of the first quarter financial performance of Western Mines Limited this year are reported by chairman A.W. Farmilo and president G.M. Furnival as: the sudden drop in precious metal prices in late March; the decision to develop the H-W orebody and resulting capitalization of development and exploration costs; and the repayment of temporary borrowings relating to the Canadian oil/gas investment in the previous quarter. Messrs. Farmilo and Furnival comment that as the impact of the U.S. recession develops it seems unlikely that metal prices will soon rise out of their present slump.

At the mine on Buttle Lake, Vancouver Island, 84,942 dry short tons of ore were milled in the first quarter of 1980 (compared to 82,804 tons in first

quarter 1979). Average tons milled per operating day were 944 (930). Sources of ore were Lynx Mine 70.7% (65.4%) and Myra mine 29.3% (34.6%). Grade of the ore milled, per ton, averaged gold 0.071 oz. (0.090), silver 3.38 oz. (4.01), copper 1.16% (1.30), lead 1.20% (1.44) and zinc 7.35% (8.58). Concentrates produced and shipped were copper 2,834 tons (3,009), lead 1,921 tons (2,211), zinc 9,568 tons (11,314). Tons of concentrates produced totalled 14,323 (16,534) for a net return of \$10,934,590 (\$6,909,813).

Underground development drilling in the Lynx mine added new reserves on the 10-, 12- F and 14-levels of the "S" zone and on 10-level in the East "G" zone.

Tenders were called for the sinking of the shaft into the H-W orebody.

GCNL #108 04-06-80

## WESTERN MINES LIMITED

92F/12E

092F 072 F

EXPLORATORY DRILL - Since the 7 May 80 report of Western Mines Limited, carried in GCNL 90(80), PROGRESS REPORTED conditions have permitted completion of 3 of the drill holes, W-110, W-111 and W-112, on the east side of the H-W orebody that had been suspended, according to president G.M. Furnival. Results, though still incomplete, from these holes and 5 additional holes are tabled below.

Hole No.	Depth in Feet From	To	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
W-110 - Drilled vertically at a location 300 feet north of W-103								
H-W Ore Body:	1646.2	1666.0	18.8	0.211	5.94	3.03	1.14	8.54
W-111 - Drilled at a declination of 85° towards the south from a location 300 feet south of W-103.								
Upper Horizon:	1869.0	1889.7	20.7	0.071	14.79	0.11	0.96	1.77
H-W Ore Body:	1924.0	2039.6	115.6	0.080	0.37	1.10	0.04	0.40
W-112 - Drilled vertically at a location 250 feet south of W-103								
Upper Horizon:	1861.0	1910.0	49.0	N/A	N/A	1.90	0.05	3.88
H-W Ore Body:	1935.4	1942.6	7.2	N/A	N/A	1.53	0.06	0.50
W-120 - Drilled vertically at a location 175 feet north of W-117.								
H-W Ore Body:	1309.0	1394.0	85.0	0.064	0.35	1.69	0.12	2.13
W-121 - Drilled vertically at a location 250 feet east of W-118. Hole entered a fault zone and missed the sulphide zones.								
W-122 - Drilled vertically at a location 480 feet west of W-115.								
H-W Ore Body:	1574.0	1652.7	78.7	0.092	0.79	0.88	0.38	9.29
W-123 - Drilled vertically at a location 510 feet east and 70 feet south of W-108.								
Upper Horizon:	1938.5	1939.1	0.6	N/A	N/A	0.25	4.20	22.9
	1987.5	1997.6	10.1	N/A	N/A	0.90	N/A	9.4
H-W Ore Body:	2014.2	2107.0	92.8	N/A	N/A	2.52	0.03	0.47
W-124 - Drilling vertically at a location 200 feet north of W-122 - in progress.								
W-125 - Drilling vertically at a location 500 feet east and 100 feet north of W-103. Hole was drilled to a depth of 1500 feet where the rods were stuck in the hole. The hole has now been wedged at a depth of 520 feet.								
W-126 - Drilled vertically at a location 350 feet west and 50 feet south of W-122. Hole did not intersect massive sulphides; only weak mineralization over narrow sections.								

GCNL #68 08-04-80

WESTERN MINES LIMITED

92F/12E 072F 072

EXPLORATORY DRILL - G.M. Furnival, president of Western Mines Limited, reports that slides have forced a temporary suspension of drilling and the temporary abandonment of 3 drill holes on the eastern extension of the H-W ore body at the Buttle Lake mine on Vancouver Island, B.C. Drilling continues, however, with 3 drills on fill-in holes on the H-W ore body and on its western extension.

Results since those published in GCNL 54 and 55(80) are as follows:

W-109 was drilled vertically at a location 250 feet west and 50 feet north of W-105. Unlike the other holes which all deviated to the south, W-109 deviated north and intersected only minor sulphide mineralization. Assays are shown in table below.

W-110 is on the eastern extension and is suspended.

W-111 is 300 feet south of W-103 and was drilled to the southeast at a declination of -85° and to a depth of 1386 feet when temporarily abandoned. The ore bearing horizons had not been reached.

W-112 is 250 feet south of W-103. It was drilled vertically to a depth of 994 feet when temporarily abandoned. No ore bearing horizons had been reached.

W-113 is 250 feet west and 50 feet south of W-106. It was drilled as a vertical hole. Assays are shown in the table below.

W-114 was drilled vertically 100 feet south of W-93. Assays are shown in table below.

Hole No.	Depth in Feet		Length Feet	Gold oz/ton	Silver oz/ton	Copper %	Lead %	Zinc %
	From	To						
W-109	1149.0	1150.5	1.5	0.010	0.15	0.35	0.20	6.70
	1176.0	1181.0	5.0	0.030	1.93	0.20	Tr	0.75
W-113	1090.5	1105.0	14.5	0.039	1.55	0.78	1.81	21.92
	1115.0	1127.0	12.0	0.141	5.67	0.77	1.41	5.87
	1230.7	1254.0	23.3	0.068	0.59	1.99	0.11	5.21
W-114	1170.0	1200.0	30.0	-----No assays available				-----
	(a) Including 4.9 feet of barren dyke material							
	1254.6	1309.3	54.7	0.062	0.49	1.16	0.18	9.70
	(b) Including only 1.4 feet of barren dyke material							
	1254.6	1304.8	50.2	0.068	0.52	1.19	0.19	10.56

GCNL #90

08-05-80

WESTERN MINES LIMITED

92F/12E 072F 072

EXPLORATORY DRILL - Assay results from drilling completed by Western Mines Limited related to the H.W. orebody at their Buttle Lake mine on Vancouver Island, B.C., during the first half of April are reported by president G.M. Furnival.

He notes that drilling has been slowed due to shut downs for servicing the drill rigs.

Hole No.	Depth in Feet From	Depth in Feet To	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
W-144 - Drilled vertically at a location 100 ft. south of W-93,								
Upper Horizon:	1170.0	1181.7	11.7	0.079	1.06	0.44	0.53	6.49
H-W Ore Body (Previously reported in GCNL 68(80):								
	1254.6	1309.3	54.7	0.062	0.49	1.16	0.18	9.70
W-115 - Drilled vertically at a location 250 feet west and 70 feet north of W-103								
H-W Ore Body:	1608.0	1672.9	64.9	0.131	1.08	3.47	0.15	5.85
W-116 - Drilled vertically at a location 250 feet west of W-113 and 50 feet north. This hole penetrated the rhyolite west of a NW-SE fault. The only sulphides in the hole were intersected high in the section with the following assays:								
	410.5	412.7	2.2	0.010	5.84	18.50	Tr	0.45
W-117 - Drilled vertically at a location 200 feet north of W-101:								
Upper Horizon:	1272.5	1285.3	12.8	0.078	3.72	2.42	0.94	13.03
H-W Ore Body:	1302.0	1376.0	74.0	0.027	0.17	1.88	0.12	0.31
-Includes:	1302.0	1346.0	44.0	0.028	0.18	1.54	0.11	0.33
-Includes:	1346.0	1376.0	30.0	0.024	0.015	2.38	0.13	0.28

W-118 - Drilled vertically at a location midway between holes W-37 and W-39. The following intersection appears to be west of the fault referred to under hole W-116 above. Its correlation with the mineralized zones penetrated in drill holes east of the fault is still uncertain.

- Continued on Page Two -

WESTERN MINES LIMITED

CONTINUED FROM PAGE ONE -

Hole No.	Depth in Feet From	Depth in Feet To	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
W-118	995.0	998.5	3.5	N/A	N/A	1.15	0.40	8.45
	998.5	1003.4	4.9	N/A	N/A	1.20	0.40	10.20
W-119 - Drilled vertically at a location 200 feet south of W-115								
	1646.8	1667.8	21.0	0.082	0.46	2.04	0.10	1.28

holes were deepened just a bit further.  
Well, the rest is history... and more of it is in the making every day as drilling continues.

**New ore system**

The recent discovery is viewed as a new ore system and "not part of the Lynx and Myra zone," reports Mr. Walker. Located north of the

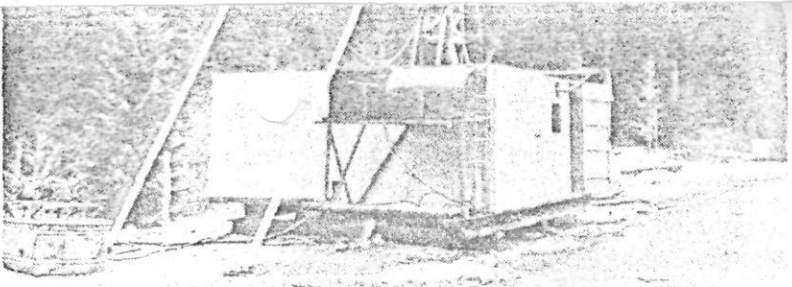
done it is still unknown.  
The mineralization in the H-W zone occurs in rhyolite and he refers to it as a new hydrothermal centre. "Open on strike at both ends, the whole zone is a system in which we expect to find a number of ore-bodies," he said. On a broader scale, dimensions on strike could be 2,400 ft. or more. The single main H-W orebody alone is over 1,000 ft., he reports.

Drilling is taking place on each side of the H-W orebody and the ore types being found are similar to those found in their two producing mines. Enriched ore containing lead, zinc, barite and precious metals is being found above the main orebody. Some of the precious metal values for gold have assayed 0.90 oz. ton over 0.8 ft. and 97 oz. silver.

With today's spiralling prices for precious metals, gold and silver are important commodities to the company. And technically their mining operation could be classified as a silver mine. For the six months ended June 30, 1979, gold values averaged 0.09 oz. per ton and silver 3.94 oz. per ton. During 1978, 17,603 oz. of gold were produced and 840,958 oz. of silver. Production for 1979 is about the same.

**H-W Shaft**

The Harold Wright shaft could go deeper than the planned 2,200 ft. and Western thinks drilling could extend its depth to 2,500 ft. or more. Dimensions outside of timber are 21 ft. 4 in. by 14 ft. 6 in. and timber sets will be on 7-ft. centres. Stations will be cut at the 400, 1,000, 1,350, 1,500, 1,650, and 1,800-ft. elevations with the loading pocket at 1,900 and the spill pocket at the 1,940 elevation. Two skips are planned for the 6-compartment shaft.



The line to the right of the Long Year drill rig is not a mark-up for more holes but is the centre line of a paved highway leading to the mine site. The new H-W or Creek zone runs right under it.

Exploration underground at the Lynx mine is finding more ore to the west, says Western, especially in the G and S zones. Development work for this program is heading in the opposite direction to the H-W zone and they feel there is a good potential for this area. On the other hand, the current potential of the Myra mine is limited as most zones have been mined out. Even so, Myra will be used to explore for new zones

As if the company's Vancouver Island operation is not keeping it busy enough, President G. M. Furnival announced recently negotiations have begun with Brascan Resources for the acquisition of all Brascan's shares. (N.M., Mar. 13/80). Brascan currently owns 50.4% of Western Mines.

According to Mr. Furnival, the purpose of the acquisition is to get a meaningful oil and gas asset base at



Photos by The Northern Miner

In the centre is the Myra open pit with the mill off to the right. Clearing of the shaft site is visible directly ahead of the pit, up the side of the mountain.

using old exploration drifts for drilling purposes.

Two such drifts exist on the bottom levels which run north-south and results to date have been encouraging enough to continue the program. Target is a rhyolite zone which is at greater depth than the Lynx and Myra zones.

Less in the limelight but still important is the Upper Price zone which is approximately 6,000 ft. from the east end of the H-W zone. The Price is 2,000 ft. above sea level compared to 400 ft. below sea level for the H-W deposit. It is about two miles from the company's mill on the other side of Myra Mountain.

Price looks like a faulted offset extension of the Lynx and Myra zone and it appears to be at least 2,200 ft. on strike. A 2,000-ft. adit is planned for April to investigate this zone and Western emphasized the point that it is a development adit. The Price will be a producing mine like the H-W and it will be completely separate.

Western's Gunnar Dziny says the Price mine will be producing in 18 months and a possible 500,000 tons are indicated in the zone at present. Some values ranging between six and 10 oz. silver per ton have been obtained and he views its potential as similar to Myra's when it got started. Much of the muck from Price will be blended with that from Lynx to maintain an acceptable mill feed while the H-W mine is being brought into production.

Unlike the H-W deposit, widths in the Price are somewhat narrower, and it strikes approximately east-west. Flat-plunging, nearly 500 ft. of the 2,200-ft. length is inferred and the width is about 400 ft. Dip is close to 45 degrees.

Additional drilling is planned from the adit to prove out the exact dimensions of the orebody and production tonnage will be trucked to the mill.

a reasonable price.

Western diversified into oil and gas exploration in 1979 with an investment of \$23 million and Brascan is viewed as an important link in the company's investment chain since its resource inventory includes petroleum plus thermal and coking coal reserves estimated at over 500 million tons. Some of these reserves are used to provide steam generated energy for a major power utility in Alberta.

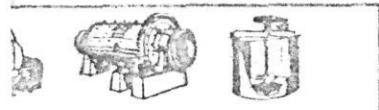
Alberta is committed to coal produced electric power, says Dr. Furnival, and most of what hydro electric power is available in the north of the province will be used for future tar sands projects.

Brascan holds about 500,000 acres of freehold acreage east of the Pembina field in Alberta in which it has all the mineral rights. These holdings go right across to the Saskatchewan border and include some heavy oil property around Lloydminster, Sask. No government royalties are payable on the ground.

In the Northwest Territories, near Pine Point Mines' recent discovery, Western has some ground strategically located on strike to the find. Dupont of Canada Exploration holds a 45% interest as does Western in the venture.

A considerable amount of mining expertise is held by Western and much of their experience relating to precious metal recovery will undoubtedly help in evaluating such properties as the Big Missouri near Stewart, B.C. Tournigan Mining has optioned the property to the company and there are several other high-grade showings in the area.

The combination of its mining activities with the petroleum and coal interests of Brascan is expected to improve Western's future growth potential even further and many analysts believe the company's leap into the 1980s will be a big one.



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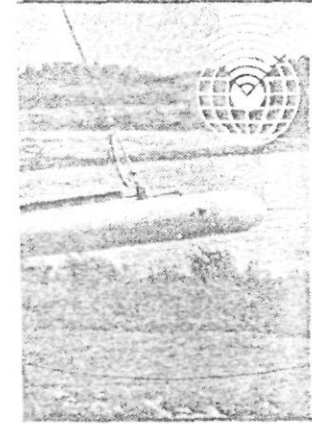
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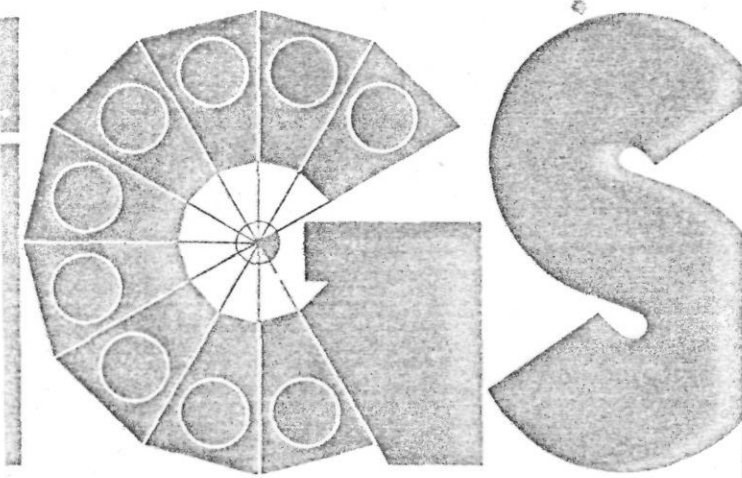
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## Bonanza raises \$7.6m for land acquisition and exploration

CALGARY — Bonanza Oil and Gas (TSE) gets \$7.6 million from the recent completion of a private placement of 800,000 common shares at \$9.50 per share.

Warrants attached to the shares entitle the holders to buy an additional 500,000 common shares at \$9.50 per share on or before Nov. 1, 1981, and after that date at \$10.50 per share by Nov. 1, 1983.

Bonanza Vice-President, W. G. Ismond, says the new funds will be added to working capital and will be used for oil-gas land acquisition and exploration in both Canada and the United States.

For the year ended Dec. 31 last — Bonanza's first year of operation — the company reports net profit of \$326,000 or 6¢ per share. Revenue from oil and gas sales amounted to \$2,697,000, while cash flow totalled \$1,668,000.

## New ore system indicated at Western Mines

From Page 1

the minesite... they were drilling. As a matter of fact, the discovery hole was made no more than 15 ft. off the highway, said Western's exploration manager Rick Walker.

Indications of this new find have been around for some time according to Mr. Walker, although only recently has the puzzle begun to take shape. Much of the indicated potential was the result of wildcat drilling from surface and he's not the only one purring over the results. At the insistence of Western's President, G. M. Furnival, several of the holes were deepened just a bit further.

Well, the rest is history... and more of it is in the making every day as drilling continues.

### New ore system

The recent discovery is viewed as a new ore system and "not part of the Lynx and Myra zone," reports Mr. Walker. Located north of the

Lynx and Myra orebodies the H-W discovery is the result of a comprehensive exploration program which involved a follow-up on known indications and revised geological information based on remapping and the relogging of drill core.

Since beginning production in 1967 the company has never had more than a five-year reserve supply. And with reserves depleting in Myra, logically enough, they realized something would have to be found to stay in production.

Well, they've done it. And the magnitude of just how well they've done it is still unknown.

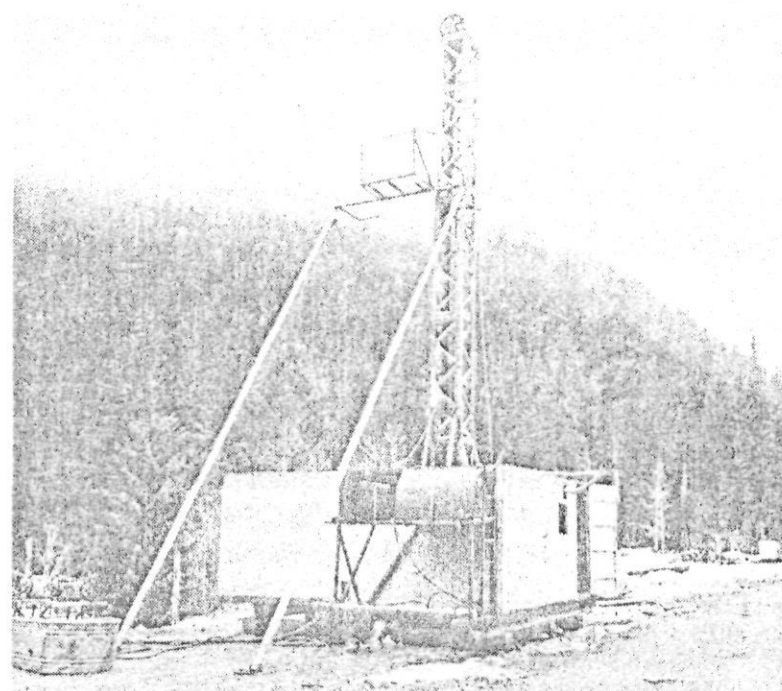
The mineralization in the H-W zone occurs in rhyolite and he refers to it as a new hydrothermal centre. "Open on strike at both ends, the whole zone is a system in which we expect to find a number of orebodies," he said. On a broader scale, dimensions on strike could be 2,400 ft. or more. The single main H-W orebody alone is over 1,000 ft., he reports.

Drilling is taking place on each side of the H-W orebody and the ore types being found are similar to those found in their two producing mines. Enriched ore containing lead, zinc, barite and precious metals is being found above the main orebody. Some of the precious metal values for gold have assayed 0.90 oz. ton over 0.8 ft. and 97 oz. silver.

With today's spiralling prices for precious metals, gold and silver are important commodities to the company. And technically their mining operation could be classified as a silver mine. For the six months ended June 30, 1979, gold values averaged 0.09 oz. per ton and silver 3.94 oz. per ton. During 1978, 17,603 oz. of gold were produced and 840,958 oz. of silver. Production for 1979 is about the same.

### H-W Shaft

The Harold Wright shaft could go deeper than the planned 2,200 ft. and Western thinks drilling could

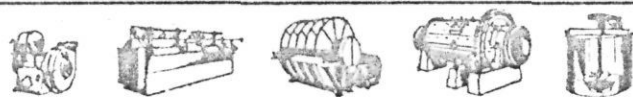


The line to the right of the Long Year drill rig is not a mark-up for more holes but is the centre line of a paved highway leading to the mine site. The new H-W or Creek zone runs right under it.

Exploration underground at the Lynx mine is finding more ore to the west, says Western, especially in the G and S zones. Development work for this program is heading in the opposite direction to the H-W zone and they feel there is a good potential for this area. On the other hand, the current potential of the Myra mine is limited as most zones have been mined out. Even so, Myra will be used to explore for new zones

As if the company's Vancouver Island operation is not keeping it busy enough, President G. M. Furnival announced recently negotiations have begun with Brascan Resources for the acquisition of all Brascan's shares. (N.M., Mar. 13/80). Brascan currently owns 50.4% of Western Mines.

According to Mr. Furnival, the purpose of the acquisition is to get a meaningful oil and gas asset base at



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GCNL #55 18-03-80

WESTERN MINES LIMITED

92F/12E

092F 072

Hole No.	Depth Feet		Length	Gold oz/t	Silver oz/t	Copper %	Lead %	Zinc %
W-103	1206.2-	1212.0	5.8	0.034	1.00	Tr.	Tr.	0.15
	1716.3-	1750.5	34.2	0.058	0.36	1.76%	Tr.	0.58

Hole W-103 was drilled vertically at a location 1,000 ft. northeast of W-93

W-104	1389.7-	1392.7	3.0	0.070	2.73	0.20	Tr.	5.25
	1428.0-	1509.2	81.2	0.047	0.316	2.32	Tr.	0.55

Hole W-104 was drilled vertically at a location 200 feet east and 50 feet south of W-93

W-106	1105.0-	1116.0	11.0	0.169	6.71	0.695	4.20	13.10
	1145.0-	1156.2	11.2	0.072	4.87	0.31	1.12	2.99
	1293.0-	1311.2	18.2	0.070	0.30	2.16	0.10	0.84

Hole W-106 was drilled vertically at a location 200 feet north of W-102 and 200 feet south of W-105.

Western Mines Limited has now reported complete assays from drill holes W-103, W-104 and W-106. Hole W-107 was a controlled hole drilled 400 feet south and 300 feet east of W-99 to confirm rock conditions for a proposed site for the No.2 shaft and was barren. The results of W-103 confirm the ore grade of the massive sulphide intersection previously reported in W-103, at a distance of approximately 1,000 feet northeast of W-93. The relationship of the sulphide zone in W-103 to the H-W ore body is not clear at this time.

W-104 intersected massive sulphides confirming the section of sulphides in W-108 and the extension of the ore body on the east side. W-106 intersected 57 feet of massive sulphides in the H-W zone but only the lower 18.2 feet are ore grade. W-106 did intersect the Upper Zone as well as a third mineralised horizon above the Upper Zone indicating a total of four separate mineralized horizons in the Creek zone area. (See GCNL 54, page one for earlier drill hole results.)

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### To sink \$19-million shaft

## Western's latest drilling indicates new ore system

N.M. Miner 03/04/80

92F/12E

92F072

By David Duval  
BUTTE LAKE, B.C. — Finding the mother lode is no easy task under the best of circumstances... but Western Mines' Ed Sader feels they might have done just that. Drilling on the H-W or Creek zone has blocked out sufficient ore to justify sinking a \$19-million rectangular shaft and collaring is scheduled for this June. Nearly 18 months will be required to sink the 2,200-ft. shaft and the contract has been awarded to MacIsaac Mining & Tunnelling.

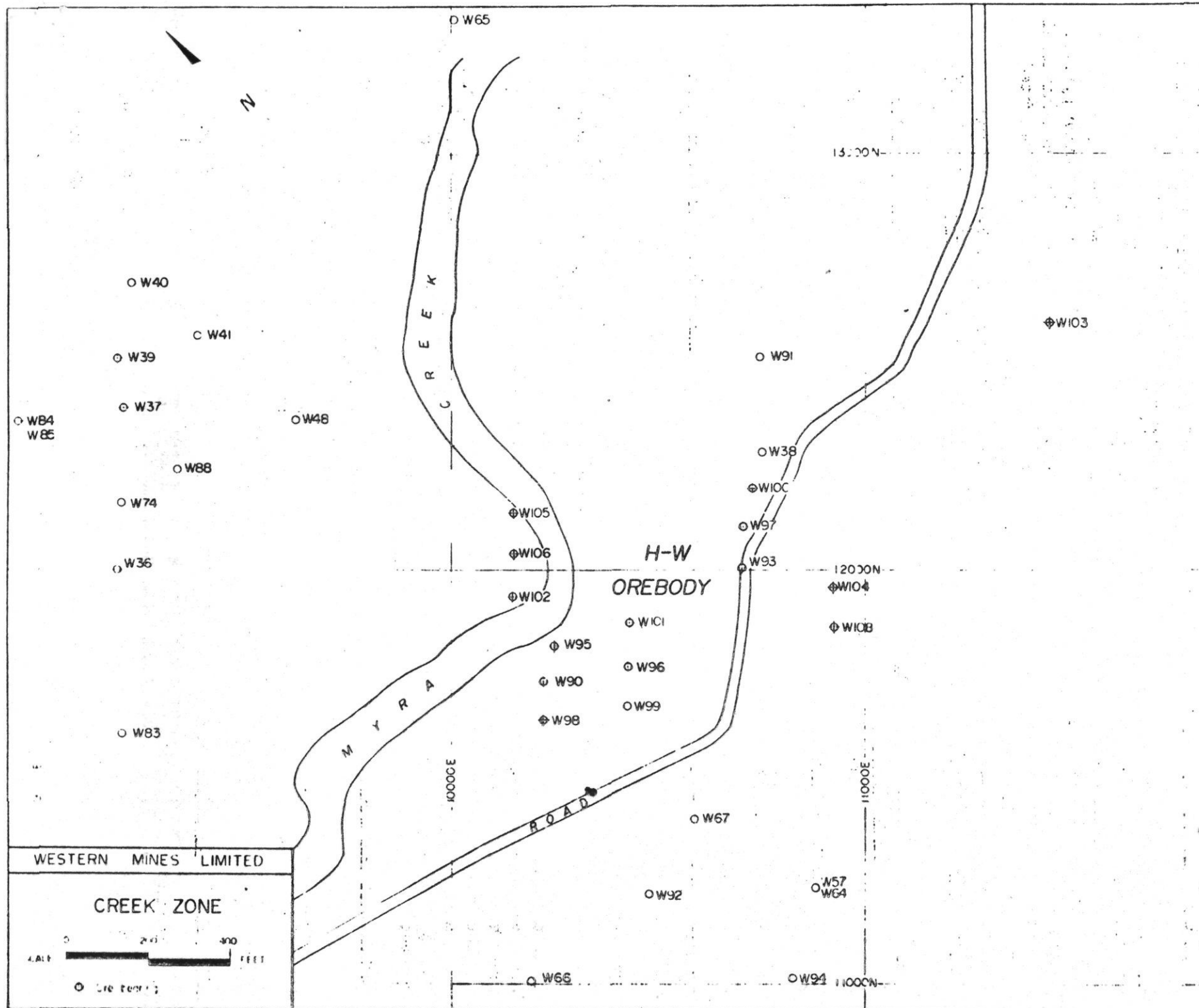
Much of the frustration encountered in the discovery so far has been related to the shaft, says Gunnar Dziny, vice-president of mines, as every time they drilled a shaft site to test ground conditions

they kept hitting ore. He appears to be coping with the frustration rather well in spite of the problem.

According to Mr. Sader, Western's resident mine manager, the new mine will be named the H-W mine after Harold Wright, chairman of Wright Engineers. Mr. Wright is a director of Western who was instrumental in bringing the original property into production.

On a recent visit by The Northern Miner, clearing of a 350-ft. square area for the shaft was nearing completion and two wire line drill rigs were positioned on the side of the paved highway leading to the mine. The units weren't parked waiting to be moved to some remote area of

See Page 4



OL #34 18-02-80

WESTERN MINES LIMITED

92F/12E

012F 072

ILLING INDICATES NEW ORE BODY - Additional diamond drill holes numbered W-98, W-99, W-100, 3 MINERALIZED LEVELS AND W-101 and W-102 have now been completed by Western Mines EXTENDS DIMENSIONS OF ORE BODY Limited on their Creek Zone adjacent to the company's producing mine at Buttle Lake on Vancouver Island. However, MYRA complete assay results are not yet available for Hole W-101. G.M. Furnival, president, says results from the current drilling have increased the areal dimensions of the main indicated ore body, now designated the H-W ore body, but more importantly, they indicate the presence of three levels of sulphide mineralization at three separate horizons.

The H-W sulphide ore-bearing zone now has an indicated strike length of some 650 feet, open on both the east and west ends, and a dip length of about 450 feet. Complete assays are available only on five holes which have penetrated the zone, namely W-93, 95, 96, 97 and 101. The arithmetic average of the ore grade intersections indicates an average thickness of approximately 35 feet.

- CONTINUED ON PAGE 2 -

WESTERN MINES LIMITED

CONTINUED FROM PAGE ONE - A second level of sulphide mineralization occurs some 100 feet higher than the H-W ore body and again at a higher stratigraphic horizon. This zone, though much thinner than the H-W ore body, generally contains sections that are significantly higher in grade. It has been identified to date, in diamond drill holes W-90, 95, 101 and 102. What appears to be a third level of massive sulphide mineralization was intersected in DDH W-100, located 100 feet north of W-97. Here, 33 feet of massive sulphides were intersected at 1,621.5 feet to 1,654.5 feet, of which 18 feet from 1633 to 1651 ft averaged 0.046 oz. gold and 0.19 oz. silver per ton, 1.14% copper, trace of lead and 3.42% zinc. The zone is about 150 feet lower than the H-W ore body and lies at a different stratigraphic horizon.

Hole W-103, which is still drilling, intersected 35.4 feet of massive sulphides with pyrite and some chalcopyrite. Visual inspection indicates a 15-foot section of 2% copper. W-103 is 850 ft. northeast of W-100 and 1000 ft. northeast of the discovery hole W-93. (A summary of the assay data from the holes in this new ore body will be carried in the next issue of the G.C.N.L.)

NO.34(FEBRUARY 18,1980) + GEORGE CROSS NEWS LETTER LTD. + THIRTY-THIRD YEAR OF PUBLICATION +

GCNL #54 17-03-80  
NEW OREBODY'S STRIKE LENGTH  
IS NOW EXTENDED TO 1,000 FEET

WESTERN MINES LIMITED

92F/12E

Assay results have now been received by Western Mines Limited on two additional holes numbered W-105 and W108 on the Creek zone adjoining their producing mine at Buttle Lake on Vancouver Island. These holes, according to president G.M. Furnival, both intersected 81 feet of massive sulphides and extended the strike length of the ore body to approximately 1,000 feet. Both holes, however, included sections in the 81-foot intervals that were below ore grade, being comprised of essentially barren pyrite. Ore grade sulphides in the H-W ore body in hole W-105 totalled 56.6 feet with an additional 3.7 feet in the upper zone, and in hole W-108 totalled 39.3 feet. The average weighted assays for the respective sections are summarized in the table.

Hole W-105 was drilled vertically at a location 100 feet north of W-106 on mine section 101+50E. Hole W-108 was drilled vertically 100' S of W-104 on mine section 109+50E.

Hole No.	Depth Feet	Length Feet	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
W-105	Upper Horizon						
	1261 - 1264.7	3.7 ft.	0.332	0.73	0.35	0.70	10.95
	H-W Ore Body						
Includes	1306 - 1362.6	56.6 ft.	0.052	0.28	1.45	0.14	6.94
	1306 - 1332.8	26.8 ft.	0.068	0.28	0.30	0.13	8.36
and	1344.8-1362.6	17.8 ft.	0.060	0.46	4.07	0.15	8.87
W-108	1383.5 - 1393.0	9.5 ft.	0.073	0.36	0.93	0.10	2.04
	1432.5 - 1462.3	29.8 ft.	0.091	0.82	4.05	0.07	8.85

See map overleaf. For assays reported earlier see GCNL 34(80), 246(79) 242(79) and 198(79).

GCNL #19 28-01-80 WESTERN MINES LIMITED 92F/12E 092F 072

NEW MINE IS TO - The presence of an ore deposit in the Creek zone adjacent to the company's BE DEVELOPED producing mine at Buttle Lake on Vancouver Island has been confirmed by the results obtained by Western Mines Limited from their recently drilled holes W-95, W-96 and W-97. The ore zone is still open east of W-93 and west of W-95. Drilling is continuing with three drills.

G.M. Furnival, president, states that, on the basis of the results of drilling to date, a decision has been made to proceed immediately with the underground development of the new mine.

Contract bids have been called for sinking a 6-compartment 2,000-foot shaft as the initial stage of development. Shaft capacity will be in the range of 1500 to 2000 tons per day. However, the ore will be processed in the existing concentrating facilities which are currently milling an average of 930 tons per day. Pre-production development will require between 2 and 3 years.

DDH W-95 was drilled vertically at a location 118+20.7N and 102+49.7E, approximately 100 feet north of DDH W-90 and 520 feet west of DDH W-93, elevation 1013 feet. The 35 feet between drilled depths of 1179.7 and 1214.7 feet averaged 0.091 ounce gold per ton, 0.75 oz. silver p/ton, 1.81% copper, 0.17% lead and 8.52% zinc. Included is the 5-foot interval from 1207.5 to 1212.5 that averaged 0.212 ounce gold per ton, 1.90 ounce silver p/t, 5.30% copper, 0.30% lead and 19.25% zinc.

DDH W-96 was drilled vertically at a location 250 feet west and 250 feet south of DDH W-93 (117+63.6N, 104+28.6E). Between drilled depths of 1196.0 feet and 1241.3 feet, 45.3 feet of sulphide mineralization assayed on average per ton, gold 0.057 oz., silver 0.36 oz., copper 0.70%, lead trace, and zinc 6.76%. A 21.3 foot section from 1220.0 to 1241.3 ft. averaged 0.058 oz. gold, 0.45 oz. silver, 1.22% copper, trace of lead and 7.08% zinc.

DDH W-97 was drilled vertically at 121+07.5N, 107+01.4E, approximately 100 ft. north of W-93. It penetrated 64 feet of sulphide mineralization, 58.3 feet of which assayed 1.42% copper, trace of lead and 0.66% zinc. Gold and silver assays are not yet available.

GCNL #32 14-02-80 WESTERN MINES LIMITED 92F/12E 092F 072

WIDESPREAD ACTIVITIES REVIEWED - Western Mines Limited, in an interim report to shareholders, IN INTERIM REPORT TO SHAREHOLDERS provided the financial results for the periods ending Dec. 31, 1979. (see GCNL No. 31, Feb. 13, 1980 for a summary)

About mine production, the report states 74,086 tons were milled in the fourth quarter of 1979 compared to 76,714 tons in 1978. Total tonnage for 1979 was 294,181 tons compared to 296,560 tons in 1978. In the following, the numbers in brackets are for 1978. The average tons per operating day were 937 (947). Number of operating days were 314 (313). The average grade of the ore produced per ton, was gold 0.09 oz. (0.08), silver 3.82 oz. (4.08), copper 1.32% (1.26%), lead 1.37% (1.35%), zinc 8.45% (8.23%). The Lynx mine produced 68.2% (64.3%) of the ore and the Myra mine produced 31.8% (35.7%).

Concentrates produced in 1979 were as follows: copper 11,525 (11,373) tons, lead 7,462 (7,464) tons and zinc 40,307 (40,012) tons. Concentrate grades were: copper 28.0% (27.4%), lead 45.0% (43.1%) and zinc 52.0% (51.5). Metallurgical recoveries were: copper 82.8% (81.2%), lead 79.8% (80.1%) and zinc 84.3% (83.3%).

By year end 165,000 tons of new ore reserves were found, principally in the 'S' zone of the Pynx mine. Proven reserves at Dec. 31, 1979 were 1,144,000 tons.

Diamond drilling in the mine exploration task force program has confirmed the discovery of a new Creek zone of major significance where a decision has been made to sink a 2,000-foot shaft over the next three years.

In 1979, outside exploration cost \$4,371,000 of which the company provided \$2,356,000.

Some of the 16 uranium projects in which the company participated were: Bokan joint venture, Alaska - results are being evaluated; the Westgate, Russell Lake and Milliken joint venture properties in Saskatchewan where drilling results are awaited; the Papaskwasati property, north of Chibougamau, Quebec where drilling continues to provide encouragement; Dubawnt Lake area N.W.T. property programs are expected to show improved results now that the land claim with the Inuit have been resolved.

In the Great Slave Reef-Pine Point properties, N.W.T. three diamond drills continued to explore. The company's share of these costs was \$186,000. An additional \$188,000 was expended for preliminary feasibility studies that were completed in November 1979. The study showed reserves of 3,816,400 tons grading 3.92% lead, 8.77% zinc. The studies showed these deposits are not economically viable at current metal prices by themselves. Drilling to locate additional deposits is continuing.

Petroleum activities include an undertaking to earn a 40% working interest in 20 sections of oil and gas rights by drilling a well on each section, in the Irish Creek (Lindbergh) area of east central Alberta, 25 miles northwest of Lloydminster. The cost for 1979 was \$2,600,000. The program resulted in six potential heavy oil wells, one combined heavy oil and gas well and 10 potential gas wells, all from the Lower Cretaceous formations. Three wells were dry and abandoned to yield an 85% discovery rate as compared to a forecast rate of 75%. The second project was the purchase of the interests of Abacus Cities Ltd. in 16 groups of producing oil and gas properties in south and central Alberta and southern Saskatchewan at a price of \$20,101,000. The interest is 88%. Net proven and probable oil reserves purchased are estimated at 703,000 stock tank barrels. Net proven and probable natural gas reserves purchased are estimated to total 12.87 billion cu. ft.



## 6-month revenue up 81%

# Czar's access to \$30 million for western oil-gas programs

By Nicholas Cotter

CALGARY — Czar Resources is in its best-ever financial position as a result of increasing revenue and profit and the company's access to about \$30 million in drilling funds over the next year, according to R. W. Lamond, president.

The company's revenue and profit improvements had been anticipated (N.M., May 24).

Czar, whose fiscal year ends on Oct. 31, is unlikely to disappoint its followers with results for the six months ended Apr. 30.

Revenue in the latest six months rose by 81% to \$2.7 million from \$1.5 million in the corresponding year-previous period. Profit was ahead by 32% to \$1,031,747 or 14¢ a share from \$779,578 or 11¢ a share a year ago.

Pre-tax profit in the six months to Apr. 30 was also up sharply to \$1,690,197 from \$1,097,478.

The company is also expanding its potential oil and gas production base. Of 59 wells drilled since late 1978 and in which Czar participated, 49 were cased as potential oil and gas wells, two were suspended because of access conditions and seven wells were abandoned.

In addition, the company conducted a seven-well exploratory program in the Helmet-Petitot area of British Columbia and, following encouraging results, plans to drill several more wells in the area next winter.

In the Butler Ridge area of British Columbia, Czar completed two wells as natural gas wells, but for

See Page 27

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Page 2

## 1979-80

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## Western Mines benefits from prices, exchange rates

The earnings report of Western Mines for the first half of 1979 makes for highly satisfying reading. Profits of the Butte Lake base-precious metals producer were up substantially over the comparable period last year, principally as a result of improved metal prices and higher exchange rates.

Net income before extraordinary items jumped to \$3,705,925 or 69¢ per share, from a restated \$983,041 or 18¢ per share for the first half of 1978. Including extraordinary items, earnings were \$3,914,925 (73¢ per share) and \$1,001,041 (19¢ per share), respectively. Cash flow from operations was correspondingly higher at \$4,197,660 (78¢ per share), against \$1,629,656 (30¢ per share).

Second quarter results showed all-inclusive earnings of \$2,512,481

(47¢ per share) in 1979 and \$273,078 (5¢ per share) in 1978. Working capital amounted to \$21,350,708 (\$3.96 per share) at June 30, 1979.

The company anticipates that base metal prices will be lower in the second half of 1979, while unsettled economic conditions will keep precious metals values high.

Tonnage of ore milled in the first six months of 1979 was 160,324, vs. 159,844 previously. Second quarter throughput averaged 934 tons per operating day, up marginally from 926 tons in 1978. Ore grades and recoveries continue to show an overall improvement.

Completion of a surface road to the Price exploratory area enabled work to commence on the nine-level adit, which had advanced 246 ft. as of June 30, 1979. This adit, which is

See Page 27

## Gold in Idaho and Northern Ontario spurs Talisman into activity

By John A. Miller

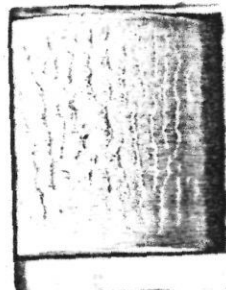
Relatively quiescent for the past several years, the current high prices for gold have brought about a revival of activity by Talisman Mines. The Northern Miner can report. Last spate of interest was some two and one half years ago, when the company sold to Barymin Explorations its 34% interest in Yava Mines for \$125,000 cash.

Within the past week the company has taken on a high grade gold-silver-copper property in Idaho, and has also entered into preliminary discussions with respect to a highly-regarded 240 sq. mile

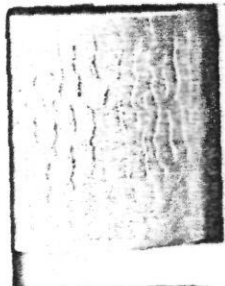
"We are certainly going to move right ahead on both bets," remarked E. F. Carr who at the company's recent annual meeting took over once again as president. David R. Bell, H. A. Pearson and B. Murphy were elected directors, while F. Munger was appointed secretary.

The most recent development has been the finalization of an option

See



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GCNL #246 21-12-79

WESTERN MINES LIMITED 92F/12E

092F 072

MORE ENCOURAGING ASSAYS FROM - G.M.Furnival, president of Western Mines Limited, reports  
MINE AREA EXPLORATION REPORTED the following results of gold, silver and lead assays from  
DDH W-90 in the immediate area of the company's producing  
mine at Buttle Lake, Vancouver Island.

Hole No.	Depth (Feet)	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
W-90	990.8 to 993.5	2.7	0.264	49.64	3.10	6.96	18.90
	993.5 to 995.8	2.3	0.066	10.46	1.15	1.54	2.66
	1099.2 to 1100.5	1.3	0.052	1.77	0.89	0.61	19.50
The average for the upper 5.0 feet is:							
	990.8 to 995.8	5.0	0.173	31.62	2.20	4.47	11.43

DDH W-90 was drilled on Section 102+00E at a location 520 feet west and 180 feet south of DDH W-93. Its collar elevation is 60 feet lower than the collar elevation of DDH W-93. Three diamond drills will be drilling this area after the holidays.

Elsewhere, says Mr.Furnival, exploratory drilling operations on the Irish Creek prospect, NW of Lloydminster, Alberta, have resulted in four potential heavy oil wells, one with potential gas and potential heavy oil in separate formations, nine potential gas wells and three dry and abandoned holes. Rigs are currently drilling on the three remaining locations of the 20-well program.

GCNL #242 17-12-79

## WESTERN MINES LIMITED

92F/12E

ENCOURAGING ASSAYS FROM MINE - Partial assay results have been reported by G.M. Furnival, president of Western Mines Limited, from the latest diamond

AREA EXPLORATION ARE REPORTED drill hole in the Creek Zone drilling program at the Buttle Lake mine on Vancouver Island, B.C. The program, undertaken by the firm's Special Exploration Task Force, is a follow-up to earlier drilling in previous years in the vicinity of what was formerly referred to as the "Waste Dump" area in the Myra Creek valley. The area lies between the Lynx and Myra mines. Sulphide mineralization associated with rhyolites had previously been reported in drill holes W-37 and W-38, drilled vertically on Section 92+00E and 107+50E respectively. Sixteen additional holes had been drilled in the general area. Four holes have been drilled in the present program, W-88, W-89, W-90 and W-93. Rhyolite and some sulphide mineralization were intersected in these holes. However, W-93 drilled vertically in Section 108+00E was the first to intersect economically significant sulphide mineralization. The assay results for this hole, except for gold and silver which are not yet available, show an average for the 73.9 feet from 1394.3 feet to 1468.2 feet, including 16.4 feet of barren dike material, to be 2.76% copper and 0.88% zinc. The layers in the sulphides are approximately at 90° to the core, i.e., horizontal, whereas the dike contacts are at a 35° angle to the core. Excluding the barren dike material, the average for the remaining 57.5 feet in the interval from 1394.3 feet to 1468.2 feet, becomes 3.56% copper and 1.14% zinc.

DDH W-90 drilled vertically 600 feet west of DDH W-93 on Section 102+00E, but 150 feet further south, intersected the following: (gold and silver assays not available)

Depth (Feet)	Length (Feet)	Copper %	Lead %	Zinc %	
990.8 to 993.5	2.7	3.1	- -	18.90	The distance from DDH W-37 to DDH W-93 is approximately 1600 feet.
993.5 to 995.8	2.3	1.15	- -	2.66	Drilling in the Creek Zone continues with two drill rigs.
1099.2 to 1100.5	1.3	0.89	- -	19.50	In the Upper Price Zone drilling has been terminated due to weather conditions. Assay results are now available on DDH PR-68 drilled on Section 164+00E and DDH PR-69 drilled on Section 160+00E and they can be summarized in the following averages:

## Section 164+00E:

Hole No.	Depth (Feet)	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
PR-68(-62°S)	443.0 to 460.9	17.9	0.096	8.80	0.37	1.93	3.84
	496.0 to 512.0	16.0	0.020	0.35	0.23	0.30	4.10
	728.0 to 734.5	6.5	0.017	0.56	0.59	0.32	4.52

## Section 160+00E:

Hole No.	Depth (Feet)	Length (Feet)	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
PR-69(-62°S)	593.4 to 598.0	4.6	0.042	0.50	0.39	- -	3.47
	630.6 to 631.9	1.3	0.003	0.64	1.35	- -	11.60
	670.0 to 671.0	1.0	0.012	1.38	1.58	- -	24.00
	861.2 to 864.0	2.8	0.019	0.89	0.45	- -	5.05

Two additional drill holes were completed on Section 160+00E before terminating the program, PR-70 angled down at -85° to the south and PR-72 at -45° south. Some sulphide mineralization was intersected but assay results are not yet available.

Elsewhere, petroleum exploration drilling on the Irish Creek project NW of Lloydminster, Alberta, has proceeded satisfactorily. Five rigs are drilling on the thirteenth to seventeenth locations in the 20-well program. To date, three potential heavy oil wells and eight gas wells have been completed, chiefly in the Viking, Colony and Mannville sands of Lower cretaceous age. Two wells were dry and abandoned.

Further to the above results, Mr. Furnival later was able to report gold and silver assays for the mineralized zone in Hole W-93. Excluding the barren dike intervals, the average for the remaining 57.5 feet of sulphide-bearing material in the interval from 1394.3 to 1468.2 feet averages 0.043 oz. gold per ton, 0.37 oz. silver per ton, 3.56% copper and 1.14% zinc. The sulphides, particularly at the top of the zone, show fine banding at a high angle to the core, suggesting the sulphides are nearly horizontally bedded. Aside from W-90 which is located further south, the nearest hole on the general trend to the west is W-88 which is located 1300 feet west. W-88 penetrated pyrite mineralization in rhyolites. The zone is open to the east of W-93. Drilling will continue after the holiday season.

# WESTERN MINES LIMITED

9 MONTHS ENDED SEPT. 30,	1979	1978	9 MONTHS ENDED SEPT. 30,	1979	1978
Mining Revenue, Net	\$23,953,635	\$11,828,090	<u>OPERATING STATISTICS</u>		
Operating Costs(Income)	11,922,971	8,855,567	Tons of Ore Milled	220,095	219,846
Income, Mineral Resource Taxes:			Ore Grades		
Current	6,011,000	1,141,000	Copper %	1.32%	1.24%
Deferred	(230,000)	102,000	Zinc %	8.54%	8.02%
Extraordinary Item	307,000	52,000	Lead %	1.40%	1.33%
NET EARNINGS	\$6,556,664	\$1,781,523	Gold, Oz./Ton	0.09	0.08
Earnings Per Share	\$1.21	33¢	Silver, Oz./Ton	3.96	3.95
Cash Flow Per Share	\$1.29	51¢	<u>Recoveries</u>		
Shs. Issued Less Repurch.	5,401,038	5,386,638	Copper %	82.41%	81.09%
Working Capital	\$24,168,137	\$16,192,021	Zinc %	84.31%	82.95%
			Lead%	80.10%	79.50%

Western Mines Limited improved results in the nine months ended 30 Sep 79 arose from higher metal prices, better mill head grades and the improved smelter contracts.

Cash flow from operations was \$6,958,323. Earnings for the third quarter of 1979 were \$2,641,739 (49¢) compared with earnings of \$780,482 (14¢) in 1978. Earnings benefited from sharply improved metal prices that were partially offset by higher exploration expenditures and currency translation adjustments.

During the third quarter, the Lynx mine supplied 70.8% of the mill feed and the Myra 29.2%. GCNL #231 30-11-79 92F/12E 092F 072 F

Because of the three week annual vacation shutdown, the concentrator operating time per calendar day for the period was only 66.9% whereas the efficiency of the concentrator in terms of operating days was 99.0%.

The development of stopes in the south-dipping 'S' ore zone on the twelfth level of the Lynx mine was commenced in the third quarter. Development drilling in the 'S' ore zone on both 12 and 14 levels continues to prove up some additional ore of average mine grade and width.

The drilling program on the eastern extension of the sulphide mineralization associated with the 'G-Footwall' rhyolite has indicated what appears to be two narrow west plunging lenses of average mine grade ore.

The report states, "The work of the special mine exploration task force, established in late 1978, has already yielded significant results. An east-west trending rhyolite flow with associated mineralized zones containing copper, lead, zinc, gold and silver values has been discovered in the Price area at an approximate elevation of 2,000 feet. To date, the rhyolite and associated mineralized zones have been identified by drilling over a distance of 1,550 feet. Widths and grades of the mineralized zones intersected in the drill holes are such as to warrant underground exploration. Drilling is continuing.

"Work has commenced on the construction of a road into the area. Work on the Price 9 level adit at an elevation of approximately 1,400 feet had advanced 729 feet by September 30.

"The task force also commenced a vertical hole, diamond drilling program in Thelwood Valley."

Drilling on the Great Slave Reef joint venture project has resulted in some reduction in reserves from those previously estimated. Engineering, economic and environmental feasibility studies have started.

The summer program on the Big Missouri property near Stewart, B.C., under option from Tournigan Mining Explorations Ltd. was sufficiently encouraging to warrant a further work program on the property in 1980. GCNL #231 30-11-79 104B/11E 104B-016 F

Encouraging results were obtained in the drilling program on the Papaskwasati property in northern Quebec with average assays of up to 2.4 lbs. of U308 per ton over drilled lengths of 8.56 feet.

Drilling is still in progress on the Milliken Lake property.

GCNL #144 26-07-79

## WESTERN MINES LIMITED

M, R, F

CONTINUED FROM PAGE ONE - The other projects concern uranium. On the Bokan project in Alaska, 31 percussion drill holes have been completed with 8 holes encountering varying grades of uranium mineralization. This program is continuing. An agreement has been signed with Northern Nuclear Energy Limited whereby Western may acquire an Ontario uranium property with known reserves. Additional drilling will be required to establish the economic viability of this deposit. Because of government restrictions, field work on the Dubawnt holdings in the N.W.T. will not start until August. In Saskatchewan, boulder prospecting has started on the Russell Lake property. At Murmac, very low frequency electro-magnetic surveys are being conducted. Geological and radon surveys have been completed at Milliken. One radon anomaly 5 to 10 times background overlies the Jug Bay Fault for a strike length of 1.5 km.

GCNL #186 26-09-79

## WESTERN MINES LIMITED

92F/12E

092F 072

NEW ORE GRADE INTERSECTIONS REPORTED - Dr. George Furnival, president of Western Mines Limited, has reported that two recently drilled holes Nos 59 and 65 in the Price mountain area, east of the company's Myra Falls mine on Vancouver Island, indicate the probable presence of mineable ore grade reserves.

DDH 59, drilled at an angle of minus 60°, intersected 19.2 feet from 302.8 to 322.0 feet, that assayed 0.043 oz. gold/t, 0.995 oz. silver/t, 0.82% copper, 0.55% lead, 7.72% zinc. An additional 6.0 feet from 327.5 feet to 333.5 feet assayed 0.004 oz. gold/t, 0.315 oz. silver/t, 0.75% copper, 2.17% lead, 10.46% zinc. The average for the entire 30.7 feet from 302.8 to 333.5 ft. is 0.028 oz. gold per ton, 0.684 oz. silver/t, 0.66% copper, 0.76% lead, 6.87% zinc. DDH 65, drilled at the same location at an angle of minus 75° intersected 6.1 feet from 326 to 332.1 feet that assayed 0.094 oz. gold/t, 2.79 oz. silver/t, 0.54% copper, 1.63% lead, 4.22% zinc. A second section, 4.9 feet, was intersected from 358.1 to 363 feet that assayed 0.002 oz. gold/t, 0.43 oz. silver/t, 0.96% copper, 0.08% lead, 7.18% zinc. Drilling is continuing.

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GCNL #198 15-10-79

## WESTERN MINES LIMITED

92F/12E NW

MORE EXPLORATORY DRILL - Dr. Geo. Furnival, president of Western Mines Limited, reporting on RESULTS ARE PROVIDED the results of exploratory drilling in the Price area lying east of the company's Buttle Lake mine on Vancouver Island, has provided assay results for the two mineralized sections intersected in DDH PR-67, the averages of which are shown in the table below:

Hole No.	Intersection Feet	Length Feet	Gold Oz/Ton	Silver Oz/Ton	Copper %	Lead %	Zinc %
PR-67	299.9- 310.4	10.5	0.122	2.87	0.82	?	5.19
	477.3- 485.5	8.2	.008	1.68	1.00	?	7.19

Lead assays are questionable (?) where barite is present in large quantities. The deeper mineralized section also included 4 feet from 470.8 feet down, thus, that whole section had a total length of 14.7 feet.

This Hole, PR-67, is situated 400 feet west of the section containing DDH Nos. PR-59 and 65, results of which are in GCNL 186(79). Hole PR-67 was drilled south at an average declination of 61 degrees.

GCNL #92 11-05-79

## WESTERN MINES LIMITED

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092F-07100682  
092F-072

72F/12E

## 3 MONTHS ENDED 31 MARCH

	1979	1978	OPERATING STATISTICS	
Mining Revenue, Net	\$6,909,813	\$5,965,285	Tons of Ore Milled	82,804 78,368
Production Costs	3,194,096	2,731,849	Ore Grades:	
Admin. Expense	110,362	116,061	Copper %	1.30% 1.21%
Deprec'n., Amortiz'n.	333,935	287,434	Zinc %	8.58% 7.77%
Exploration Expense	587,651	337,451	Lead %	1.44% 1.28%
Interest Income	399,632	173,656	Gold, Oz./Ton	0.09 0.08
Fixed Assets Sale Gain(Loss)	823	(16,735)	Silver, Oz./Ton	4.01 4.01
Currency Exchange Gain(Loss)	(300,654)	167,918	Recoveries %:	
Other Revenue	10,869	381,633	Copper	81.82% 81.29%
Income, Mineral Taxes, Current	1,545,000	417,000	Zinc	84.15% 82.39%
-Deferred	(87,000)	72,000	Lead	81.03% 80.48%
Net Bef. Extra. Item	\$1,336,444	\$709,963	Metal Values:	
-Per Share	25¢	13¢	Copper	\$1,473,882 \$679,125
Tax Loss Carry Forward	\$66,000	\$18,000	Zinc	1,768,651 886,009
Net Earnings	\$1,402,444	\$727,963	Lead	623,987 273,364
-Per Share	26¢	14¢	Gold	1,329,124 723,957
Shares Outstanding	5,387,638	5,354,788	Silver	1,691,537 985,970
Working Capital	\$19,237,616	\$14,468,534	Cadmium	22,632 16,861
			Total Value	\$6,909,813 \$3,565,286

GCNL #144 26-07-79

## WESTERN MINES LIMITED

00681  
092F-07100682  
092F-072

M.R.F.

## SIX MONTHS ENDED 30 JUNE

	1979	1978	6 MONTHS ENDED 30 JUNE 1979 1978	
Mining Revenue, Net	\$15,368,357	\$7,988,300	OPERATING STATISTICS	
Production Costs	6,453,016	5,613,717	Tons of Ore Milled	160,324 159,844
Administration Expense	283,866	267,913	Ore Grades	
Deprec'n., Amortiz'n.	668,535	594,566	Copper %	1.28% 1.28%
Exploration Expense	1,515,361	703,459	Zinc %	8.41% 8.02%
Interest Earned	900,681	370,845	Lead %	1.40% 1.31%
Fixed Asset Sale Gain(Loss)	(3,800)	17,538	Gold, Oz./Ton	0.09 0.08
Currency Exchange Gain(Loss)	(195,940)	(18,821)	Silver, Oz./Ton	3.94 3.93
Other Revenue	19,805	400,929	Recoveries	
Income, Mineral Resource Taxes:			Copper %	81.85% 81.80%
Current	3,643,000	664,150	Zinc %	84.04% 82.48%
Deferred	(173,000)	34,511	Lead %	80.72% 79.62%
Net Bef. Extra. Item	\$3,705,925	\$983,041	Metal Value:	
-Per Share	69¢	19¢	Copper	\$3,158,071 \$1,545,281
Tax Loss Carry Forward	\$209,000	\$18,000	Zinc	3,835,191 2,380,775
NET EARNINGS	\$3,914,925	\$1,001,041	Lead	1,534,523 550,910
-Per Share	73¢	19¢	Gold	2,923,973 1,500,957
Shares Issued Less Repurchased	5,391,438	5,369,588	Silver	3,854,606 1,975,994
Working Capital	\$21,350,708	\$15,005,821	Cadmium	\$61,993 \$34,383

NET PROFIT ROSE 284%. SEVERAL - In presenting comparative results of Western Mines Limited EXPLORATION PROJECTS REVIEWED for the first half of 1979 showing a 284% rise in earnings per share, chairman A.W. Farmilo and president G.M. Furnival report that net earnings for the second quarter were \$2,512,481, being 47¢ per share, vs. last year's readjusted \$273,078, being 5¢ per share. They attribute the better earnings mainly to improved metal prices and higher exchange rates. They expect metal prices to be lower in the second half while precious metal values retain high levels due to unsettled economic conditions.

Concerning exploration at the mine on Buttle Lake, Vancouver Island, Messrs. Farmilo and Furnival say that in the Price exploratory area, work started on the 9-level adit which had advanced 246 feet as of 30 June. This adit is 550 feet above the 13-level adit. It will provide access for evaluating 2 mineralized zones. A new outcropping of a mineralized zone was uncovered by the exploration crew on Price Mountain some 650 feet above the new 9-level adit. Drilling is underway to determine the extent of the mineralization and its ore potential.

Concerning outside exploration, the chairman and president mention 8 projects. The in-fill drilling program is underway on the Great Slave Reef Project, a joint venture with DuPont of Canada Exploration Ltd. and Philipp Brothers (Canada) Ltd. On the Keystone property near Hope, B.C., a diamond drill hole was completed to a depth of 3531 feet. A sulphide-bearing fracture system was intercepted containing sub-economic molybdenum values. Further drilling will be undertaken to ascertain the nature and potential of this sulphide system. Snow conditions delayed field crews gaining access to the Big Missouri gold property near Stewart, B.C., until late June. All those projects concern base and precious metals.

- CONTINUED ON PAGE THREE -



GCNL #28 07-05-79

WESTERN MINES LIMITED

EXPLORATION PROGRAMS OUTLINED - A.W. Farmilo, chairman of Western Mines Limited, told the TO ANNUAL MEETING annual meeting that while profits from the mine in 1978 showed a substantial improvement at 79¢ per share compared with 18¢ per share the year before, a greater contribution to the future profitability of the company has been made by the major programs in exploration and company development which have been instituted during the past year. These have been designed to extend the life of the Buttle Lake mine and to develop alternate and additional sources to provide further improved profitability in the year ahead. The principal reasons behind the greatly increased earnings were improved metal prices, renegotiation of the smelter contracts and an improved regulatory and tax environment for the mining industry.

About the gradual improvement in tax treatment of the mining industry, the chairman said the competitive position of the B.C. mining industry reached its lowest ever point in 1975 when Western Mines was shouldering a total tax burden of about 75% including royalties. By comparison, the effective tax rate on the Canadian operations in 1978 was reduced to slightly over 46%. This was basically due to the elimination by the B.C. government of the Mineral Land Tax Act and the Royalties Tax Act and the substitution of a tax on net profits of mining companies. Also partially responsible was the placing into effect by the Federal Government of a natural resource income credit of 25% and the allowance of a 3% inventory reduction from taxable income. He also said, "It is only fair to point out, however, that the mining industry in B.C. is still more heavily taxed than the manufacturing industry in this province and more heavily taxed than the industry in some other mining provinces of Canada and that in the United States."

Net earnings for the first quarter amounted to 26¢ per share, compared with 14¢ per share in the first 3 months of 1978. Metal prices continued to improve and operating efficiencies at both mine and mill remained at a very high level. The strengthening of the Canadian dollar is exerting a downward pressure on earnings.

Mr. Farmilo concluded by saying that, "If only one or two of the projects that are now at the stage of detailed negotiation come to fruition, I feel that the stage will be set for a new era in the development of the company."

Western will pay a 10¢ dividend on 8Jun79, record 25May79. The company will give careful consideration to a further dividend in the latter part of the year.

G.M. Furnival, president, told the meeting that recent efforts have led to five exploratory projects of significance.

Firstly, in late December, Western drilled into what has proven to be an important new ore body on the Great Slave Reef property at Pine Point, N.W.T. A preliminary feasibility study based upon presently estimated ore reserves in the R-190 and X-25 ore bodies has been completed. Assuming metal prices of U.S. 35¢ per pound for both lead and zinc, a milling rate of 1,500 tons per day and diesel generated power at 7¢ per kilowatt hour, the preliminary study shows a 2½-year payout and better than a 20% rate of return on the investment. The company is currently initiating a program of infill drilling on 100 foot centres in both ore bodies to confirm reserve estimates. New water pumping tests on each of the two ore bodies are to start soon. However, should the company decide to proceed with this development, \$35,000,000 will be required for capital expenditures over the next 2 years. Western's share will be \$14,800,000. He said the likelihood of the company requiring these funds has been enhanced by a drill hole which last week penetrated some additional lead-zinc mineralization roughly mid-way between the R-190 and X-25 ore bodies. Secondly, Western has an option on former Big Missouri property with Tournigan Mining Explorations Ltd. which could require \$2.8 million over next 5 yrs. plus a possible \$16,000,000 for plant construction. Thirdly, the co. has a joint venture on a uranium property in Alaska which could call for \$4 to \$5 million through 1983 to earn & maintain a 35% interest. Fourthly, the company's uranium property of 800,000 acres, in Baker Lake area, N.W.T., will require \$540,000 in 1979. Fifthly, the company is negotiating for a uranium property in Ontario which could involve expenditures through 1983 of an estimated \$17,000,000. The president said total capital requirements for these 5 projects over the next 5 years will be between \$55 & \$60 million.

## George Cross News Letter

NO.217(1978)  
NOVEMBER 10, 1978

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## WESTERN CANADIAN INVESTMENTS

## WESTERN MINES LIMITED

92F/12E

9 MONTHS ENDED SEP.30,	1978	1977	9 MONTHS ENDED SEP.30,	1978	1977
Revenue	\$11,828,090	\$11,363,137	Tons of Ore Milled	219,846	221,118
Production Costs	7,734,569	7,904,106	Ore Grades		
Administration Exp.	406,003	299,176	Copper %	1.24	1.13
Deprec'n, Amortiz'n.	891,882	1,096,248	Zinc %	8.02	7.41
Exploration Expense	1,279,284	1,953,983	Lead %	1.33	1.32
Interest Earned	(602,676)	(350,693)	Silver, Ounce Per Ton	3.95	4.28
Loss(Gain) On Assets	21,453	(1,583)	Value of Metals		
Currency Exchange	(467,929)	(435,650)	Copper	\$2,233,146	\$1,979,378
Other(Revenue)	(407,019)	(34,619)	Zinc	3,193,484	4,126,120
Income & Mineral Resource Taxes:			Lead	846,866	819,124
Current	1,141,000	456,000	Gold	2,551,003	1,573,413
Deferred	102,000	(165,000)	Silver	2,953,113	2,803,744
Income Tax Credit	52,000	72,000	Cadmium	50,478	61,358
NET EARNINGS	\$1,781,523	\$713,169			
Shares Outstanding	5,386,638	5,344,588			
Earnings Per Share	33¢	13¢			
Cash Flow Per Share	51¢	29¢			
Working Capital	\$16,192,021	\$13,089,347			

Western Mines Ltd. has reported that in September as a result of improvements successfully negotiated in a zinc smelter contract which extends to 1980, additional concentrate revenue of \$700,000 was recorded in the quarter which reflects the improved terms for the year to date and the second half of 1977. Metal prices firmed in the latest quarter and this, together with the decline in the Canadian dollar, improved revenue. Operating costs continue to be contained at levels below 1977 expenditures. Exploration costs have also been maintained below 1977 levels due to more joint venture participation. More available funds together with higher interest rates have increased investment income.

The accelerated mine exploration program commenced in the period and 6,351 feet of surface diamond drilling was completed. Sulphide-bearing rhyolitic beds were intersected in two holes but economically significant mineralization was absent. This program will continue through 1979.

The report states that the company's aggressive exploration program for uranium, base and precious metals continued actively throughout the third quarter with encouragement in a number of areas. The greatest uranium exploration efforts were made in Saskatchewan and in the Baker Lake (Dubawnt) area, N.W.T. Approximately 800,000 acres in the Baker Lake area are held jointly by Western Mines(70%) and the Central Electricity Generating Board (Canada) Ltd. (CEGB) (30%). Preliminary exploration work by the company has already disclosed several untested uranium occurrences on these lands which lie generally north of the significant uranium discovery announced by Urangesellschaft Canada Limited.

Geophysical and geological work continues on the eight well-located properties in Saskatchewan. The Westgate property is held jointly by Western, CEGB, Dension Mines and Saskatchewan Mining Development Corporation(SMDC). A preliminary diamond drilling program is underway on the property. The program will sample the basement rocks below the Athabasca Sandstone in areas of electromagnetic conductors and geochemical anomalies.

On the Great Slave Reef property during the third quarter a pump test was completed on the X-25 Zone. The purpose of the test is to determine the drawdown and recharge characteristics of the formation water in the X-25 Zone. The data obtained is being analyzed to permit an estimate of the energy costs for dewatering the zone which would be required if mining operations were undertaken. Exploratory diamond drilling will resume as soon as frost conditions permit access to areas of interest.

On the Keystone property in southern British Columbia, (Western) and Amax Exploration Incorporated commenced in the third quarter a deep hole test comprising one 3000 foot diamond drill hole to test a porphyry molybdenum target.

In the Timmins area of Ontario, nineteen overburden drill holes have been completed to evaluate previously located overburden geochemical and airborne electromagnetic anomalies on the Buskegau property which lies northeast of the Kidd Creek massive sulphide mine. Although visible results are encouraging, analyses of the overburden samples are not yet available for evaluation. The property is being explored jointly with DuPont of Canada Exploration Limited.

## Western Mines first half better but second quarter profit down

Western Mines in the first six months to June 30, 1978, has turned in a better performance than in the same period a year ago, a report from the company reveals. Net for the latest period has amounted to \$725,041, or 14¢ per share, as compared with \$666,610, or 13¢ per share, in the same six months of 1977.

However, earnings in the second quarter dropped sharply to \$226,078, or 4¢ per share, from the profit of \$498,963, or 10¢ per share, recorded in the first three months this year. Nevertheless, it was higher than the net of \$163,374 recorded in the second quarter of 1977.

Increased interest income, lower operating costs and reduced exploration expenditures substantially offset the \$408,798 decline in net smelter returns during the second quarter as compared with a year ago. Chairman A. W. Farmilo and President G. M. Furnival jointly state.

In the first six months, the mill treated a total of 159,844 tons, an average of 883 tons per day, averaging 1.28% copper, 8.02% zinc, 1.31% lead, 0.08 oz. per ton gold and 3.93 oz. silver per ton. This had a value after treatment charges of \$7,438,300. Operating costs were \$6,306,598 to leave an operating profit of \$1,131,702.

The company has commenced an accelerated mine exploration program, supported by the British

Columbia government's 'Accelerated Mine Development Program' to drill for prospective ore horizons in the Price and Phillips (West Lynx) sections of the mine, it is revealed.

In outside exploration work, programs have been commenced on 11 uranium and six base metal projects across Canada.

A letter of intent has been signed with Amax Minerals Exploration whereby the latter can earn a 50% interest in the Rover-Keystone molybdenum project in British Columbia. An agreement in principle has also been negotiated with DuPont of Canada Exploration which can earn a 50% interest in the Buskegau project through the expenditure of \$600,000 over the next four years. The property is located about 15 miles northeast of the Kidd Creek mine of Texasgulf.

The report also notes that the Baker Lake land freeze has been lifted, and the company is now proceeding with the evaluation of its property on the Dubawnt uranium project which now totals 797,737 acres including the six recently issued permits. It is pointed out, though, that performance of the work is restricted by a court order limiting the timing and type of work which can be done dependent on caribou movements in the area.

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WESTERN MINES LIMITED

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92 F/12 E

6 MONTHS ENDED 30 JUNE	1978	1977	6 MONTHS ENDED 30 JUNE	1978	1977
Revenue	\$7,438,300	\$8,332,353	Tons of Ore Milled	159,844	162,397
Production Costs	5,613,717	5,531,998	Ore Grades		
Administration Exp.	267,913	200,294	Copper %	1.28	1.10
Deprec'n, Amortiz'n.	594,566	727,637	Zinc %	8.02	7.36
Exploration Expense	703,459	1,406,050	Lead %	1.31	1.32
Interest Income	370,845	206,928	Silver, Ounce Per Ton	3.93	4.21
Loss(Gain) On Assets	17,538	(1,733)	Value of Metals		
Currency Exchange Gain	118,821	338,230	Copper	\$1,545,281	\$1,483,152
Other Revenue	400,929	22,345	Zinc	1,830,775	3,046,869
Income Resource Taxes	424,661	465,000	Lead	550,910	612,773
Tax Loss Credit	18,000	96,000	Gold	1,500,957	1,117,389
Net Earnings	\$725,041	\$666,610	Silver	1,975,994	2,023,776
Earnings Per Share	14¢	13¢	Cadmium	34,383	48,394
Cash Flow Per Share	26¢	23¢			
Working Capital	\$14,729,821	12,865,054			

ELEVEN URANIUM PROPERTIES - Western Mines Limited has reported net earnings for the quarter ended June 30, 1978, were \$226,078 (4¢ per share) compared with earnings of \$163,374 (3¢) for the same period last year. Increased interest income, lower operating costs and reduced exploration expenditures substantially offset the \$408,798 decline in net smelter return during the quarter, confirming the trend established in the first quarter. Cash flow from operations for the quarter was \$496,524 (10¢).

Tonnage milled averaged 926 tons per operating day (944 in 1977), for a total of 81,476 (79,280) tons milled for the quarter. The higher mill throughput for the quarter, resulting from a greater number of available operating days together with better copper and zinc grades, resulted in increased production of 746 tons of copper concentrate, 1,476 tons of zinc concentrate and 16 tons of lead concentrate over the corresponding period for 1977. Underground development continued at a reduced level compared to the second quarter 1977; however, an accelerated mine exploration program has commenced, supported by the B.C. Government's Accelerated Mine Development Program, to drill for prospective ore horizons in the Price and Phillips (West Lynx) sections of the mine.

Programs have commenced on 11 uranium and 6 base metal projects across Canada. Ten of these projects will be tested with diamond and/or overburden drilling during 1978.

A letter of intent has been signed by Amax Minerals Exploration which outlines conditions whereby they can earn a 50% interest on the Rover-Keystone molybdenum project in B.C. through expenditures of \$60,000. An agreement in principle has been negotiated with DuPont of Canada Exploration Limited who can earn a 50% interest in the Buskegau project in north-western Ontario, through the expenditure of \$600,000 over the next four years. This project is 15 miles northeast of the Kidd Creek Mine. A program of overburden drilling to sample basal till will evaluate existing geochemical and geophysical anomalies.

The Baker Lake Land Freeze has been lifted and the company is proceeding with the evaluation of its land on the Dubawnt uranium project, which now totals 797,737 acres, including the 6 recently issued permits. Performance of this work is restricted by a court order limiting the timing and type of work which can be done dependent on caribou movements in the area.



92FIRE-00682-92F-72  
Operations the same, but...

N Miner, Mar 2/78

## \* Weak dollar boosts Western Mines' profit

VANCOUVER — Western Mines net earnings for 1977 increased to \$976,142, or 18¢ a share, from \$318,909, or 6¢ a share, for 1976. Gain on foreign exchange, resulting from conversion and translation of cash and short term deposits held in U.S. funds into Canadian currency, accounted for 12¢ per share of 1977 earnings.

Cash flow rose to \$2,437,831, or 45¢ a share, from \$2,051,882, or 39¢ a share. After payment of 10¢ a share dividend, working capital was \$13,404,006, up \$1,458,987 from a year ago.

Net smelter returns declined to \$15 million from \$15.7 million. Negative effects of easier zinc and copper markets were partly offset by the weak Canadian dollar and stronger precious metal markets. Mine operating costs increased to \$36.97 per ton from \$34.07 a ton, reflecting inflationary pressures and higher level of mine exploration and development. Outside exploration costs were \$2.1 million, against \$3 million in 1976.

Milling rate was virtually unchanged at 948 tons per operating day, or a total of 296,598 tons for the year. Production with 1976 figures in brackets: copper concentrate 9,753 tons (9,934), zinc concentrate 35,147 tons (35,604), lead concentrate 7,249 tons (7,981). Payable silver and gold contained in concentrates amounted to 913,778 oz. and 16,343 oz., respectively, against

1,068,315 oz. and 17,832 oz., respectively, in 1976.

Ore reserves at Myra and Lynx total 1,459,900 tons, down 244,100 tons from a year ago. There was also a small decline in ore reserve grade.

Mine production for 1978 is scheduled at approximately the 1977 level. The mine exploration and development program also will be significantly reduced to ensure a

mine operating profit in the face of continuing depressed copper and zinc markets.

The company will continue an aggressive exploration program in Canada for base metals and uranium in association with partners. It plans to participate in \$2.7 million of exploration activity on 19 projects with partners, and the company's own contribution to this program will be \$1 million.

### Stresses joint ventures

N. MINER 4-MAY-78 92FIRE-00681

## Western Mines to keep strong cash flow

VANCOUVER — Western Mines is focusing its efforts on maintaining as strong a cash flow position as possible by reducing mine exploration and development and increasing outside joint venture activity. Chairman A. William Farmilo told the annual meeting of shareholders.

In spite of difficult conditions during the past year, he said the company has survived reasonably well. In the short term, mining companies will have to develop programs of adaptation and adjustment to these conditions, he suggested.

Governments are becoming increasingly aware of the significance of a healthy mining industry. Although "undoubtedly, tax policies conducive to more aggressive exploration and capital investment are not of themselves going to guarantee a higher rate of investment," said Mr. Farmilo, "they will certainly ensure that when world markets do change for the better, investors will be prepared to expand capacity in mine products and thereby Canada will have the opportunity to maintain its share of world trade".

Western Mines lowered its exploratory costs in 1977 from 1976 and this pattern will be maintained in 1978, he added. A policy of increasing outside joint venture participation will allow the company to keep its exploration exposure high.

Mr. Farmilo said that Western Mines is likely to join other copper, zinc and nickel producers in experiencing a weak situation in 1978. The company is in a good position to withstand adverse pressures because it is debt free and mine reserves are at an advanced stage of development (N.M., April 20, 1978).

"With a strong cash position, we are able to take advantage of an acquisition opportunity."

President Hugh R. Snyder remarked that although net earnings and working capital improved over 1976, mine operating profit declined in 1977 to \$4 million from \$5.5 million in 1976. This reflects escalating costs and declining smelter returns, both of which will likely continue in 1978, he said.

First quarter 1978 results reported following the meeting showed net earnings of \$498,963, or 9¢ a share, compared to \$503,236, or 9¢ a share, for the same period of 1977. Working capital at the end of the period was \$14,239,534.

Although mine exploration and development will be reduced in 1978, said Mr. Snyder, a number of targets will be tested on the Price Creek and Lynx mines and the Phillips (west extension of the Lynx). The company plans to spend

\$1 million on outside exploration projects, manage \$2.6 million and be exposed to \$3.2 million gross expenditures on exploration. These will be directed 38% to uranium projects and 24% to lead-zinc projects with the balance toward a mix of copper-molybdenum-tungsten and gold-silver prospects. Western Mines is participating with a total of 14 partners in 24 projects across Canada.

The company will continue to seek a suitable opportunity to invest in the resource industry, he said, and is "well placed to take advantage of any significant improvements in metal prices".

William R. Miller was elected to the board of directors. Edward C. Freeman-Attwood did not stand for re-election.

The first quarter report stated that Western Mines will be awarded six additional exploration permits in the Baker Lake area, Northwest Territories, when the land freeze is removed. Diamond drilling of 47,827 ft. was completed on the Great Slave Reef and West Reef projects with three additional mineralized zones being identified. Fifteen diamond drill holes were completed on the Costigan property south of the Key Lake uranium deposit in Saskatchewan.

ernment which add to difficulties of opening a new mine. Campbell Red Lake has been successful from a profit point-of-view and the penalty for this success is a marginal taxation rate of some 65%. This means that the additional profit received from an increase in the price of gold, or from a better grade of ore, or any lower mining costs will be divided in a ratio of \$2 to the government for every \$1 that we may retain," Mr. Redpath said.

Campbell's earnings for the first quarter are estimated at \$3,661,000 or 46¢ per share, compared to 32¢ in the same period last year.

Mr. Redpath, chairman of the board and one of the real founders of the Campbell company, did not stand for re-election to the board, although he is staying with the parent Dome Mines both as director and consultant. He is being replaced by his son, James S. Redpath, a mining engineer and well known mining contractor.



NO.43(1978)  
MARCH 2,1978

*"Reliable Reporting"*

NO.43(1978)  
MARCH 2,1978

WESTERN CANADIAN INVESTMENTS

GCNL #43

WESTERN MINES LIMITED

Year Ended Dec.31,	1977	1976
Net Concentrate Revenue	\$14,959,697	\$15,655,679
Production Expenses	10,966,098	10,113,320
Administration Expenses	416,742	481,377
Depreciation & Amortization	1,626,659	1,489,697
Exploration Expenses	2,129,081	3,034,990
Interest Earned	(509,946)	(456,452)
Asset Sale Loss	5,030	39,559
Currency Adjustments	(641,760)	36,305
Other Revenues	(40,349)	(79,026)
Income & Mineral Taxes: current	202,000	1,058,000
deferred	60,000	(381,000)
Income Tax Credit	230,000	-
Net Earnings	\$ 976,142	\$ 318,909
Cash Flow Per Share	45¢	39¢
Earnings Per Share	18¢	6¢
Working Capital	\$13,404,006	\$11,945,019
Shares Outstanding	5,354,788	5,328,938
<u>Operating Statistics</u>		
Tons of Ore Milled	296,598	296,846
Ore Grades: Copper	1.14%	1.19%
Zinc	7.58%	7.73%
Lead	1.34%	1.42%
Gold Oz.Per Ton	.08	.09
Silver Oz. Per Ton	4.29	4.94

92F 12E

The decline of net smelter returns of Western Mines Ltd. in the year ended Dec.31,1977 compared with the results for 1976 resulted from deteriorating zinc and copper prices but were partially offset by the weak Canadian dollar which dropped 8% in the year. Stronger precious metal markets also assisted the company.

Mine operating costs increased from \$34.07 per ton in 1976 to \$36.97 per ton in 1977, reflecting inflationary pressures and a higher level of mine exploration and development. Outside exploration costs were \$3,000,000 in 1976 compared to \$2,100,000 in 1977. These expenditures include the cost of the Price Creek program.

Tonnage milled averaged 948 tons per operating day. Total development footage, including the Price Section, was up by 6% for horizontal development, 23% for vertical development and 64% for diamond drilling.

Ore reserves at the Myra and Lynx declined by 244,100 tons and now stand at 1,459,900 tons and there was also a small decline in the grade of ore in the reserves.

About outside exploration the interim report states that in addition to the \$2,100,000 expended on outside exploration projects, the company managed \$1,500,000 contributed by partners. Major expenditures provided by the company were \$397,000 Price Creek, \$452,000 Great Slave Reef and West Reef Projects, and \$428,000 on the uranium projects.

A total of 13,548 feet of drilling was completed on Price Creek, 56,912 feet on Great Slave Reef and West Reef projects. On the Great Slave Reef project 3,800,000 tons of ore grading 9.1% zinc and 3.3% lead are now drill indicated.

Acquisition of an alternate source of cash flow for Western Mines has been sought by the company during the past year unsuccessfully. The search continues.

Mine production for 1978 is scheduled at approximately the 1977 level but the mine exploration and development program will be significantly reduced in scope to ensure a mine operating profit in the face of continuing depressed copper and zinc markets.

Notwithstanding these poor base metal markets prevailing at the present time, the company is placing its faith in the ultimate health of the mining industry and will continue with its aggressive exploration program in Canada for base metals and uranium in association with its many partners.

Western Mines plans to participate in \$2,700,000 of exploration activity on 19 projects, with partners, and the company's own contribution to this program will be \$1,000,000.

WESTERN MINES LTD.

9 Months ended 30 Sept.	1977	1976	9 Mos. to Sept. 30	1977	1976
Net Concentrate Revenue	\$11,363,137	\$11,661,601	Tons of Ore Milled	221,118	218,428
Production Expense	7,904,106	7,425,671	Ore Grades		
Administration	299,176	366,945	Copper %	1.13	1.18
Depreciation & Amortization	1,096,248	1,119,668	Zinc %	7.41	7.75
Exploration	1,953,983	2,123,388	Lead %	1.32	1.44
Interest Earned	350,693	384,488	Gold oz. per ton	.08	.09
Currency Gain Etc.	471,852	(305,303)	Silver oz. per ton	4.28	5.08
Earnings Before Taxes	932,169	705,114	Recoveries %		
Income Tax: Current	456,000	378,000	Copper	79.15	79.02
Deferred	(237,000)	(317,000)	Zinc	82.48	81.46
Net Earnings	\$ 713,169	\$ 44,114	Lead	80.24	81.41
Earnings per Share	13¢	1¢	Concentrate Grades %		
Cash Flow per Share	29¢	22¢	Copper	27.78	27.65
Working Capital	\$13,089,347	\$11,753,764	Zinc	52.87	52.97
			Lead	44.83	42.41

Net earnings of Western Mines Ltd. for the nine month period ended September 30, 1977, of \$713,169 includes \$435,650 attributable to currency translations of the company's funds held in U.S. dollars.

Mine operating profits continue under pressure due to low ore grades, copper and zinc prices, and higher production costs which were partly offset by higher mill throughput, higher lead, gold and silver prices, lower exploration and administration and in particular, the continued weakness of the Canadian dollar. The Butte Lake property can now be considered primarily a precious metals mine since revenue from gold and silver now exceed revenue attributable to any other metal.

Cash flow from operations was \$1,570,834 or 29¢ per share compared to \$1,163,001 or 22¢ per share in 1976.

The mine was shut down for a three week vacation period during the third quarter.

The accelerated mine development program continued with 3,409 feet of lateral and vertical development (3,246 feet in 1976) and 19,893 feet of diamond drilling (8,806 feet) in the quarter.

Union members have voted narrowly in favour of accepting a new two year contract, but this is still to be ratified by the union executive.

Drilling of 70,000 feet in the Pine Point - Great Slave Reef Project for the 1977-78 season is scheduled to start in early December.

Of 11 uranium projects investigated in 1977 with the Central Electricity Generating Board of the U.K., three have yielded significantly encouraging results-Dubawnt (N.W.T.), Costigan (northern Saskatchewan) and Bancroft (Ontario), and drilling plans for all three in 1978 are now under consideration.

Including \$1,440,000 of Western's own funds and joint venture funds from partners, Western will have managed in 1975 approximately \$3,400,000 of exploration expenditures.

WESTERN MINES LIMITED

PROD

EXPLORATION LEVEL IS BEING INCREASED - The 1976 annual report of Western Mines Limited confirms financial results previously released and carried AT THE MINE AND MAINTAINED ELSEWHERE in GCNL 39(77) together with considerable detail of the company's activities. Supplementing that information, chairman A.W. Farmilo and president H.R. Synder say production in 1977 at the company's mine on Buttle Lake, Vancouver Island, is scheduled at approximately the 1976 level and a further significant increase in mine exploration and development is planned. Outside exploration costs will be reduced to the 1975 level but the company's level of activity and exposure will be maintained through further joint ventures; in particular a planned farmout on a small portion of Western's equity in the Great Slave Reef/West Reef projects in the Pine Point area, N.W.T., and a joint venture currently under negotiation with a major European utility on the uranium program will significantly reduce company expenditures but greatly enhance exposure. Based on prevailing metal prices, similar earnings are anticipated in 1977 to those achieved in 1976. Should these prices deteriorate, a reduction of expenditures on mine exploration and development and on outside exploration will be considered. Diversification of the asset and earnings base remains an important objective, and once again an active search for an acquisition appropriate to Western's needs will be undertaken.

Advantage was taken of an improved taxation situation in 1976 to expand the exploration and development program at the Buttle Lake operation. Proven ore reserves as of 1 Jan 77 are shown in the adjoining table. Outside exploration in 1976 was largely directed towards the search for lead-zinc deposits in carbonate (Great Slave Reef) and for uranium deposits acquired from Braccan. Additional search was directed towards volcanogenic massive sulphides, porphyry copper-molybdenum, gold-silver and base metal deposits. Nineteen properties were actively explored during the year, seven of which were drilled.

On the Great Slave Reef/West Reef projects 130 holes totalling 105,000 feet were completed in 1976 as a result of which a significant zone of mineralization, the X-25 deposit, was discovered and partially delineated. Drill indicated reserves of this zone at 31 Dec 76 were 2,813,000 tons grading 11.9% zinc and 4.1% lead. Other mineralized drill intercepts require additional follow-up drilling.

NO. 87 (MAY 5, 1977) + GEORGE CROSS NEWS LETTER LTD. + THIRTIETH YEAR OF PUBLICATION +

WESTERN MINES LIMITED

PROD

GCNL MAY 16/77

THREE MONTHS ENDED MARCH 31,	1977	1976	3 MOS. TO MARCH 31,	1977	1976
Concentrate Revenue Less Treatment	\$4,050,541	\$4,246,121	Tons of Ore Milled	83,117	81,204
Production Expense	2,705,822	2,525,275	Ore Grades		
Administration Expense	69,500	99,101	Copper %	1.08	1.15
Depreciation & Amortization	362,962	341,594	Zinc %	7.08	8.10
Exploration	689,379	361,838	Lead %	1.26	1.50
Interest Earned	(105,466)	(99,923)	Gold oz.	0.08	0.10
Other Loss (Gain)	(337,892)	177,137	Silver oz.	4.25	5.66
Income and Mineral Taxes	163,000	671,104	Recoveries %		
Net Earnings	\$503,236	\$169,995	Copper	77.82	78.58
Earnings Per Share	9¢	3¢	Zinc	81.47	81.78
Cash Flow Per Share	14¢	8¢	Lead	79.57	82.50
Working Capital	\$12,436,885	\$11,062,189	Aver. Quoted Metal Prices (U.S. Dollars)		
FIRST QUARTER RESULTS - The report for the first			Copper	66¢	57¢
quarter of 1977 of Western			Zinc	37¢	37¢
			Lead	30¢	16¢

Mines Limited shows that the improvement in earnings in 1977 compared to 1976 is largely attributable to the decline in the value of the Canadian dollar.

Tonnage milled averaged 945 tons per operating day compared to 892 tons per operating day in the first quarter of 1976. Lateral and vertical development driven in the quarter was 3,097 feet (2,654 feet in 1976) and 1,230 feet (1,087 feet in 1976) respectively, and 14,778 feet of diamond drilling (11,419 feet in 1976) was also completed in support of the company's policy to further increase the level of mine development and exploration. The increase in tonnage milled was partially offset by a decline in the grade of ore milled, which situation should be corrected in the remaining three quarters of the year.

About exploration, the report states the continuing drilling program on the Great Slave Reef Project has delineated additional reserves on the X-25 deposit and located further significant intersections of lead-zinc mineralization on the west of this ore zone which will require further followup work. On the adjacent West Reef Project, the position of the main hinge zone, or reef line, has been located through reconnaissance drilling at the approximate position and depth anticipated. Overburden drilling immediately south of the Key Lake discovery on the Costigan uranium property in Saskatchewan, which is being explored in terms of a joint venture with Scurry-Rainbow Oil, has confirmed the presence of the significant uranium geochemical anomaly discovered in the 1976 summer program. Other uranium properties are being prepared for the 1977 summer program.

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NO.39(1977)  
FEBRUARY 24, 1977

## George Cross News Letter

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NO.39(1977)  
FEBRUARY 24, 1977

### WESTERN CANADIAN INVESTMENTS WESTERN MINES LTD.

YEAR ENDED DECEMBER 31,	1976	1975	YEAR ENDED DEC.31,	1976	1975
Concentr. Revenue Less			Tons of Ore Milled	296,846	287,393
Treatm. & Marketing Chrgs.	\$15,655,679	\$14,595,706	Tons Per Day	933	884
Production Costs	10,113,320	8,635,772	ORE GRADES		
Administration	481,377	630,721	Copper %	1.19	1.12
Writeoffs	1,533,473	1,919,154	Zinc %	7.73	7.59
Exploration	3,034,990	1,544,927	Lead %	1.42	1.42
Interest & Other Income	(503,390)	(910,042)	Gold, oz.	0.09	0.08
Earnings Before Taxes	995,909	2,775,174	Silver, oz.	4.94	4.49
Income & Mining Taxes:			RECOVERIES		
Current	1,058,000	2,387,000	Copper %	78.30	78.10
Deferred	(381,000)	(276,000)	Zinc %	82.00	82.60
Net Earnings	318,909	664,174	Lead %	81.10	80.90
Earnings Per Share	6¢	13¢	CONCENTRATE GRADES		
Cash Flow Per Share	39¢	44¢	Copper %	27.70	28.30
Dividend Per Share	10¢	40¢	Zinc %	52.90	52.40
Shs.Outst.Less Repurchased	5,328,938	5,213,566	Lead %	42.90	43.50
Working Capital	\$11,945,019	\$10,759,351			

Net tax expenses of Western Mines Ltd. during the year ended 31Dec76 showed a decrease in the effective rate from 76% to 68%, compared with the previous year. The mine operating costs increased from \$30.04 per ton in 1975 to \$34.07 per ton in 1976, reflecting inflationary pressures, a higher percentage of ore mined from underground and a higher rate of mine exploration and development. The preliminary annual report to shareholders discloses outside exploration costs were up from \$1,554,927 to \$3,034,990 which includes \$273,000 on the Price Creek property adjacent to the Myra and Lynx mines and \$580,500 on mineral properties purchased from Brascan Resources Limited for 89,722 shares.

About the production from the mine on Buttle Lake, Vancouver Island, B.C., the report states that the percentage of ore mined from underground increased once again from 81.8% in 1975 to 91.4% in 1976. On the Lynx and Myra mines horizontal development and diamond drilling were increased by 38% and 73% respectively over the 1975 level and vertical development was maintained at the 1975 level.

Copper concentrate production totalled 9,934 tons (8,877 in 1975), zinc concentrates 35,604 tons (34,416 in 1975) and lead concentrates 7,981 tons (7,613 in 1975). Payable silver and gold contained in the concentrates were 1,068,315 oz. and 17,382 oz. respectively (958,187 oz. and 16,521 oz. in 1975). In 1976, 41% of revenue was attributable to zinc and 37% to precious metals.

Ore reserves at the Myra and Lynx mines declined by only 27,300 tons in the year and now stand at 1,704,000 tons. Grade of the reserves remains virtually unchanged. In addition there are 54,900 tons of possible reserves indicated by drilling.

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## George Cross News Letter

"Reliable Reporting"

NO.220 (1976)  
NOVEMBER 16,1976

WESTERN CANADIAN INVESTMENTS

### WESTERN MINES LIMITED

<u>Nine Months Ended Sept.30,</u>	<u>1976</u>	<u>1975</u>
Concentrate Revenue - Net	\$11,661,601	\$11,201,115
Production Expenses	7,562,266	6,201,614
Administration	366,945	382,875
Depreciation	1,119,668	1,301,712
Exploration	1,986,793	1,319,685
Interest & Other Income	(384,488)	(603,300)
Gain(Loss) on Asset Sale	43,066	(7,144)
Exchange Loss, etc.	262,237	
Earnings Before Taxes	705,114	2,605,683
B.C.Taxes	504,000	1,394,840
Income Taxes	157,000	828,615
Net Earnings	\$ 44,114	\$ 382,228
Earnings Per Share	1¢	7¢
Cash Flow Per Share	25¢	28¢
Working Capital	\$11,753,764	\$11,944,189

Hugh R.Snyder, president of Western Mines Limited, states in the report for the nine months ended Sept.30,1976, that the most significant factors causing the drop in earnings are: an increase in outside exploration cost of 50%, which includes the acquisition of mineral properties and exploration costs associated therewith, together with the expanded program on the Great Slave Reef project, and an increase in production costs of 22%, largely accounted for by the accelerated mine development and exploration program initiated at the beginning of the year. He notes that the cash flow from operations remains essentially

unchanged: \$1,339,001 or 25¢ per share compared to \$1,474,502 or 28¢ per share in 1975.

Tons of ore milled in the third quarter were 60,178, compared to 64,456 tons in the like quarter of 1975. The mine was shut down for a three week vacation period in July and the mill treated 926 tons per operating day during the quarter compared to 895 per operating day in third quarter 1975. Lateral development of 2,285 feet and diamond drilling of 8,806 feet in the quarter represent increases of 38% and 208% respectively over the like period in 1975. (For a review of the company's other activities see GCNL No.218, Nov.15,1976)

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NO.220(1976)  
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## George Cross News Letter

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NO. 218 (1976)  
NOVEMBER 15, 1976

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NOVEMBER 15, 1976

WESTERN CANADIAN INVESTMENTS

### WESTERN MINES LTD.

+ Many Phased Aggressive Exploration Program Now Underway And to Accelerate In 1977

+ Major Targets In Buttle Lake Lynx Mine Added to Pine Point, Costigan and Other Programs

Western Mines Ltd. currently has a number of interesting projects underway. The variety and stage of development of these were reviewed in some detail during a recent visit to the company's source of revenue, cash flow and net profits - the Lynx, Myra and Price mines located at the south end of Buttle Lake, 70 miles southwest of Campbell River, central Vancouver Island, B.C.

In summary Hugh R. Snyder, president and chief executive officer of Western Mines, said the projects can be listed in order of importance or size of exploration budget allocation as the Buttle Lake Mines \$1,700,000, double from last year, including necessary mine development and a total outside exploration budget of \$1,500,000. The outside exploration budget includes: Great Slave Reef project Pine Point, N.W.T. \$500,000; Eastern exploration projects \$500,000 - including the Costigan uranium property which is considered a prime drill target, the Baker Lake uranium group also with a good target. The Yava joint venture is part of the companies western exploration program and covers a number of good prospects in the area of the Bathurst Norsemine Ltd. property, N.W.T. There are a number of other projects such as the Kuroko property in California, the Sheba property in the Highland Valley and the constant search for low cost, new exploration projects which can be taken under option on reasonable terms and tested with vigorous drilling programs.

With all of these programs underway, the company still has as its primary objective the acquisition or development of an alternative source of cash flow and profits. The president explains that, at the current rate of production at Buttle Lake (approximately 300,000 tons per year), the mine ore reserves of 1,800,000 tons will support the operation for about six years. The possibility of adding to ore reserves is good but the profit margin is under pressure from increasing costs and low metal prices. During the mine life the company must find, buy or develop a new source of cash flow which will support a long term, on-going exploration program. The search for such an acquisition is progressing with many possibilities being examined. At present, two possible acquisitions are receiving active preliminary stage study. An accelerated rate of activity is planned for this acquisition activity. The timing of such an acquisition is impossible to estimate but the pace of the search is increasing. Brascan Resources management is working in cooperation with Western staff in the search for an acquisition.

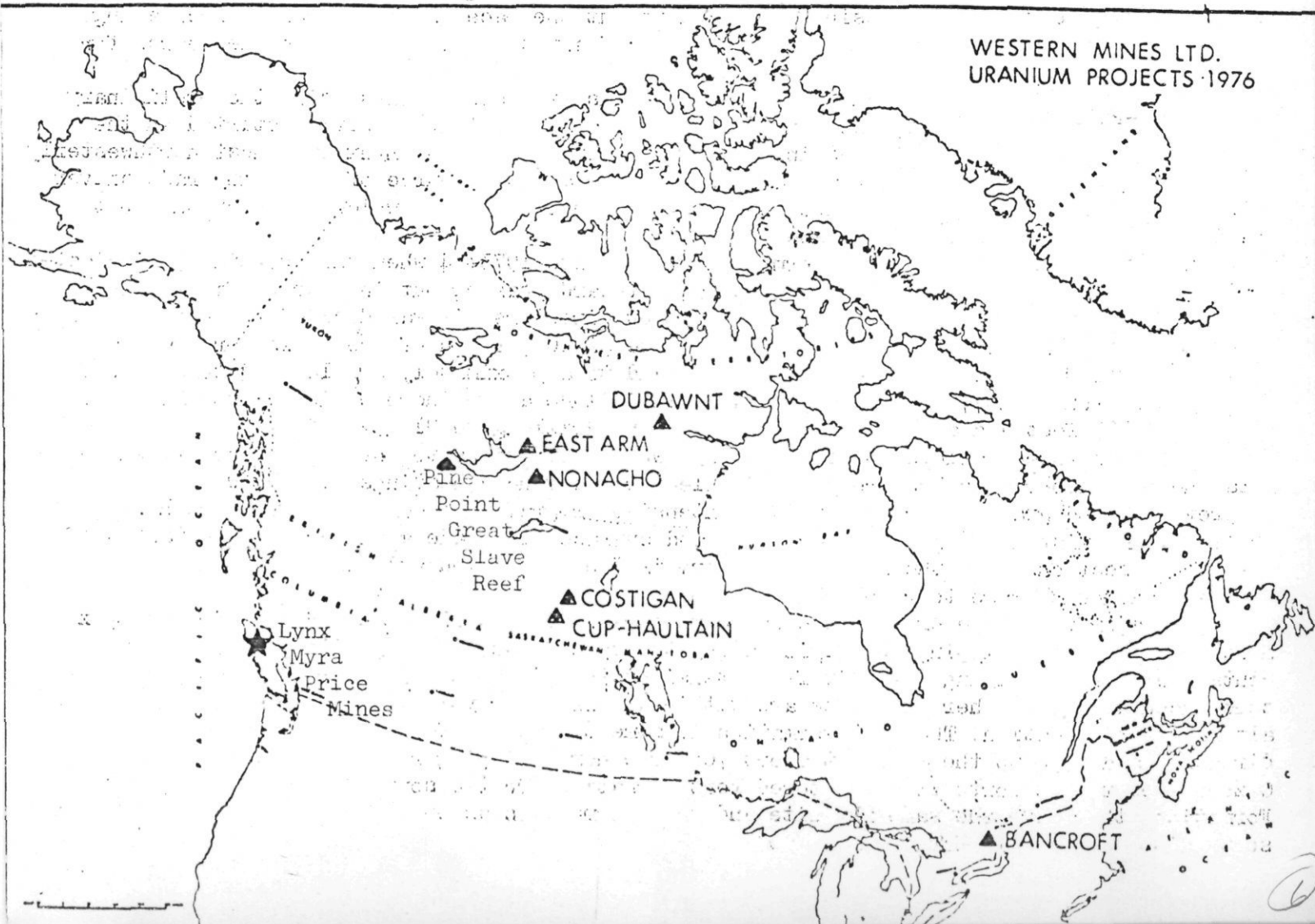
92F  
LYNX - MYRA - PRICE MINES - The Buttle Lake operations of Western Mines, since the preliminary exploration days in the early 1960's (production started in the spring of 1967), have been divided into three separate mines: the Lynx, the most northwesterly and the largest producer, the Myra, the central mine and the source of the high grade silver gold-copper-zinc ores, and the Price, the most southeasterly mine which has been the most remote and the least explored to date.

Exploration was reduced from normal levels in late 1973-74 when the NDP Bill 31 indicated that the operation should be on a salvage basis toward phasing out in four or five years. With the current improved legislation and the new directors, it was decided to increase mine development and exploration expenditures from the \$2.00 per ton of ore milled or \$600,000 in 1975, to \$3.00 per ton or \$900,000 in 1976 and to approximately double this to \$1,700,000 or \$5.15 per ton in 1977. The 1977 program will include a 20% increase in horizontal development to 12,195 feet and a 100% increase in diamond drilling to 81,000 feet.

There are three targets for this current work. extensions to the high grade ore in the Myra where a number of holes are to be drilled from advanced headings as follow up on a number of previous good grade intersections, an extensive program in the Price zone where holes drilled from existing workings underground and surface have made a number of important ore grade intersections, and the Lynx where there is the most immediate target for adding substantial new tonnage to reserves.

The majority of the ore to date has come from what is called the "G" zone in the Lynx mine and is a north dipping body lying along the upper side of a rhyolite flow along its contact with an overlying lithic tuff. Extensions to this zone are under exploration with some encouragement. Other ore zones are within an erratic rhyolitic rock in the highly altered Vent Formation. The Vent Formation is some 600 to 800 feet wide in a north-south direction and dips to the south at about 70°. The north dipping rhyolite containing the G zone lies to the north of the altered Vent Formation. To the south of the altered Vent Formation, there are the same rhyolite and tuff formations as on the north but they are south dipping. (CONTINUED ON PAGE TWO)

WESTERN MINES LTD.  
URANIUM PROJECTS 1976



WESTERN MINES LTD.

CONTINUED FROM PAGE ONE - Until very recently there has been no ore discovered in these south-dipping formations to the south of the altered Vent Formation.

By refining some geological theories, drilling a deep hole from surface and considerable follow up underground work, a new "S" zone has been partially explored over a 600 foot length, a 200 foot depth and a 20 foot width. This zone is open to considerable extension and in itself holds a significant tonnage potential. Recent work has indicated 200,000 to 300,000 new tons and, if the zone develops as the G zone did, a total tonnage of three to four times this is possible. The current program of drifting and drilling will test this potential.

A further important feature of the S zone is that work to date suggests a grade in the range of 1.5% to 2% copper and 10% zinc which is quite an increase over the current Lynx mine grade of 1.0 - 1.2% copper and 7-8% zinc. Mr. Synder points out that it is too early to put a firm grade to the ore but early indications are good.

At least as important as the discovery of the S zone itself is the overall potential it has opened up for the discovery of other new zones in the south dipping layers of rhyolite to the south of the altered Vent Formation.

**PRODUCTION - RECOVERY AND PLANT** - The concentrator was originally designed for 750 tons per day capacity with a high grade circuit installed in 1972-73 to bring designed capacity to 850 tons per day. The plant currently operates at 925 tons per day, on a 7 days a week basis with a 32 man crew. The total mine crew is 300 persons. Because of the high-grade silver ore from the Myra mine and the fact that three concentrates - zinc, copper and lead are produced, the mill circuits are more complex than a single product mine. The limits on production are factors of coarse and fine ore storage, thickener capacity and concentrate storage. Any expansion of concentrator capacity would only be considered at a time that substantial new and good grade ore reserves have been established in the proven classification.

TABLE OF METAL RECOVERY AND DISTRIBUTION

MILL FEED ORE	100%	100%	100%	100%	100%
	Gold	Silver	Copper	Lead	Zinc
Copper Concentrate	35-40%	35-40%	70%	8%	4%
Lead Concentrate	35-40%	35-40%	10%	80%	10%
Zinc Concentrate	10-12%	10%	7%	7%	81%
Tailings	8-10%	10%	5%	5%	5%

Copper concentrates are sold to Japanese smelters, lead concentrates to Cominco at Trail, and zinc is sold to Bunker Hill with some shipments having been made to India and Japan. When considering the mine operations over the years two sets of statistics emerge. First, the mine started

production with proven reserves of 1,300,000 tons; total mine production has been in excess of 3,000,000 tons of ore and current ore reserves are conservatively 1,800,000 tons (and if current indications are realized - growing). The second is that in the ten years the mine has operated, funds have been generated to pay: \$11,000,000 production debt; \$9,000,000 in dividends to common shareholders, \$4,000,000 in outside exploration, and to accumulate \$11,000,000 in net free current working capital.

GREAT SLAVE REEF - WEST REEF - PINE POINT N.W.T.

The Great Slave Reef project is an effective 55% Western Mines - 45% DuPont of Canada

joint venture covering approximately 12 miles of favourable structure to the west of Pine Point Mines and west of the Buffalo River, N.W.T. The West Reef is a 50-50 joint venture with DuPont of Canada and covers a further 14 miles to the west of the Great Slave Reef land. Each of the Great Slave Reef claim block and the West Reef claim block covers the western continuation of the South, Main and North Hinge Zones of the Presquille dolomitic limestone reef which is host formation for the 40 or 41 ore bodies discovered and partially explored in this area to date. Work in 1975 and until mid-summer of 1976 discovered one orebody with between 2,500,000 and 3,000,000 tons of reserves, drill indicated grading 16% combined lead-zinc. The program also located a number of other targets in the process of drilling the series of fences of holes which were driven to pin point the depth and position of the Hinge zones. These holes are considered threshold holes in that they cut mineralization and rock types typical of those on the fringe of Pine Point ore bodies. Additionally induced polarization survey work, rock geochemical analysis and detailed geological studies have pointed out four sharp anomalies all within 1 to 1½ miles of the initial discovery. They are considered prime Pine Point targets and will be tested in detail in the \$1,000,000 program of diamond drilling which will be carried out in the winter of 1976-77 which is to start in the next few days.

The objective of the current season's program is to establish reserves in the range of 4,000,000 - 5,000,000 tons which is considered the minimum tonnage necessary to justify a separate mining operation in the area. At the same time, the companies have provided an additional \$300,000 for a project study to determine the various other power and transportation features for an operation including some \$150,000 for a water pump test.

**TWO URANIUM DRILL PROGRAMS** - The Costigan property in Saskatchewan is held 25% by Western, 25% by Scurry Rainbow and 50% by the Saskatchewan Government

and covers 42,000 acres in nine claim blocks. It is located 150 miles north of Lac LaRonge and covers a 15 mile strike length of the formation hosting the Inexco Key Lake discoveries. The 1976 program consisted of float prospecting, geochemical surveys, geological mapping and geophysical surveys in an effort to locate the favourable geological horizons in the bedrock. This work delineated a large geochemical anomaly (CONTINUED ON PAGE THREE)

BRITISH COLUMBIA PACKERS LIMITED

40 WEEKS ENDED	Oct. 3/76	Oct. 5/75	Oct. 6/74	R.I. Nelson, chairman & chief executive officer of B.C. Packers Ltd., states in the interim report that in 1975, landings were unusually low in those fisheries in which the company is active. To place 1976 figures in perspective, the figures shown in this report include results for 1974 as well - a year of more normal activity.
Sales	\$131,811,000	\$108,138,000	\$121,248,000	Sales for the 40 weeks increased 22% & 9% over similar periods in 1975 & 1974 respectively.
Cost of Sales	121,063,000	102,596,000	111,652,000	As anticipated, salmon landings in B.C. this season were below average - 110 million lbs. compared with 10-year average of 145 million lbs. - but were well above 80 million lbs. landed in 1975. As a result of these low landings & excessive processing capacity, intense buying competition has escalated raw fish prices and diminished processing margins.
Depreciation	2,607,000	2,636,000	2,492,000	
Interest Expense	3,013,000	3,277,000	3,643,000	
Oper. Income (Loss)	5,128,000	(371,000)	3,461,000	
Fixed Asset Sale Gain	1,181,000	3,000	-	
Inc. Taxes (Recovered)	2,735,000	(193,000)	1,455,000	
Share of Loss of United Oilseed Products Ltd.	800,000	-	-	
Extraordinary Item	285,000	-	-	
Net Income (Loss)	\$3,059,000	\$(175,000)	\$2,006,000	
Per Share	\$5.14	(30¢)	\$3.37	

The company's operations in Atlantic Provinces have been maintained under difficult circumstances. Because of diminishing resource availability combined with new regulations which are incompatible with certain of the company's investments in the region, operations are being reorganized to adjust quickly to these changing conditions.

The company's U.S. subsidiaries have, in total, continued to show improved results over 1975. The salmon run in Bristol Bay was fairly good & a successful operation has been concluded for this season.

United Oilseed Products Ltd. which operates a rapeseed crushing mill at Lloydminster, Alta., & in which the co. has a 1/3 equity interest, suffered a loss during its first fiscal year ended 31 Jul 76. While the world market for edible oils continues to be weak, it is anticipated that results for their current fiscal year ending July 1977 will be substantially improved.

The company has taken a 30% interest in Mar Fishing Co., Inc. which has been formed to explore the tuna fishery in waters adjacent to Philippine Islands. Two freezer vessels have been acquired to purchase tuna from local fishermen, & if the resource proves to be adequate, it is intended to construct a processing plant in the Philippines.

WESTERN MINES LTD.

CONTINUED FROM PAGE TWO - The anomaly has high water and lake bottom readings which are coincident in part with anomalous nickel and copper readings. Electromagnetic survey work over the area also located an anomalous area. Drilling is planned for early 1977.

The Dubawnt, N.W.T. property is 100% Western Mines and covers 500,000 acres in three permits located 100 miles northwest of Baker Lake. Prospecting and ground radiometric surveys located several radioactive areas. The geological formation includes a favourable regolith in the vicinity of which the anomalous areas have been located by lake bottom sampling.

ADDITIONAL PROPERTY INTERESTS - Western Mines also has interests in four other uranium properties and it is intended to proceed with the current negotiations toward a joint venture farmout with a foreign uranium buyer, covering all of the properties, including Costigan and Dubawnt. The other uranium prospects held by Western are: -two groups, one of 50,000 acres and the other of 27,150 acres, in the Sandily Lake area of Saskatchewan and shared with Thor, Noranda, Brascan and the Saskatchewan Government. Western holds 15 and 20% interest. Drilling on these groups located 321,000 tons grading 1.84 pounds U3O8 per ton which are considered sub-commercial.

A block of 14,000 acres in four groups at Haultain-Cup Lake, 100 miles northwest of Lac LaRonge, Saskatchewan, where a 100% interest is held. The property covers areas of carbonate horizons in metasediments containing high uranium content. The 1976 program included geological mapping, sampling of the showings, trenching, soil and gas geochemical survey work.

Honacho-East Arm of Great Slave Lake, N.W.T., covers favourable geology and a high anomalous area located by an airborne survey. Western holds a 100% interest in six claim blocks. There are a number of showings of copper and uranium. The 1976 program included lake bottom, stream and soil sampling, along with prospecting and reconnaissance work.

In the Paraday Mine area near Bancroft, Ontario, the company holds a 100% interest in 46 claims. Geochemical sampling has defined an area of interest that will receive further study in 1977.

YAVA JOINT VENTURE - Western Mines and Brascan Resources can earn up to 66 2/3% interest in 732 claims located 330 miles northeast of Yellowknife, N.W.T., adjoining to the southwest of the Bathurst Horsemines property where geophysical and geochemical surveys have located a number of targets on a geological setting similar to the Bathurst Horsemines orebody. The partners in the venture are Brascan, Conwest and S. Roscoe.

KUROKO PROGRAM, NORTHERN CALIFORNIA - The property under option in northern California has a small tonnage of semi-proven highgrade gold-silver-copper-lead-zinc mineralization which is open to possible extension and will be further explored in 1977.

CONSOLIDATED KALCO VALLEY MINES LTD.

ONE GRAPEMOLYBDENUM CUT IN DRILL HOLE - Consolidated Kalco Valley Mines Ltd. has reported that KV No. 3 on the property near Keremeos, B.C. cut 300 ft. grading 0.107% MOS2, including 80 ft. of 0.162% MOS2 and 10 ft. of 0.34% MOS2. Drilling is continuing

Prod. File

**Myra Lynx  
WESTERN MINES LIMITED**

Vanc. Is  
GCNL #105 (June 2<sup>nd</sup>, 1976)

"Had the Federal and Provincial governments intended to terminate all exploration and development expenditures in B.C., it is unlikely that together they would have conceived a more effective series of measures and positions than those enacted and assumed in 1974/75. The effect of this legislation is still being experienced with an effective tax rate in the current year of 80%."

In stating the above to the annual meeting of Western Mines Ltd., Hugh R. Snyder, president, said that though the operating income earned in 1975 was the third best achieved by the company, taxes payable to the Federal and Provincial governments totalled \$2.1 million - an effective rate of 76% - which, allied with higher exploration costs reduced this to the poorest year since the commencement of operations at Buttle Lake.

At present the mine is drawing ore grade from reserves and this is expected to continue for the foreseeable future. The tonnage milled is also expected to stabilize at the present level. With increased exploration and development in the mine operating costs are expected to increase from the \$30 per ton in 1975 to \$35 per ton.

Mr. Snyder said 1976 has started well - earnings are ahead of budget and 1975 results; the budget costs have been met and revenue has been higher reflecting improving metal prices; with taxation as it presently stands and with the exploration programmes planned for the future growth of the company, he anticipates a final earnings performance similar to last year.

About the company's function and government involvement Mr. Snyder stated, "the function of the company is to locate, develop and produce raw materials for industry in the most efficient and competitive way possible.....Some would transfer this responsibility..... into the hands of government. Others seek to reduce profit-

ability to an untenable level. However, the very accountability of the free enterprise system of the management of the company to the board and of the board to you, the shareholders, ensures the most efficient development of raw material resources; it ensures for Canada a competitive source of raw material; it contributes substantially - more than 30% to Canada's exports and it provides employment directly and indirectly for 9% of the work force. Remove the accountability and the discipline and competitive edge of the industry will be lost, the ability of the industry to explore for and develop new or alternative sources of raw material will be impaired and even worse, its ability to replace existing facilities and ore reserves will be severely restricted. The public image of the industry remains poor and this affects our ability to perform effectively in many ways, not the least of which is our ability to attract young talent into the industry. There is a new responsibility here for management in the mining industry and shareholders to better communicate to the public the constructive and dynamic role played by our industry in the Canadian economy and the dynamic role played by profitability in keeping the industry viable and competitive.

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# WESTERN MINES LIMITED

**GREAT SLAVE REEF PROJECT** - Phase III of the Great Slave Reef project, a joint venture between Western Mines Limited and DuPont of Canada Exploration Limited, has only just commenced and results obtained to date have indicated the presence of at least one zone of mineralization which has the potential to yield a production decision. The Western Mines Ltd. annual report states that the phase III of the project is to consist of fill-in drilling at 100 -200 foot centres to test the disposition, grade and extent of an ore occurrence indicated by significant intersections obtained in the phase II of the program.

The Western Mines annual report states, "Some 70,000,000 tons of ore grading 10% combined lead-zinc have been discovered on Pine Point Mines Limited's property in the N.W.T. This ore is located in dolomitized reefal structures which are coincident with fracture or hinge zones over a 25 mile strike length."

Western and DuPont staked 2,631 claims covering 26 miles of strike length covering the western extension of the Pine Point lead-zinc district. The favourable horizon on the Western-DuPont claims is projected at 550 to 900 feet below surface, beyond the limit of geophysical detection. The report explains that an intersection of 16 feet percent (eg. 8 ft. of rock assaying 2% metal) or more is regarded as significant and may indicate proximity to a major ore occurrence. To March 31, 1976, of the 40 holes drilled, nine had encountered significant mineralization, any of which could be located near a major ore occurrence.

The report continues, "It is probable that three parallel hinge zones occur and, if this is the case, a strike length of some 78 miles of favorable ground is available for evaluation. The current program has partially evaluated some 4 miles of the Main Hinge Zone, which is about 5% of the possible ore bearing ground. Future work will involve Phase III drilling of the mineralized centres now identified in the Main Hinge Zone and Phase I and Phase II drilling to evaluate the unexplored mineralized trends.

"Results to date have been exceptionally encouraging and an aggressive exploration program will be maintained on this ground. The 200 square miles now acquired by Western-DuPont on the Western extension of the Pine Point lead-zinc district provides excellent exploration potential for any operation which may be established in the area by the partners."

About the mine at Buttle Lake the president of Western Mines Ltd., Hugh R. Snyder, says the trend is to higher costs as the percentage of ore mined from underground now approaches 85%, up from 39% in 1970. Since the ore reserve position remains strong, future profitability will depend principally on metal prices and the ability to contain costs. Directors have approved an increase in mine development and exploration expenditures from \$2.27 per ton milled in 1975 to \$3.43 per ton in 1976.

Proven ore reserves are reported as at Jan.1, 1976, as 1,731,300 tons grading 0.09 oz. gold per ton, 4.2 oz. silver per ton, 1.2% copper, 1.2% lead, 7.9% zinc. In addition, there are 123,600 tons of possible ore reported.

The annual meeting will be held at 11.00 a.m., June 1, 1976, in the Devonshire Hotel, Vancouver. Financial results in 1975 were reviewed in GCNL 41(76).

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49 175 NW

92 F/NW

## WESTERN MINES LIMITED

<u>Quarter Ended March 31,</u>	<u>1976</u>	<u>1975</u>
Revenue	\$4,246,121	\$3,595,060
Production	2,525,275	2,031,736
Administration	99,101	122,235
Depreciation	341,594	433,699
Exploration	361,838	390,509
Interest Earned	(99,923)	(236,380)
Loss/(gain) on asset sale	1,421	(11,144)
Other Expenses(revenue)	175,716	(8,954)
Earnings Before Taxes	841,099	873,359
British Columbia Taxes	400,785	509,778
Federal Income Tax	270,319	294,015
Net Earnings	\$ 169,995	\$ 69,566
Earnings Per Share	3¢	1¢
Cash Flow Per Share	8¢	9¢
Working Capital	\$11,062,139	\$11,442,694

GCNL #95(1976) May 18<sup>th</sup>  
EFFECTIVE TAXATION RATE 80%

Tonnage milled averaged 892 tons per operating day for a total of 81,204 tons in the quarter compared to 848 tons per operating day and 76,307 tons in 1975. The Western Mines Limited report for the quarter ended March 31, 1976, states that lateral vertical development was up to 2,654 feet and 1,087 feet respectively compared to 1,916 feet and 796 feet in the like quarter in 1975 reflecting the company's policy to increase development in anticipation of a more favourable taxation climate in B.C.

GCNL #220 NOV. 18/75

## WESTERN MINES LIMITED

Nine Months Ended Sept. 30,	1975	1974
Revenue- net of smelting etc.	\$11,201,115	\$16,146,000
Production Costs	5,776,980	5,636,000
Administration-mine	424,634	433,220
-head office	419,364	183,820
-coal	69,232	- -
Depreciation & amortization	1,301,712	1,245,130
Exploration	1,213,964	804,770
Interest & Other Income	(610,454)	(703,360)
British Columbia Taxes-Royalties	724,841	1,000,000
Mining tax	333,348	927,290
Income Tax	336,651	875,150
Federal Canada Income Taxes	828,615	2,081,050
NET EARNINGS	\$ 382,228	\$3,662,930
Earnings Per Share	7¢	70¢
Working Capital Sept. 30	\$11,944,189	\$11,213,917
Tons of Ore Milled	217,741	225,876
Ore Grade-Copper	1.13%	1.30%
Zinc	7.42%	8.31%
Lead	1.40%	1.54%

Western Mines Ltd. has reported that lower copper prices, increased operating costs, an effective tax rate of 85% of profits, and increased exploration expenditures were primarily responsible for the decline in earnings for the comparable period.

The daily operating rate continues at the maximum permitted by the Pollution Control Board. The quarter production was lower than in the 1974 quarter owing to a two week holiday shutdown in July. The United Steel Workers of America at the mine have voted in favour of a two-year agreement.

Lateral and vertical development of 1,654 feet and 1,011 feet respectively was completed during the quarter at the Buttle Lake property. Based on a new interpretation of

a section of the Myra Creek Mine, a crosscut is presently being driven towards a block of ground where highgrade ore has been indicated. Intersection of the projected position of this inferred high grade zone should take place in the latter part of December.

GEORGE CROSS NEWS LETTER LTD. NO. 205 (1975) (Page Two)

OCTOBER 27, 1975

- Continued from page one -

WESTERN MINES LIMITED

About the Western Mine on Buttle Lake, Mr. Snyder pointed out that it is not a copper mine - it is a zinc and precious metal mine. Zinc accounts for 39% of the revenue and precious metals 40%. It is a difficult mine. Mining conditions are difficult, the geology is difficult and the metallurgy is difficult. Over 90% of current production is now from underground and 50% of the costs are for labour. The ore currently has a gross value of \$54.00 per ton and while current costs are \$27.50 per ton, the 1976 costs are projected at \$34.00 per ton. This is assuming a continuation of current production at 7 tons per man shift which is considered a good rate for a mine of the size and type of Western's. Ore reserves are high at 1,800,000 tons and the potential for finding additional mineralization of the same type and grade is excellent. The operating cash flow for the mine for 1976 is projected at between \$1,500,000 and \$3,000,000 anticipating some conservative metal price increases and perhaps an improvement in the current impossible tax structure.

mine chief warns:

# Solve tax squabble or we'll take action

Western Mines Ltd. president Bill Jewett has threatened drastic action unless federal and provincial governments solve their squabble over resources taxation.

Jewett said Wednesday the company could decide to take only high grade ore from the ground or close the mine in Buttle Lake on Vancouver Island.

He said the provincial government has to come up with better legislation than the present mineral royalties bill.

The mine produces ore containing copper, lead, zinc, gold and silver.

Mines minister Leo Nimsick said he doesn't believe the company will close the mine.

And Sandy Gage, United Steelworkers of America staff

representative, told the Colonist that Jewett's remarks do not appear to conform with comments made by mine manager James Magee recently in the Campbell River Upper Islander.

Magee told that newspaper neither lay-offs nor cutbacks were expected.

Asked Gage: "Who are the men in our local supposed to believe?"

Contacted Wednesday night by the Colonist, Magee said that of course any decision about future layoffs or cutbacks would be up to the company directors who are reviewing the situation.

Magee said there was no discrepancy between his earlier newspaper statements and the later statements issued by the company.

Unlike the Jordan River local of the United Steelworkers of America, the local at Western Mines has repeated its support of Bill 31, the provincial royalties bill.

In a letter to a Vancouver newspaper, John Hussey, president of the Western Mines local, has taken issue with Jordan River miners' president Ken Levy who laid blame for his mine's closure on Bill 31.

Said Hussey: "The miners in our local at Western Mines do not agree that the effects of Bill 31 closed Jordan River. We know that that mine has been a losing proposition for years."

"The mine has been closed five times in the recent past — before the NDP even came to power ...

"All B.C. miners are hurt when any mining operation shuts down and our members want to see everything possible done to keep bread on the tables of those who are out of work but in this case it's bad management practices not the government or the union that is to blame for the shutdown."

## Business briefs

# Mine eyes closure

The impact of royalties and the federal government's refusal to allow B.C. royalties as a deductible charge in calculating federal income taxes is forcing Western Mines Ltd. to consider whether it can carry on production at its Myra Creek mine on Vancouver Island.

The company issued a press release saying it was studying alternatives which range from a complete shut down, through limited operation on high-grade ore, to operation at normal rates and grades.

"The last alternative could be implemented only if the two governments arrive at some sensible solution of their controversy," said the company.

The conflict between government levels over royalties "results in no possible profit to the company," said the release.

It added that exploration and acquisition of new properties will be carried on outside B.C.

The company reported that in the nine months ended Sept. 30 it earned \$1.70 per share before taxes which became 53 cents per share after estimated provision for federal and provincial taxes and

properties. We expect to continue taking a conservative posture well into 1975," he said.

## WESTERN EYES SHUTDOWN OF MINE

Western Mines Ltd. said it is considering closing or cutting back operations at its Myra Creek lead-zinc mine on Vancouver Island.

The company blamed the federal-provincial resource revenue squabble for the possible cutback. Total possible taxes for both levels of government are estimated at \$2 to \$3 million a year. Western earned \$2.8 million for the first nine months of this year.

"Continued escalation in the cost of labor and supplies plus the drop in metal prices intensifies the company's difficulties," Western said.

A decision on the mine's future will be made in January, the company said.

COLONIST

DEC. 1974



# George Cross News Letter

NO. 160 (1974)  
AUGUST 16, 1974

"Reliable Reporting"

NO. 160(1974)  
AUGUST 16, 1974

## WESTERN CANADIAN INVESTMENTS

FIRST HALF		WESTERN MINES LIMITED		NET PROFIT CALCULATION BASED ON AN INDICATED COMBINED B.C. FEDERAL TAX RATE TOTTALLING 73% J.W. Jewitt, president of Western Mines, in reporting that before tax first half 1974 earnings per share were \$1.20 but were only 32¢ per share after estimated federal and prov- incial taxes, says this adverse result was based on an indicated combined effective tax rate of 73%. He points out that the B.C.
	1974		1973	
Net revenue	\$11,030,602	\$	6,879,670	
Cash flow	2,249,633		2,774,965	
Earnings Bef. Taxes	6,267,493		2,536,936	
Per Share	\$1.20		49¢	
Earnings Aft. Taxes	1,667,031		2,192,415	
Per Share	32¢		42¢	
Working Capital	\$8,938,989	\$	4,275,099	

government has established basic values for copper of 58¢ per pound, gold of \$82.50 per oz. and silver at \$3 per oz. No basic values have been set for lead, zinc or cadmium and, subject to revision later in the year, a conservative provision has been made for the amount payable under the Mineral Land Tax Act now in effect in B.C.

Mr. Jewitt says also that the share of a company's profit the two governments desire has not been clearly defined. If there is a confrontation between the two governments, the estimated profit could be substantially reduced. The statement of Western has been prepared on the basis that the federal government will allow deduction of provincial taxes and royalties in calculating federal income taxes.

The first half 1974 estimated after tax earnings were lower despite the fact that the average metal prices were the highest in history during the period. Tonnage milled was about 26% lower partly owing to control of the quality of the mill effluent, partly to a shorter working schedule necessitated by labor difficulties. Costs of all supplies and of labor increased.

Western continues its policy of meeting contract commitments on property in B.C. but scaling down other B.C. exploration activities. Drilling on the Granite Mountain property was suspended when the work commitments to 1976 were satisfied. Further work is planned on the Blue Jay copper-oxide property in Nevada.

In Alberta a hole drilled in Kneehill area encountered 50 ft. of favorable oil-bearing porosity and is expected to be productive. Two further wells drilled in Wood River area, Alberta, with Summit Resources Ltd. failed to attain production. In Montana drilling of the first 3 holes of a program 50-50 with Summit Resources is expected to start late in September.

Western reports cash flow of \$2,249,633 in first half 1974 and expenditures of \$1,496,337. The increase of \$753,296 brought working capital to \$8,938,989 up from \$8,185,693 at 1Jan74. Expenditures included \$1,042,323 for dividends vs \$781,592 in first half 1973; \$287,740 for fixed assets, \$160,224 deferred development and \$6,050 for investments.

## PROPERTY FILE

*Sun, Nov 7/74*

# Mine probe launched

Sun Staff Reporter

CAMPBELL RIVER — The provincial mines department began a special investigation into safety conditions at Western Mines Ltd. here today, following the third fatality there in the past five months.

Arthur Ryan, 28, was killed last Friday while investigating a blocked passage in the mine.

Two days later, union representatives from the United Steelworkers of America met chief mines inspector William Peck to demand an inquiry into conditions.

According to the Steelworkers, Peck promised that a joint committee of union, company and department officials will be authorized to make a thorough tour of the

mine and listen to information provided by the miners.

Local union president John Hussey said: "We know that an investigation of this type cannot help Arthur Ryan or the others who died before him, but we believe the best memorial to these men would be a well-policed mine where human life is valued above production."

*SUN,  
NOV 7/74*

PROPERTY FILE



W. G. JEWITT

*Pres. Western Mines*

## Taxes cut net profit of mine

Western Mines Ltd. has estimated earnings before taxes of \$8,863,983 for the nine months ended Sept. 30, 1974, up from \$4,948,005 a year earlier.

However, after provision for federal and provincial taxes of \$6,108,083, net earnings in the latest period were \$2,775,900, or 53 cents per share, down from \$4,300,861, or 83 cents per share in 1973 when estimated taxes were \$647,144.

Production revenue in the 1974 nine months was \$16,146,071, up from \$11,705,639 last year. The company milled 225,876 tons of ore against 274,113 tons in 1973.

W. G. Jewitt, president, said in the interim report it has been assumed that provincial royalties and taxes will be deductible in calculating federal income taxes, but this will not be clarified until the federal budget is presented on Monday.

He also noted that as the B.C. government has not yet set the basic value on which it will assess the royalty on zinc, lead and cadmium production, an estimate of this liability has been included in the 1974 tax provision.

*PROVINCE  
NOV. 15/74*



821 WEST HASTINGS ST.

VANCOUVER 1, B.C.  
683-7265  
(AREA CODE 604)

NO.222 (1974)  
NOVEMBER 15,1974

## George Cross News Letter

"Reliable Reporting"

WESTERN CANADIAN INVESTMENT

WESTERN MINES LIMITED

DEPARTMENT OF MINES AND PETROLEUM RESOURCES ECONOMICS & PLANNING DIVISION	COPYRIGHT ALL REPRODUCTION RIGHT RESERVED PUBLISHED DAILY SUBSCRIPTION RATE \$180.00 PER YEAR
NOV 18 1974	NO.222(1974) NOVEMBER 15,1974
RECEIVED & RECORDED	
BRITISH COLUMBIA	

Nine Months Ended Sept.30,	1974	1973
Net Revenue	\$16,146,071	\$11,705,639
Operating Costs - Net	7,282,088	6,757,634
Pre-Tax Earnings	8,863,983	4,948,005
Federal & B.C.Taxes	6,108,083	647,144
Net Earnings	\$2,755,900	\$4,300,861
Earnings Per Share	53¢	83¢
Shares Issued	5,211,616	5,210,616
<hr/>		
Tons Milled	225,876	274,113
Ore Grade: Copper	1.30%	1.36%
Zinc	8.31%	8.06%
Lead	1.54%	.95%

Comparative results of Western Mines Limited for the nine months to September 30,1974 and 1973 show tax provisions of some \$647,000 in 1973 being for B.C. mining tax and no income tax vs some \$6,108,000 in 1974 being B.C. mining tax plus income tax plus B.C. royalties. In presenting the figures, president W.G.Jewitt notes that the B.C. government have not yet set the basic value on which they will assess royalties on zinc, lead and cadmium production for application to

1974 production, but an estimate is included in the accounts. It has been assumed that provincial royalties and taxes will be deductible in calculating income taxes.

In the third quarter this year, concentrate revenue less treatment and marketing charges was \$5,115,469, tax provision was \$1,507,621 and net earnings were \$1,088,869 or 50¢ per share.

Mr.Jewitt reports that, in Nevada, oxide copper ore reserves at the Blue Jay property are now estimated at 5,000,000 tons grading 0.47% copper plus a potential 5,000,000 tons more. An onsite leaching operation is being investigated. In B.C., work has stopped in the Barriere Lake area pending an improvement in general conditions.

A dividend of 20¢ per share will be paid on Dec.10,1974, record Nov.26,1974.

## B.C. NEWS

Province  
Nov 27/74

# Employee suing for \$20,000

Canadian Press

CAMPBELL RIVER — A miner formerly employed by Western Mines near here is suing for more than \$20,000 in pay.

Bill Childs says the money represents about 19 months in wages and fringe benefits owing to him since he was dismissed on April 4, 1973.

The B.C. Supreme Court earlier ruled that he was unjustly fired from the company. The civil action for wages

is scheduled to be heard in Supreme Court Oct. 8, 1975.

The company argued that Childs was fired because his position of spare hoistman was no longer necessary and Childs was unable to perform other duties because of a foot injury.

But Mr. Justice Samuel Toy upheld an earlier decision by a three-member arbitration board that the redundancy of Child's job was insufficient cause for dismissal.

PROVINCE  
NOV 27/74

PROPERTY FILE

VAN. SUN. AUG 15/74

## Western net drops to \$1.6 million

Net six-month profits of Western Mines Limited amounted to \$1.6 million or 32 cents a share, compared with \$2.1 million or 42 cents a share for the same period in 1973.

Revenue rose to \$11 million, compared with \$6.8 million in 1973.

President W. G. Jewitt said, "the share of a company's profit the federal and provincial governments desire has not been clearly defined. In the event there is a confrontation between the governments, the estimated (six month) profit could be substantially reduced."

He also said that the company is continuing its policy of meeting contractual obligations on its B.C. properties "but scaling down other exploration activities" in the province.

Western trades on the Vancouver Stock Exchange at about \$2.75.

SUN,  
AUGUST 15/74

## PROPERTY FILE

Aug 28/74 Tim

## BUTTE DUMP END SOUGHT

CAMPBELL RIVER — The Pollution Control Board was requested Tuesday to put an end to the dumping of mine tailings in Strathcona Park's Buttle Lake.

Jim Boulding, director of the Strathcona Outdoor Education Centre, in a submission to the board, said water quality at the dumping site on the lake, has decreased to the extent that fish no longer frequent the area.

"There has also been a noticeable change in fish behavior in the lake," he said.

Western Mines, operators of a copper mine at the south end of the lake is appealing an order of pollution control director William Venables to upgrade its effluent discharge system.

The company claims the tailings and minute traces of chemicals in the mine slurry is doing no harm to the water.

The dumping of tailings has been a controversial issue ever since the Social Credit Government granted the company permission to operate in the park.

Buttle Lake, which is connected to Campbell Lake, is Campbell River's source of water supply.

Boulding noted that Western Mines is in the most accessible and heavily-used section of the park.

TIMES

AUGUST 28/74

## WESTERN MINES LIMITED

### COMPANY HALTS B.C. EXPLORATION NO QUARTERLY REPORT TO BE ISSUED

- In previous years a short statement has been issued covering operations for the first three months of the year, including estimated earnings, supplemented by a short report from the President at the Annual General Meeting. This procedure has been rendered meaningless by the taxation policies of the B.C. Provincial Government, as exemplified in Bill 31, together with the attitude of the Federal Government towards the mining industry, as shown in their recent budget proposals would result in Western Mines paying more than 100% of its profit in taxes.

Such an obviously impossible situation would be humorous if it were not at the same time tragic - tragic because, as I said some time ago, it demonstrates abysmal ignorance on the part of both Governments of the factors necessary for the maintenance of a healthy mining industry. These factors are varied but probably the most important is the provision of large sums of money to be expended on exploration, not only in the search for new mines but also in the maintenance and expansion of ore reserves at existing mines. In the present circumstances it will be impossible to make any such provision.

In view of this situation it obviously would be unwise to continue an active exploration policy in B.C. The exploration properties Western now own or hold under option will be placed on a maintenance basis pending a change in government or a fundamental change in attitude on the part of the present governments. Exploration activities will be diverted to areas where taxation policies appear to encourage the mining entrepreneur, as in the U.S.A.

The company has two projects in the U.S.A. One is the Blue Jay oxide deposit in Nevada where two companies experienced in "in situ" mining have expressed interest in participating. The second is an oil exploration venture in Montana in participation with Summit Resources.

W.G. Jewitt told the meeting that production continues at a reduced rate at the mine owing chiefly to the difficulty of staying within the limits set by the pollution control permit. NO. 95 (MAY 14, 1974) Owned, published and copyrighted by GEORGE CROSS NEWS LETTER LTD.

GEORGE CROSS, MAY 14/74

30 The VANCOUVER SUN, Tues., May 14, 1974

## Western head hits taxation policies

Government attitudes made it meaningless for Western Mines Limited of Vancouver to issue a quarterly report, company president W. H. G. Jewitt told the annual meeting Monday.

(Western becomes the second Vancouver-based mining company not to issue a quarterly financial report. Bethlehem Copper Corporation Ltd. was the first one.)

"In previous years a short statement has been issued covering operations for the first three months of the year, including estimated earnings, supplemented by a short report from the president at the general meeting.

"This procedure has been rendered meaningless by the taxation policies of the British Columbia provincial government, as exemplified in Bill 31 (the mining royalties legislation), together with the attitude of the federal government towards the mining industry, as shown in their recent budget proposals. Taken together, these taxation proposals would result in Western Mines paying more than 100

per cent of its profit in taxes."

The proposed federal budget would not have allowed the deduction of mineral royalties from federal taxes).

The moves by the federal and B.C. government demonstrate an "abysmal ignorance" on the part of both governments in that they do not understand what mining is all about.

He also said that Western will not continue an active exploration policy in B.C. "The exploration properties we now own or hold under option will be placed on a maintenance basis pending a change in government or a fundamental change in attitude on the part of the present governments. Our exploration activities will be diverted to areas where taxation policies appear to encourage the mining entrepreneur."

Jewitt said the company has two "promising" projects under consideration in the United States.

Western trades on the Vancouver Stock Exchange at \$2.90 to \$3.

SUN  
MAY 14/74

PROPERTY FILE



Sun May 15/74

## Tax debate informative

Polemics engendered in B.C. by the provincial and federal governments' proposals to increase tax yields from the mining industry have for the layman anyway one positive aspect. Through the industry's vigorous public relations campaign to make known its viewpoint he can learn a great deal about the expanding role of mining in the Canadian economy that otherwise would probably have escaped his attention.

On one day this week in Vancouver, for instance, we had a trio of happenings that reflect three basic aspects of the Canadian mining industry's situation: its growth; the rising international demand for its products; the counter-productive effects of governmental tax policies.

The Vancouver Board of Trade on Monday heard some statements from Clifford Grandison, investment manager for Placer Development Ltd., that will come as eye-openers to most of the general public. Recent mining developments in B.C., he is reported as saying, have been featured by great expansion in copper mining, a recovery in the molybdenum market and vastly increased production and higher prices for coal. Canadian copper production, according to Grandison, now "rivals" that of Zambia and Chile. This is major league indeed — Chile and Peru in Latin America, Zaire and Zambia in Africa provide 70 per cent of the world's copper exports.

Growing overseas demand for B.C. coal was demonstrated by an announcement from Kaiser Resources Ltd. Company president Edgar F. Kaiser Jr., who reported a substantial price increase for sales of coking coal to Japan. Mr. Kaiser also said agreement in principle has been reached with the Japanese for plans involving two expansions at the company's mining operations near Fernie.

Discussing governmental taxation policies, shareholders at the annual meeting of Western Mines Ltd. were told by their directors that if both the provincial and federal tax proposals are activated the company would have to pay more than 100 per cent of its profit in taxes.

Hyperbole aside, the mining industry in this province has produced enough sufficiently convincing arithmetic to warrant, on both levels of government, at least a serious reconsideration of the proposed tax measures.

PROPERTY FILE

SUN,

MAY 15/74

Prov April 15/74 P. 2

# B.C. Research finds mine's hands clean

B.C. Research has concluded a survey of water quality in Buttle Lake on Vancouver Island, with the conclusion that a tailings outflow from Western Mines Ltd. has no detrimental effect.

The report, prepared on behalf of the Pollution Control Branch of B.C. states that water draining out of the lake and into Upper Campbell Lake is superior in quality to acceptable limits set out in the Canadian Drinking Water Standards.

The drinking water of Campbell River originates in Buttle Lake and there was protest from the community when Western Mines first declared its tailings disposal plan.

B.C. research states that water quality in the lake itself surpasses suggested standards for aquatic life and that this is true of water sampled close to the tailings outfall.

Western Mines' copper-zinc property is at the south end of Buttle Lake. Ore is milled and concentrated at Myra Creek, which drains into the lake.

Tailings from the concentrator flow through a 32-inch pipe to be discharged at a depth of 80 feet into the lake, the tail of the pipe being suspended from an anchored raft posi-

tioned half a mile away from the mouth of Myra Creek.

Heavy material discharging from the pipe falls to the bed of a lake, at a depth of between 100 and 150 feet.

Under the terms of the permit granted the mine by the pollution control branch, it can discharge up to 720,000 gallons of effluent a day into the lake.

Tests run by B.C. Research included the sampling of lake waters at different depths and locations.

The investigation also covered the measuring of heavy metal concentrations in the tissue of fish taken from the lake.

The zinc concentration in fish livers has not changed since before the concentrator on Myra Creek was started up in December, 1966, although copper concentrations have increased since tailings started to enter the lake.

However, despite a significant increase in copper concentrations, the values found fall below those reported from other lakes on Vancouver Island where no mining activity is present.

B.C. Research says that lead concentrations in fish livers rose significantly between 1969 and 1971 and then increased again in 1972.

Tests with rainbow trout showed that the fish could survive exposure to effluent for 96 hours if flocculents were added to sink suspended material to the floor of the test tank.

According to B.C. Research, there is disagreement between data amassed separately by Western Mines and by the pollution control branch.

Branch findings show that the tailings flow exceeded the required ratio of solid matter to fluid nearly three-quarters of the time. Monitoring by Western Mines showed that the solids level was within prescribed limits, but its testing technique varied from that used by the branch.

Mean values for dissolved copper, chromium and zinc in the tailings stream were judged within desired limits, although some individual samples exceeded the set levels.

Sampling showed that dissolved copper concentrations were in excess of limits 70 per cent of the time and that both chromium and cyanide levels were excessive five per cent of the time.

The report concludes: "The disposal of tailings into Buttle Lake, has had no detrimental effect on the quality of the water for domestic purposes."

PROVINCE  
APRIL 15/74

PROPERTY FILE

## WESTERN NET SOARS

Net 1973 profits of Western Mines Ltd. amounted to \$5.5 million or \$1.06 a share, compared with net 1972 profits of \$1.9 million or 38 cents a share.

President W. G. Jewitt said the mining royalties legislation of the provincial government is "semi-confiscatory."

The legislation would have a serious effect on future earnings and "would divert risk capital elsewhere, resulting in a declining mineral industry in British Columbia."

SUN  
APRIL 19/74



P. Feb 19/74

# Mining firm profit soars

Western Mines Ltd. reported net earnings of \$5,533,926, or \$1.06 per share, for the year 1973.

This income was after an extraordinary writedown of the company's Ainsworth mining properties in the amount of \$659,750, or 13 cents a share.

The 1972 results, comparable with the pre-writedown 1973 figures, were earnings of \$1,978,726, or 38 cents a share.

W. G. Jewitt, president, said the 1973 earnings resulted from unusually high metal prices. The Myra mine, which came into production in late 1972, supplied 21 per cent of the mill feed but contributed to the improved results due to its high silver and gold content.

The company's operating mine and mill (taking ore from the Myra and Lynx bodies) is at the south end of Buttle Lake on Vancouver Island. Production continued

to be restricted because of difficulties in meeting government regulations on the quality of the mill effluent, said the report.

The report gave an excerpt from a recent statement of B.C. Research, which said "the disposal of the mill tailings into Buttle Lake has had no detrimental effect on the quality of the water for domestic purposes."

The company milled 354,240 tons of ore grading 1.37 per cent copper and 8.22 per cent zinc. Average prices were 79.78 cents a pound for copper and 21.74 cents for zinc. Concentrate revenue was \$17.3 million compared with \$8.88 million in 1972.

Western Mines has an option to eventually earn a 65-per-cent interest in the Granite Mountain property 1 miles north of Powell River.

The company also is participating in oil drilling in Alberta.

PROPERTY FILE

PROVINCE  
FEB. 19/74

Myra 92F072 (12E)  
Lynx 92F071 (12E)

# PROPERTY FILE

NO. 35  
VANCOUVER 1, B.C.  
683-7265  
(AREA CODE 604)

## George Cross News Letter

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NO. 35(1974)  
FEBRUARY 19, 1974

NO. 35(1974)  
FEBRUARY 19, 1974

### WESTERN CANADIAN INVESTMENTS

#### WESTERN MINES LIMITED

PERIODS TO 31DEC.,	3 Mos. 1973	Year 1973	Year 1972
Concentrate revenue	\$5,603,653	\$17,309,292	\$8,877,383
Operating costs	2,354,898	8,089,499	5,846,238
Misc. charges (credits)	(5,275)	148,986	25,165
Writeoffs	328,359	1,197,131	744,579
Income & mining tax	1,032,856	1,680,000	282,675
Income bef. extra. item	1,892,815	6,193,676	1,978,726
Per share	36¢	\$1.19	38¢
Extra. write down	659,750	659,750	-
NET INCOME	\$1,233,065	\$5,533,926	\$1,978,726
Per share	23¢	\$1.06	38¢
Cash flow per share	43¢	\$1.55	52¢
Shares outstanding	5,210,616	5,210,616	5,207,816

#### OPERATING STATISTICS

PERIODS TO 31DEC.,	3 Mos. 1973	Year 1973	Year 1972
Tons ore milled	80,127	354,240	379,406
Ore grades % copper	1.40	1.37	1.85
zinc	8.83	8.22	6.07
Recoveries % copper	75.76	76.27	88.60
zinc	82.57	82.51	77.80
Aver. price U.S.¢ per lb.			
Copper	93.96	79.78	48.97
Zinc	22.58	21.74	17.77

that the disposal of tailings into Buttle Lake has had no detrimental effect on the quality of the water for domestic purposes."

Regarding outside exploration, Mr. Jewitt notes that an option was taken from Granite Mountain Mines Ltd. on its large low-grade copper property near the sea coast about 14 miles north of Powell River, B.C., whereby Western may earn 65% interest.

Western participated in financing a drilling project in the Wood River district, Alberta, originated by Summit Resources, thereby earning 20% working interest. Oil flowed to surface after cutting a 60 foot porous horizon at a depth of about 5,750 feet, says Mr. Jewitt. The estimated rate of allowable production is 250-300 barrels per day. The estimated present value of Western's interest, discounted at 10%, is about \$250,000. Participation in further drilling projects is planned.

Despite an extraordinary write-down of the Ainsworth, B.C., mining properties in the amount of \$659,750 by Western Mines Limited in the final quarter 1973, net income rose to \$1.06 per share in 1973 from 38¢ in 1972. W.G. Jewitt, reports that unusually high metal prices throughout 1973 were the primary reason for the increased earnings. The Myra mine, which came into production in late 1972, supplied approximately 21% of the mill feed but was a contributing factor in the improved results due to the high silver and gold content. Production continued to be restricted because of difficulties in meeting government regulations concerning the quality of mill effluent. Ore fed to the mill in 1973 averaged 972 tons per day. He quotes a recent report from the B.C. Research Council as follows: "It is concluded

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## Western Mines profit steady good start in first quarter

VANCOUVER—Net earnings of Western Mines for 1972 of \$1,978,726, or 38¢ a share, against an almost identical amount of \$1,978,960 for 1971 are after all charges, but before an extraordinary write-off of \$367,545 in 1971.

Tonnage milled in 1972 was slightly lower than in 1971 and included for the first time 5,383 tons from the Myra mine. Ore grades from Lynx averaged 0.04 oz. gold and 1.7 oz. silver per ton, 1.8% copper, 0.7% lead, and 6.1% zinc, off a bit from 1971. Myra ore averaged 0.24 oz. gold and 22.8 ozs. silver per ton, 1.0% copper, 3.4% lead, and 13.2% zinc, all from the high grade zone. This ore is being treated separately in the modified pilot plant circuit at about 85 tons a day. The high grade reserves, at year end totalled about 105,000 tons, over three years' supply at the present treatment rate.

### Myra best potential

The Myra mine, according to the annual report, continues to have the best potential for future ore development, but other possibilities are under examination.

In 1972 the rate of development at the Lynx property was increased, lateral work plus raising totalling 10,472 ft. Diamond drilling was intensified, total footage 53,121 ft.

At Myra, development and stope preparation were stepped up substantially in preparation for production, which started Oct. 16, 1972. Lateral advance and raising totalled 10,081 ft., and diamond drilling 48,560 ft.

Two holes were drilled for geological information on the Price property, and this work will be intensified in 1973.

On outside exploration, work has been temporarily suspended on the Cream Silver property where drilling on the anomaly last year failed to develop ore. Further work is planned for the J.R. and Syd copper prospects under option to the company on the west coast of Vancouver Island.

An examination showed what appeared to be a promising prospect in Mexico where a silver-copper-lead-zinc orebody already is being mined on a small scale. Negotiations for an option were started.

Various statements quoted in the press and other media, W. G. Jewitt, president, states in his report to shareholders, indicate the B.C. mining industry makes little or no contribution to provincial

revenue. He pointed out that in 1972 the company paid \$111,773 industrial assessment and property taxes, \$109,000 social service taxes, \$8,000 free miners certificates and recording fees, \$21,000 diesel and gasoline tax and \$282,675 B.C. mining tax, a total of \$532,448.

	1972	1971
Net profit	\$1,978,726	\$1,978,960
Per share	38¢	38¢
Work cap'l	\$2,811,668	\$2,834,387
Tons milled	379,405	386,541
Concentr. tons		
Copper	24,436	26,080
Zinc	33,630	38,003
Lead	3,422	2,001
Lead-silver	408	—
Ore res. tons	1,746,000	1,870,900

\* \* \*

Western Mines reports for the first quarter of 1973 net profit of \$1,003,587, or 19.3¢ a share, against \$792,438, or 15.2¢ a share, for the first three months of 1972. During the 1973 first quarter 98,785 tons were milled, a daily average of 1,098 tons. Myra mine supplied 14% of the millfeed including 7,516 tons of high grade averaging 0.29 oz. gold and 23 ozs. silver per ton, 1% copper, 3.8% lead and 12.4% zinc. Average metal prices rose to 60.05¢ from 45.35¢ a lb. for copper, and to 19.72¢ from 17.50¢ a lb. for zinc.

Annual meeting will be held May 8, 1973, in Vancouver.

Ore res. tons 1,746,000

High grade res 105,000 tons.

Ore res. tons 1,746,200 v1

0.08 oz/ton Au

4.6 oz/ton Ag

1.2% Cu

1.3% Pb

8.1% Zn

72 F/12 E  
PROPERTY FILE