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George Cross News Letter

"Reliable Reporting"

WESTERN CANADIAN INVESTMENTS

NO. 106 (1965)

NO. 106 (1965)
JUNE 3, 1965

BETHLEHEM COPPER CORPORATION LTD.

- * Target Earnings Rate Expected to be Realized this Quarter
- * Mine Manager Says Pit Change-Over Not as Time Consuming as First Indicated

Bethlehem Mining Corporation's annual report, which was mailed to shareholders on May 28, contained a statement by D.W. Pringle, P. Eng., mine manager, as follows:

"As a result (of the slide in the East Jersey pit) the operating profit for the first six months of the 1965/66 fiscal year will probably be only about 70% of the forecast supplied to the directors a few months ago."

On January 28, Mr. Pringle had told the directors he expected Bethlehem would earn approximately \$1,000,000 in each quarter of the fiscal year starting March 1, 1965.

On May 4, 1965, Mr. Pringle was asked by the directors to make a careful review of his calculations and to have ready for a meeting on May 31, estimates for the balance of the fiscal year ended February 28, 1966, taking into account the effect of the slide.

In the light of progress since, he advised directors on May 31, that he finds it possible to anticipate an operating profit of at least \$1,000,000 for each of the three remaining quarterly periods of the current year. Final figures for the first quarter will be issued to shareholders in about 10 days, which will be in advance of the annual meeting on June 18. The mine manager said re-calculation was possible on the basis of 2½ months experience in the Jersey Zone which shows that the problems arising from the earlier than scheduled move to the Jersey Pit were not as time and cost consuming as had been indicated. The first quarter result, followed by the recovery in earnings as now anticipated, directors point out, made it possible to declare a second interim quarterly dividend of 10¢ per share, payable June 23, to shareholders of record June 1.

H.H. Huestis, president, and P.M. Reynolds, C.A., director and secretary-treasurer, report that earnings for the first quarter, which ended May 31, 1965, will be in the order of 20% higher than in the three months ended May 31, 1964. Subject to possible minor adjustments when the books are closed, the indicated operating profit for the quarter was approximately \$775,000. This compares with \$641,000 in the corresponding period a year ago.

This improvement was less than anticipated in January, because of the move to the Jersey Zone one month earlier than planned.

(Distributed to shareholders by the directors of)
(Bethlehem Copper Corporation Limited)

January 11, 1960

TO: J. G. Hansen
FROM: A. R. Thomas
SUBJ: BETHLEHEM COPPER CORPORATION LTD.

Mr. Van de Mark telephoned me today from Vancouver. He has talked with Mr. Whitley of the Royal Bank of Canada in Vancouver, concerning Bethlehem Copper whose property is located in the Highland Valley of British Columbia, 30 miles north of Merritt. Mr. Van de Mark has already talked to you and Mr. Lieber in this regard.

AS&R turned the Bethlehem Copper proposition down due to other commitments. However, Glen Pollock, of New York City, who is their man in charge of investigating mining all over the world, is familiar with this project. Arrangements have been made for you or Lieber to get in touch with Mr. Pollock. Bethlehem Copper has wired Pollock that CMC may be in touch with him. We have authority to talk to Pollock and get his ideas. Right now a Japanese group is looking at it.

We understand that this is an open pit operation and that there are 60,000,000 tons of 0.75% copper or higher proven reserves and they are still drilling. The firm of James, Buffam and Cooper of Toronto made the report and it would be available to us. It would be a short-cut if we can see Mr. Pollock and obtain the information which AS&R has.

Would you please get in touch with Mr. Lieber and arrange for him to see Mr. Pollock in New York.

A. R. Thomas.

*Marked to Lieber before
he left told him about
this. He will see Pollock,
advised J.G.H. I did so*

*re-going
Wed. Jan. 13
Banker & Co
Ed Bousquet*

*From
KLS:101
Nathan Pollock*

Inter-Office Correspondence

File
N.P.

To K. Lieber Company or
Division

From W. S. Van de Mark Company or
Division

Date December 18, 1959 Subject Bethlehem Copper Company, British Columbia

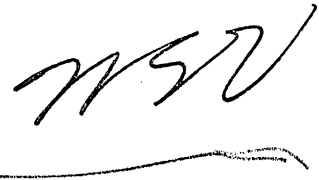
The following is supplemental information regarding the above company on which I have passed on some data to you. This information came today via a phone call from Ed Bowser of the Royal Bank of Canada in Vancouver.

This company originally wanted to build a 7500 ton concentrator for their ore at an estimated cost of \$15 million. A Japanese firm has approached them on the basis of putting up a 3000 ton concentrator at a cost of approximately \$6 million. The Japs would agree to put up \$5 million for a ten year contract for all of their production of copper with a 26-1/2 cent floor for four years and a formula to ascertain the floor price for the remaining six years.

The Bethlehem Copper people say that the 26-1/2 cent floor would pay off the cost of building a 3000 or a 7500 ton concentrator in ten years. Other than that, they have given no cost data to Mr. Bowser.

Mr. Bowser told me that if we were interested in going into this on the basis of putting up the full cost of the 7500 ton concentrating plant, we would receive a 50% equity and be the operator; 80% of the net profits would be applied to repaying our money until it is 100% repaid. He also believes that we could probably work a more attractive contract with the Japs if they were not putting up any money. He further said that the ore would have to go either to Tacoma or Trail for smelting but that Canadian Exploration Company, who have a copper mine in the general area, would put up 50% of the cost of a \$10 to \$12 million smelter.

Mr. Bowser indicated that the Bethlehem Copper people were anxious to make a deal with someone and suggests that if we have any interest whatever, that we let him know as soon as possible.



WSV:gw

BETHLEHEM COPPER CORPORATION LTD.

Head Off.- 402, 1111 W. Georgia St., Vancouver. Exec. Off. - 805, 402 W. Pender St., Vancouver. Mine Off. - Ashcroft, B.C. Listed --T.V. Trans. Agents--Eastern Trust Co., Vancouver and Toronto.

Company--(B.C. 1955) Holds copper property, 123 cls., near Ashcroft, B.C., in Highland Valley area. In Sept., 1955, deal made with American Smelting and Refining Co. to finance and develop property into production in return for share of profits; however, after spending approximately \$1,200,000 on exploration, American Smelting terminated agreement in May, 1958. Based on extensive surface drilling, ore reserves estimated as follows; 50,000,000 tons av. 0.65% copper indicated to depth of 750 ft. and further 15,000,000 tons av. 0.50% copper inferred in Jersey zone, 9,500,000 tons av. 0.95% copper indicated to 350 Ft. in East Jersey zone, and 25,000,000 tons av. 0.70% copper inferred in Iona zone. Several other mineralized zones also located on property. Mid-1958, Bethlehem started a \$900,000 underground program of bulk sampling involving crosscutting, drifting and drilling. Program expected to be completed late in 1959.

A 123-claim copper group held in Mamit Lake area, B.C.(about 13 miles southeast of Highland Valley property) was investigated by drilling in 1956-57 by Northwestern Explorations, a subsidiary of Kennecott Copper Corp., under option agreement. No commercial ore bodies found.

Co. also holds iron-copper prospect, 11 cls., Laverdiere group, near south end of Atlin Lake, B.C.; 50% interest in option on Elizabeth group, Yalakom River area, Lillooet min.div., B.C., where some exploration done underground for gold chances with moderate encouragement.

Directors: H.H. Huestis, pres., Vancouver; R.F. Dooley, vice-pres., Chicago, Ill.; P.M. Reynolds, sec.-treas., D.F. Farris, H.A. Martin, Vancouver; F.J. Garbutt, Toronto. Mine Mgr.-R.E. Hamilton.

Capitalization-Author. Outstand. Par Common 16,000,000 sh. ~~1x~~ 2,975,000 sh. 50c

~~1x~~ At Sept. 19, 1958; options o/s on 425,000 shs. at 85c to \$1.60 a sh.

1 Increased from 1,500,000 shs. of \$2 per, and stock split 4-for-1, mid-1955.

Accounts--As at July 31, 1958, co. reported current assets of \$579,770, including no current liabilities. In Sept. 1958, \$85,000 realized from sale of 100,000 shs.

from Financial Post "Survey of Mines 1959"

Bankers: The Royal Bank of Canada Vancouver B.C.

BETHLEHEM COPPER COMPANY RECEIVED			
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WGV		WAW	
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Ed.

CRAIGMONT MINES LTD.

Head Off.-Suite 213, 678 Howe St., Vancouver. Mine Off.-Birkett Creek Mine Operators Ltd., Merritt, B.C. Listed-T. Trans. Agents-Guaranty Trust Co. of Canada, Toronto and Vancouver.

Company-(B.C. 1946) Holds copper-iron prospect, 130 claims, 10 miles north of Nicola, B.C. Canadian Exploration Ltd. took over management of the company in 1957. Drilling to mid-1958 indicated a possible 8,105,000 tons of ore grading 1.99% copper and 21.7% iron per ton. An additional 12,055,000 tons of possible ore is reported.

Operating Agreement- As of June 1, 1958, the co. signed operating agreement with Noranda Mines, Peerless Oil & Gas Co., and Canadian Exploration Ltd., whereby these companies will spend up to \$1,000,000 over three years on development. A new company, Birkett Creek Mine Operators Ltd., in which Craigmont has 40% nonvoting interest, to be organized to carry out the program. Name changed from Pinecrest Gold on July 5, 1951.

Directors-R. Collishaw, pres., E.M. Olts, vice-pres.; N.H. McDiarmid, sec.Treas.; S.D. Little, Vancouver; R.V. Porritt, Toronto; Vernon Taylor, Jr., Denver.

Capilalization - Author. Outstand. Par Common 3,000,000 s. & 1,990,910 sh. 50c

* Options o/s on 40,000 shs. at 60c a sh.

Accounts-Balance sheet at June 30, 1958, showed current assets of \$296,122, including \$53,688 cash. Current liabilities were \$9,351.

Timber Products Company			
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Bethlehem Copper Going Underground

Bethlehem Copper Corp. reports that an underground program will be started immediately on its copper prospect in the Highland Valley area of British Columbia.

This announcement follows on the heels of American Smelting and Refining's official notification that it was terminating the option it had on Bethlehem's property.

The underground work will involve the driving of an adit to investigate two main zones, the Jersey and the East Jersey and possibly a third, the Iona. Bulk sampling is to be carried out in order to assess the grade indications obtained in diamond drilling over the past three years. It is expected that some drifting and raising will also be done.

The program has been recommended by W. F. James and B. S. W. Buffam, consulting geologists, who will direct the work.

INTER-OFFICE CORRESPONDENCE

FROM David A. Duff

CITY Toronto

DATE May 22, 1958

TO Paul W. Allen

SUBJECT

Please find attached a copy of clipping from today's issue of the Northern Miner which tends to confirm my information to you last Sunday.

Bethlehem has approximately \$600,000. in their treasury. However, as they have other exploration interests, they may be open for a deal on the property to some large outfit on more reasonable terms than formerly. Apparently James & Buffam indicate the method of exploration I felt would have been advantageous a year or so ago.

BAD:lw
Encl.

PWA

Belliveau reported ASARCO were unwilling to proceed immediately as required by their other so called.

BRITISH COLUMBIA—Bethlehem Copper Corporation has completed the first phase of its 10,000-foot exploration program in Highland Valley. The company's adit at elevation 4,600 feet entered the fringe of the Jersey copper deposit after a 2,700-foot drive from the portal. An additional 1,000 feet of underground work will be undertaken by Intermountain Construction Company. Concurrently with penetrating the Jersey zone, long holes will be driven parallel to the tunnel by the percussion method. Extension of the tunnel to the East Jersey Zone will mark the second phase. By fall the company hopes to have complete information on the copper content of both deposits. The bulk sampling plant is ready for operation.

NEWFOUNDLAND—Pickands Mather & Co. has announced that the four groups developing the Wabush Lake iron property about 200 miles north of Seven

MINING WORLD

Feb. 1959

American Smelting Cancels

Pact With Bethlehem Copper

VANCOUVER, B.C.—American Smelting & Refining Co. has notified Bethlehem Copper Corp., Ltd., that it is terminating an agreement by which it has been exploring and developing the Bethlehem copper prospect in British Columbia's Highland Valley, H. H. Huestis, Bethlehem Copper president, announced.

A. A. Brown, American Smelting vice president in charge of mining operations, confirmed that exploration had been suspended at the Highland Valley property. "While results to date have indicated the presence of low grade copper reserves," Mr. Brown, said, "they are not considered sufficiently promising to equip the property for production, or to continue further exploration at the present time."

Bethlehem Copper's president said American Smelting had stated it will withdraw completely from the large-tonnage low-grade property and will transfer back to Bethlehem all its interests, making Bethlehem 100% owner again.

Mr. Huestis said Bethlehem will carry the program forward, either on its own or in association with other companies which have shown an interest.

American Smelting had spent an estimated \$1,200,000 in exploration of the property since mid-1955. The U.S. company was to have received a 55% share of profits if the property was brought into production.

INTER-OFFICE CORRESPONDENCE

FROM David A. Duff

CITY Toronto

DATE May 20, 1958

TO Paul W. Allen

SUBJECT BETHELEHEM COPPER, HIGHLAND VALLEY, B.C.

With reference to the above, which we discussed Sunday on the telephone. I have on my personal file a photostatic copy of two reports made in 1955 by W. H. White, R. M. Thompson and K.C. McTaggart. These boys are a team of geologists and professors at the University of B.C. who are retained by the Bethlehem Copper people. The first report of some 54 pages, and dated Oct. 24, 1957, goes into the geology very extensively, describes the zones then known and the sampling of the surface bulldozer cuts, adits, etc., together with a discussion on the drilling already started by A. S. & R.

This report describes the Iona zone as the largest and lowest grade, and suggests 113,000 tons per vert. foot at a grade of .002 Au, 0.23 Ag, 0.48 Cu and .010 Mos. The Jersey zone is a better grade and suggested at 53,000 tons per vert. foot, without quoting average grade but one cut across a width of 470' averages 1.01% Cu.

A further report by the same team in the summer of 1956 covers the drilling and trenching from Oct. 1st, 1955 - March 31st, 1956. The drilling then amounted to 6,775 feet in 14 holes. They state that drilling on the Iona zone confirms values and mineralization to depths greater than 300 feet. They also infer that the Jersey zone mineralization has been extended to a length of 2400 feet and width of 1000 ft. with a vertical range up to 600 ft.

I am enclosing a series of clippings from the Northern Miner over the period since the date of the above reports. This information for what it may be worth. You will note the latest suggests that A. S. & R. are entirely out and that Bethlehem may consider another deal with a new company and requiring immediate underground work.

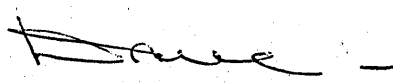
My impression has always been that there is a definite potential of large tonnage low grade material available. The probable economics would have to be based on a study of the existing results, so far not made public by Asarco. I would expect higher grade to result from underground work than is indicated from surface drilling to date. However, the final answer should be based on the underground exploration of a typical area. I should think some such area could be attacked through adit work with possibly some flat drill holes between cross-cut sections.

It is quite possible that Asarco may be willing to return if they can soften the deal with Bethelhem.

I will endeavour to get any further authentic information available.

DAD:LW

Encl.



Recent Bethlehem Work Obtains Better Values

Drilling during the past six months on the East Jersey copper zone at the Highland Valley, B.C., property owned by Bethlehem Copper Corp. has returned better than average values, The Northern Miner gathers. The work is being done by American Smelting and Refining Co. which is managing and financing the project.

The East Jersey zone lies about 1,000 ft. east of the east boundary of the Jersey zone and approximately 1,200 ft. north of the northern edge of the presently known Iona zone. The new zone may be an extension of either of these zones but insufficient work has been carried out to determine this.

In both the Jersey and Iona zones large tonnages of low grade copper have been indicated by drill programs carried out over the past two years or so.

In the East Jersey zone the following holes were spaced from north to south and all were driven at 40°. Intersections given are true widths.

Hole	Width (ft.)	Copper, %
B-63	30	0.88
B-61	300	1.18
Cd-51	260	1.19
B-64	13	0.73
B-64	21	1.43
B-64	225	0.87
B-65	110	1.23

When hole B-64 was stopped it was in material which graded 0.65% copper at a vertical depth of 400 ft. Hole B-65 was stopped in material grading 1%.

Tonnage Estimates On Bethlehem Group Provided by A.S.&R.

Some idea of the magnitude of the low grade deposits at Bethlehem Copper Corp's property is emerging from drilling completed over the past two years, according to a progress report by Dr. W. H. White, consulting geological engineer. The property, in the Highland Valley area, British Columbia, is under option to, and development is by, American Smelting and Refining Co.

Tonnages and grades as estimated by Dr. White may be listed under the headings of "indicated" and "inferred." In the Jersey zone, there are indicated: 30,330,000 tons grading 0.798% copper, 22,245,000 tons grading 0.518% and 5,400,000 grading 0.357%. There are also 15,000,000 tons in the "inferred" category with an average grade of 0.50%.

Highlighting this season's work was the discovery of the East Jersey zone (some 1,500 ft. east of Jersey Lake and 2,000 ft. north of the Iona deposit) where an estimated 7,000,000 tons is inferred grading between 1%-2% copper. This zone appears

Bethlehem Extends Asarco Time Limit

Bethlehem Copper Corp. has granted American Smelting and Refining Co. additional time to continue exploration of Bethlehem's Highland Valley property in British Columbia before reaching a decision on production. This was announced by H. H. Huestis, president of Bethlehem.

to be a steep-dipping structure, 200-300 ft. thick striking north. Present known length is about 700 ft. and its vertical extent has been indicated for over 400 ft. Many more holes will be required to define the deposit, the report states.

The Iona zone contains an estimated 25,000,000 tons classified as "inferred" and grading 0.70% copper.

Continue Winter Program

Exploration is expected to continue during the coming winter months and will be concentrated on defining extent and grade of the Jersey and East Jersey zones. Work on the property has been continuous since June, 1955, employing a crew of 40-50 men, H. H. Huestis, Bethlehem president, states.

Work to date has included 41,286 ft. of diamond drilling of which some 35,800 ft. has been of large diameter holes. Close to 25 miles of jeep road has been built and several thousand feet of bulldoze trenching has been completed.

Expenditures on the Highland Valley development total approximately \$1,000,000 of which by far the greater part has been supplied by American Smelting and Refining Co. Bethlehem Copper has about \$600,000 in cash and is operating currently on an average monthly expenditure of about \$6,000.

Despite the present depressed market for copper, the future is viewed by Bethlehem directors with optimism and confidence, Mr. Huestis states.

Bethlehem has also continued its outside exploration program. The company's Laverdiere group, near Atlin, B.C., has been retained in good standing. Bulk sampling of 305 ft. of drifts on the Yalakom gold property is to be conducted next spring. A prospecting party under the direction of Drs. White, McTaggart and Thompson carried out a program last season but without making discoveries of importance.

Bethlehem Drilling Extends East Jersey

Exploration by American Smelting and Refining Co. on the Highland Valley property of Bethlehem Copper Corp. has been resumed, Jan. 3rd, 1958, with two diamond drills working on a 3-shift basis, seven days a week.

Since the last report to shareholders, covering the period to Sept. 30, 1957, an additional 10,514 ft. of diamond and rotary drilling has been done. H. H. Huestis, president, states that this work "has been confined to the East Jersey zone, which is the newest and appears to be the highest-grade zone so far uncovered on the property. The dimensions outlined so far are: length, approximately 1,100 ft.; width, 300 ft.; and depth, 400 ft. The length is as yet open at both ends. The grade of ore within the zone appears to be somewhere between 1% and 2% copper."

Bethlehem has been informed by its underwriters that options on 225,000 treasury shares at a price of \$2.25 per share will not be exercised on the due date of Feb. 6, 1958. Mr. Huestis advises that the cash position of the company exceeds \$600,000.

Asarco Surrenders Bethlehem Option

American Smelting and Refining Co. will withdraw completely from the further development of the Highland Valley copper prospect of Bethlehem Copper Corp., according to H. H. Huestis, president of Bethlehem. Since the fall

CU-51	260	1.10
B-64	13	0.73
B-64	21	1.43
B-64	225	0.87
B-65	10	1.13

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Under the terms of the amendment, Asarco now has the right to give notice to Bethlehem on or before Aug. 14, 1958, that Asarco needs another year for further examination of the property. When such notice is given Asarco will be obligated to spend not less than \$500,000 during the 12 months expiring Sept. 14, 1959. A proviso has been made also for a second extension, if requested by Asarco, which would call for an additional expenditure of \$500,000 before Sept. 14, 1960.

The previous agreement required Asarco to announce production plans by Sept. 14 of this year or return the property to Bethlehem without encumbrances. Asarco has spent approximately \$1,200,000 on this property and is now making expenditures at the rate of \$40,000 per month. Previously, Bethlehem had spent \$150,000 on this property.

All other terms of the agreement made Sept. 14, 1955, remain unchanged.

Asarco Surrenders Bethlehem Option

American Smelting and Refining Co. will withdraw completely from the further development of the Highland Valley copper prospect of Bethlehem Copper Corp., according to H. H. Huestis, president of Bethlehem. Since the fall of 1955, Asarco has expended approximately \$1,250,000 on exploration of the big low grade copper deposit in south-central British Columbia. Prior to this, Bethlehem had carried on preliminary work at a cost of some \$200,000.

Had Asarco continued it would have earned a 55% interest by bringing the property into production; and only recently had been granted an extension of one year in which to determine the potential of the property. This would have expired in Sept., 1959.

Bethlehem directors have accepted the Asarco withdrawal as a material capital gain for Bethlehem shareholders. The company has again acquired a 100% interest in its holdings, with the value thereof greatly enhanced. Mr. Huestis says that Bethlehem will continue the development of the property on its own account. An underground program will be commenced.

The company has in excess of \$600,000 for the purpose. As an alternative to carrying on the work on its own account, Bethlehem will give consideration to proposals made by several other mining companies. Mr. Huestis states that any agreement with other parties would call for an immediate program of underground development.

A. S. & R. Extends Program On Bethlehem Group

Bethlehem Copper Corp. has been advised by American Smelting and Refining Co. that the latter intends to continue the exploration program which has been in effect for the past year at the original Bethlehem copper prospect in the Highland Valley, southeast of Ashcroft, B.C.

A. S. & R. has commenced a new program of vertical drilling on the Jersey zone and this is hoped to provide important information within six months as to potential tonnage and grade.

Zenith Securities Ltd. of Toronto, has exercised its option under the escalator terms of the underwriting agreement to purchase 63,000 shares of Bethlehem at \$2. per share. Options yet outstanding cover 87,000 shares at \$2 per share to June 6, 1957, and 225,000 shares at \$2.25 to Nov. 6, 1957.

Substantial Tonnage Added to Reserves At Bethlehem

Work during the past month on the Bethlehem property, Highland Valley, British Columbia, has added 10 million tons of inferred ore to the previously indicated tonnage.

W. H. White, consulting geologist for Bethlehem Copper Corp., makes the estimate following a study of results obtained by American Smelting & Refining Co. His estimate brings calculated reserves in the Jersey zone to 56 million tons averaging 0.71% copper. In addition the Iona zone is estimated to contain a very large tonnage of lower grade.

Commercial mineralization and favorable geological conditions have been shown to persist to a vertical depth of at least 1,000 ft. with no termination in sight at that horizon.

Dr. White's report advises that the A.S.&R. program has been to drill deep holes in a concentrated pattern in the Jersey zone to gain more accurate information within a restricted block of ground. Because of the higher density of the pattern, it is concluded that it would be reasonable to transfer some 30 million tons of "inferred" ore to classification as "indicated" ore. Of the 56 million tons almost three-quarters grades 0.78% copper.

Dr. White states that A.S.&R. has achieved some success in improving core and sludge recoveries but further improvement will be necessary before average grades can be calculated accurately. In the final analysis it is expected underground development will be required to establish firmly the grade of the deposit. The current program on the Jersey zone is about half completed.

H. H. Huestis, president, states that Northwestern Explorations Ltd., a subsidiary of Kennecott Copper, which is exploring Bethlehem's Mamit Lake group on a similar basis to that of A.S.&R. on the original holdings, has driven close to 10,000 ft. of diamond drill holes; no zones of commercial grade have yet been found. A detailed magnetometer survey will be conducted this winter.

The Elizabeth group, a gold prospect

in the Yalakom River area which is held jointly by Bethlehem Copper and Beaver Lodge Uranium Mines, will be thoroughly explored at the 300-ft. horizon during 1957. The property has been previously explored at great expense by Bralorne Mines at considerably greater depth but results were disap-

pointing and, consequently, Bralorne abandoned the ground. Dr. White, the Bethlehem geological consultant, was one of the discoverers of the Yalakom property, an event that precipitated a major gold rush in 1941.

On Nov. 30, 1956, Bethlehem Copper Corp. had \$654,000 in the treasury.

American Smelting Speeds Up Bethlehem Copper Exploration

APR 25 1957

Bethlehem Copper Corporation has been advised by American Smelting and Refining Co. that the latter will not only continue the major development program which has been in progress on Bethlehem's Highland Valley, B.C., copper property for the past year and one-half, but plans to accelerate the scale of work. In the past two weeks there has been some concern in mining circles as to the attitude of large companies such as A. S. and R. in the face of the "vicious" legislation recently enacted, if not the open hostility displayed by the provincial government. The A. S. and R. decision is therefore construed as being based on continuing satisfactory physical results of development and on the hope that no government would seek to destroy the second largest basic industry within its borders.

In the five months commencing May 1, 1957, A. S. and R. has budgeted for the expenditure of \$305,000 on the Bethlehem property. This follows the spending of \$300,000 in the past six months. The

new program will include 10,200 ft. of additional diamond drilling, 10,000 ft. of churn drilling, some geological and geophysical surveying, comprehensive metallurgical testing, and the compiling of preliminary engineering estimates. The first of the churn drills to be used will reach the property this week.

A. S. and R. has advised the Bethlehem company that several exploration possibilities in the immediate vicinities of the Jersey and Iona zones remain to be investigated. It is hoped the new work will add to the tonnage indicated and at the same time improve the grade of the ore.

Specifically the work will include:

(a) Testing the possible extension of the Jersey zone to the east with at least two diamond drill holes.

(b) Testing the extent and grade of the strong mineralization as exposed in trenches in the White zone by one or more diamond drill holes.

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(c) Drilling of the north Simons zone to sample the mineralized bedrock as exposed by bulldozer in a trench 1,000 ft. long. Here the altered porphyry as exposed contains the best surface showing of bornite mineralization yet uncovered on the property.

(d) Prospecting covered areas with a lightweight portable churn drill. The western half of the Bethlehem group is entirely covered by overburden and it is believed the churn drill can penetrate through the glacial till and thus test mineralization in bedrock both cheaply and rapidly.

Based on the latest information supplied by American Smelting and Refining, Dr. W. H. White, consulting geologist, is compiling new estimates of ore reserves for submission to Bethlehem shareholders in June.

Bethlehem Copper has successfully negotiated an agreement whereby the company will participate in the development of mineral concessions covering some 300 sq. miles in the Ungava district of Quebec.

Northwestern Explorations Ltd., the Kennecott subsidiary, plans to reopen its camp and resume the exploratory work under agreement with the Bethlehem company on another large copper prospect a few miles south of the property under development by A. S. and R.

A.S.&R. Executive Changes

Changes in top executive posts were announced last week by American Smelting and Refining Co. Kenneth C. Brownell moved up to chairman of the board, R. Worth Vaughan became president and Oscar S. Strauss was elected chairman of the finance committee. R. D. Bradford, a vice-president of Asarco and president of Asarco's subsidiary, Lake Asbestos of Quebec, was elected a director.

Bethlehem Meeting Told of Progress In A.S.&R.'s Drilling

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The annual meeting of Bethlehem Copper Corp., held in Vancouver, was informed by the president, H. H. Huestis, that American Smelting and Refining Co. had until Sept., 1958, to announce its plans for production from the company's Highland Valley, B.C., claims.

He gave it as his opinion that A. S. and R. would require all of the intervening time in intensive development in order to calculate as accurately as possible the most economic size of mill to be constructed.

Very encouraging results had been obtained in the drilling of the Jersey zone, but work on the Iona zone was far from complete, he added. A lot of exploration will also have to be done on the Simons zone and possibly on the Snowstorm zone, both of which offer attractive possibilities.

Mr. Huestis made reference to the investment of some \$30,000 in the shares of Murray Mining Corp., and the obtaining of an option on further shares at 35¢ per share. He said the Murray shares had already doubled in value and that Bethlehem would in all probability make a handsome profit on its investment.

The president stated that it had been planned to investigate the iron-copper prospect held by the company in the Atlin district of British Columbia but more recent events had made it advisable to defer this work until more advantageous conditions obtain.

Dr. W. Harrison White, one of Bethlehem's consulting geologists, said that A. S. and R.'s drilling had been largely concentrated on the Jersey zone and had produced a large deposit there. He said he expected there would be a lot of work done on the Simons zone because it was situated down hill from the Jersey zone and naturally the disposal of the vast quantities of surface material resulting from stripping operations would become an important factor. Dr. White said that a study of mining operations in comparable porphyry copper ore in the United States had revealed that the cut-off grade was between 0.3%-0.5% copper.

J. A. McLallen, chairman of the board of directors, said that A. S. and R. had now spent some \$800,000 in addition to the initial \$200,000 expended by Bethlehem Copper in the development of the Highland Valley claims. He estimated that another million dollars would be spent within a year. He said the company had not been informed of any change in plans as a result of the recent decline in the price of copper, and was confident that Asarco's planning was all done with a long range view. In fact the engineering staff was now investigating permanent-camp sites, power connections, and railway extension to connect with the C.P.R. at Lower Nicola, some 30 miles distant.

Asked by a shareholder concerning Ken-

Bethlehem Copper Work Progressing

The future of Bethlehem Copper Corp.'s Highland Valley property will be decided within six months.

It may become British Columbia's next large tonnage, low grade copper operation, most likely at a 10,000-ton daily rate.

During the past few months company reports have confirmed the existence of enough tonnages to support this conclusion.

In Vancouver last week, C. S. Pollock, exploration manager for American Smelting and Refining Co., which is directing the development program at the Bethlehem property outlined his company's plans.

There is no doubt that A. S. and R. is highly pleased with results of the drilling program to date and is prepared to spend more money to prove grade and to bring the property to the point where engineering studies for possible mill construction can be started.

Since the start of the structure drilling last September from 17-18,000 ft of diamond drilling has been completed. Reports from the Bethlehem company show that this has confirmed not less than 50 million tons grading 0.70% copper, with recent drill holes encountering an estimated true width of 800 ft. averaging 0.90% copper.

Drilling Program

American Smelting and Refining is going ahead with its plans. The company has already started a program of closely-spaced diamond drilling. Thirteen holes will be drilled vertically to a depth of 1,000 ft. each on the Jersey zone, to prove grade, with a couple of angle holes being put down to confirm the persistence of high grade veins. This program to cost in the neighborhood of \$200,000 should be completed in six months. At that time A. S. and R. will be ready to announce the results of the overall exploration and development program — tonnage, size of mill and a tentative date for a start of operations.

A fourth drill of NX size has been moved to the property. All drilling will be done carefully, with each hole being cemented. So as not to lose time the fourth drill will be used as a spare while cementing is in progress.

All this drilling will be done on the Jersey zone which has produced the best results so far, which is open at the west and where so far no limit has been found to depth. The Iona zone, which also contains immense tonnages, but of obviously lower grade, will be left for the time being with further development held in abeyance until work is well ad-

Bethlehem Copper Results Pleasing

Satisfactory results are being obtained by Bethlehem Copper Corp. on its Highland Valley, B.C., copper property in the second phase of its drilling program, according to H. H. Huestis, president.

This phase follows the initial drilling program which was carried out last year by American Smelting and Refining Co. Thirty-three holes of incline drilling were completed in the major program and some 100 million tons averaging under 1% copper were estimated as inferred reserves.

After A.S.&R. engineers had made a study of the first phase they recommended that a series of 13 vertical holes to a depth of 1,000 ft. be drilled between the incline holes on the Jersey zone. The vertical drilling was started late in August and results, to date, have been more than satisfactory in proving what the inclined holes indicated.

Broken ground and cementing have slowed anticipated progress and in order to speed the work a fourth drill has been added.

The first vertical hole was completed to 850 ft. The rods were lost at this depth and it was not deemed feasible to recover them. About 730 ft. of this hole assayed 0.85% copper while the entire 850 ft. averaged 0.8%. The hole was stopped in 0.8% material. Four holes are currently drilling. They are all reported to be in mineralization and assays are expected shortly.

Recent geological surface work has indicated the Jersey zone could extend 1,000 ft. further east. A.S.&R. has two bulldozers working on the property both stripping and road building.

It is now estimated that the second phase of drilling will be completed around the end of Feb., 1957.

Bethlehem Copper Corp.

In accord with the escalator clause in its underwriting agreement, Zenith Securities has exercised its option to purchase 37,000 shares of Bethlehem Copper Corp. at \$2 per share. Payment was not due until June 7, 1957. Zenith holds an option to purchase 50,000 more shares until the same date and a further option to take up 225,000 shares at \$2.25 to Nov. 6, 1957.

Long Copper Section Cut at Bethlehem

The drill program being conducted on the Highland Valley, B.C., copper property owned by Bethlehem Copper Corp. has returned an intersection of 743 ft. averaging 1.07% copper, H. H. Huestis, Bethlehem president, advises.

The hole is part of a grid program being carried out by American Smelting and Refining Co. on part of the Jersey zone. Previous drilling on this zone indicated some 56,000,000 tons of 0.71% copper it is estimated by Bethlehem's consulting geologist, W. H. White. The

zone is open in all directions except to the northeast.

The two companies have expended a total of \$750,000 on the property to date with over half of this sum being laid out by A. S. & R. In order to be entitled to 55% of the earnings if the property comes into production, A. S. & R. is committed to bear all further costs of the program.

In addition to the Jersey there are two other zones on the property which are being or will be investigated. The Iona zone contains some 25,000,000 tons of a lower average grade than the Jersey. Only a limited amount of work has been done on the Simons zone but bulldozers are now at work stripping the area in preparation for a program this season.

Bethlehem also holds properties at Mamit Lake on which Northwest Explorations, a Kennecott subsidiary, has spent about \$150,000 in exploration under a similar arrangement as that with A. S. & R. Further work is planned in the spring although no commercial grades have been found as yet.

Recently, there was a change in the directorate of Bethlehem with P. M. Reynolds being elected to the board and then becoming secretary. He succeeds J. W. Naylor who resigned.

Bethlehem Copper Resumes Field Work

Crews of Bethlehem Copper Corp. will conduct a prospecting expedition in a favorable area of British Columbia during the summer of 1957, the company's annual report shows.

The original Highland Valley property, where management and financing is by American Smelting and Refining, continues to be Bethlehem's prime interest, according to W. H. White, consulting geologist. Further drilling is continuing and will be required to delimit mineralized areas and extend ore reserves. A profitable mining and milling operation of the large tonnage - low grade porphyry copper type is fully justified, Dr. White concludes.

Of the several zones, reserve figures have been calculated for two. The Jersey zone has indicated reserves of: 30,330,000 tons grading 0.796% copper, 22,245,000 tons grading 0.518% copper and 5,400,000 tons grading 0.357% copper. To these are added an inferred 15,000,000 tons grading 0.5%. Dr. White shows. Inferred reserves in the Iona zone are calculated at 25 million tons grading 0.7% copper.

Drilling was resumed early in May by Northwest Explorations, a subsidiary of Kennecott Copper Corp., on a group of claims in the Mamit Lake area. Last year's drilling was inconclusive, the report states.

Drifting along two gold-bearing veins will be started in June on a 50-50 basis with Beaver Lodge Uranium Mines on a gold prospect in the Yakom River area, Lillooet mining division, B.C.

No plans have been formulated for exploration of ground held as an iron and copper prospect in the Atlin area, B.C.

Bethlehem Copper has taken an interest in Murray Mining Co., with property in the Ungava area of New Quebec, through the purchase of 100,000 shares at 30¹/₂¢ per share.

The company's balance sheet at Feb. 28, 1957, shows current assets of: \$17,109 cash, \$689 accounts receivable and \$630,035 short term notes and accrued interest. Against these were liabilities of \$1,903 accounts payable. There were 2,825,000 shares issued of the authorized 6,000,000 shares.

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ecott's position on Bethlehem's Marnit Lake claims, south of the Highland Valley, Mr. Huestis stated that more than \$200,000 had been expended on deep drilling. So far no orebodies had been found but the work was being continued.

P. M. Reynolds, secretary-treasurer, informed the meeting that since the issue of the annual report the company had

Substantial Tonnage Added to Reserves At Bethlehem

Work during the past month on the Bethlehem property, Highland Valley, British Columbia, has added 10 million tons of inferred ore to the previously indicated tonnage.

W. H. White, consulting geologist for Bethlehem Copper Corp., makes the estimate following a study of results obtained by American Smelting & Refining Co. His estimate brings calculated reserves in the Jersey zone to 56 million tons averaging 0.71% copper. In addition the Iona zone is estimated to contain a very large tonnage of lower grade.

Commercial mineralization and favorable geological conditions have been shown to persist to a vertical depth of at least 1,000 ft. with no termination in sight at that horizon.

Dr. White's report advises that the A.S.&R. program has been to drill deep holes in a concentrated pattern in the Jersey zone to gain more accurate information within a restricted block of ground. Because of the higher density of the pattern, it is concluded that it would be reasonable to transfer some 30 million tons of "inferred" ore to classification as "indicated" ore. Of the 56 million tons almost three-quarters grades 0.78% copper.

Dr. White states that A.S.&R. has achieved some success in improving core and sludge recoveries but further improvement will be necessary before average grades can be calculated accurately. In the final analysis it is expected underground development will be required to establish firmly the grade of the deposit. The current program on the Jersey zone is about half completed.

H. H. Huestis, president, states that Northwestern Explorations Ltd., a subsidiary of Kennecott Copper, which is exploring Bethlehem's Mamit Lake group on a similar basis to that of A.S.&R. on the original holdings, has driven close to 10,000 ft. of diamond drill holes; no zones of commercial grade have yet been found. A detailed magnetometer survey will be conducted this winter.

The Elizabeth group, a gold prospect in the Yalakom River area which is held jointly by Bethlehem Copper and Beaver Lodge Uranium Mines, will be thoroughly explored at the 300-ft. horizon during 1957. The property has been previously explored at great expense by Bralorne Mines at considerably greater depth but results were disap-

pointing and, consequently, Bralorne abandoned the ground. Dr. White, the Bethlehem geological consultant, was one of the discoverers of the Yalakom property, an event that precipitated a major gold rush in 1941.

On Nov. 30, 1956, Bethlehem Copper Corp. had \$654,000 in the treasury.