

Final reports
of all reports

New Denver, B.C.,
November 26, 1954.

Mr. A. A. Loeb, Pres.,
Scranton Mines Ltd.,
P.O. Box 1955
Piedmont Station,
Portland, Oregon.

801346
SCRANTON
- Progress Report No. 4

Dear Mr. Loeb:

Please find enclosed Progress Report No. 4 concerning the results of 1954 exploration efforts, and our recommendations for the major development to be undertaken preliminary to actual production.

You will note, that under your present company organization, ~~that~~ you will not receive credit for pre-production expenditures during the first three years of actual production. It is obvious that these credits can do much to defray operating expenditures during this critical period. I would recommend that you give full consideration ~~to~~ the advantages of re-organization, if permission to do so could be obtained from the Registrar of Companies under the Companies Act of B.C. If you have not already done so, I recommend that you should send for and study the pamphlet "Summary Review of Federal Taxation and Certain other Legislation affecting Mining, Oil, and Natural Gas, Enterprise in Canada, September, 1953." This is published by the Dept. of Mines & Technical Surveys, Mines Branch, Ottawa. Please do not hesitate to write me, if any matter in this report requires further explanation.

With best regards
Yours truly
W. M. Sharp, P. Eng.

Orig + 2 copies
addressed to ~~Scranton Mines Ltd.~~

Progress Report No. 4
Preliminary Exploration Program
Scranton Mines Ltd.,
1954.

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President & Directors,
Scranton Mines Ltd.,
Portland Oregon.

Foreword

In general progress in the field during the 1954 season was difficult and somewhat delayed because of adverse weather. The generally late spring and cool summer were particularly pronounced at Scranton elevations. As fieldwork could not be started until July 10th it was apparent that there would be some difficulty in completing the program outlined in the report "Estimated Progress Schedule and Costs, Scranton 1954. Exploration Program." By the end of August it was further apparent that, to complete this preliminary exploration project, some substitutions within the proposed schedule would be necessary. Consequently we recommended and implemented an electromagnetic geophysical program. Even so, cold/snowy weather made it difficult to complete this part of the program to our satisfaction. Finally, cold weather forced an early termination of Pontiac diamond drilling. However, certain newly-discovered features of Pontiac geology, entailing some revisions in drill hole layouts, made it advisable to suspend work for technical reasons.

For this report, we feel that we have gathered sufficient information - particularly over the Pontiac areas - to allow us to present our plans and recommendations

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for the major pre-production exploration and development program contemplated for the past year.

Summary of Field Work

A. Lower Pontiac Area

Transect surveys were extended from reference courses in the Sunset main level over the Lower Pontiac surface and partly within the main Pontiac level. Open cuts, vein exposures and other geological details were mapped. Old open-cuts on the vein were cleaned out, and additional cuts and trenches were made to follow probable vein extensions. All new detail was mapped on 40-scale.

In general, surface stripping indicated that the mineralization within the area of the higher (offset) groups of open-cuts was too weak and restricted to warrant further near-surface testing.

Open-cutting and the single drill-hole on the lower segment of the Lower Pontiac vein extension showed up some locally important ore sections. Generally good vein widths and marked wall rock alteration were observed or indicated by this work. Possibly most important, the sinuous pattern of the productive part of the vein was shown to be continuous to the northeast of presently-stoped ground. Three or more drill holes are required to test this vein section, and should be placed to test the structure above the panel of argillites exposed in the underground workings.

Logs of holes drilled this season are as follows.

D.D. Hole # 12-A.

Bearing: 5 45 degrees E.

Dip - minus 14 degrees.

Location of collar: 110' N of sta. P-7

- 0-122' Fresh porphyritic granite.
- 122-124 Bleached granite; sparse pyrite and traces Pb S.
- 124-129.5 Vein; quartz and silicified granite with moderate amount of pyrite and scant Pb-Zn.
- 129.5-155 Fresh porphyritic granite.

This intersection is estimated at approximately 3 feet @ 1.5% Pb; 2% Zn; Au & Ag not tested.

D.D. Hole # 13-A.

Bearing: N 45 degrees W.

Dip: minus 62 degrees.

Location of Collar: @ geophysical sta. 7-E.

Purpose: To test geophysical anomaly.

- 0-19' Weathered quartz-feldspar porphyry dike
- 19-24' Fresh " " "
- 24-111 Porphyritic granite; 3.5' core lost in soft section (vein or fault) at 107-110.5'.
- 111-120 Porphyritic granite.
- 120-167 Quartz-feldspar porphyry dike.
- 167-197 Thin-bedded altered sediments; locally fair pyrite.
- 197-222 Quartz-feldspar porphyry dike or sill.

With this hole the anomaly gave negative results, but fault, dike, and bedding intersections suggest a favorable vein structure in this area. Exploration here will be best accomplished at a horizon closely above the main level of the Lower Pontiac workings. Geological information in this area has been gained at a low cost, however, if this work had been accomplished four to five years earlier

much valuable time would have been saved and diverted to other exploration this year.

B. 6040 Adit Area

A small amount of stripping closely below the adit was accomplished. Heavy overburden curtailed progress, but evidences of strong veins with appreciable mineralization were had over the short section of the vein that it was possible to expose. It was definitely established that further exploration must be accomplished by drifting and drilling.

C. Geophysical Survey

In this survey approximately 5.2 miles of geophysical cross-lines were traversed. Apparatus operating @ 1000-cycle frequency was used. The maximum depth range under existing operating conditions appeared to be about 150 feet, but depends largely on the conductivity of ^{the} vein section being tested. The susceptibility of the different classes of ore varies widely; hence the simple presence or absence of anomalous zones does not evaluate ore bodies or completely eliminate areas for further investigation. Briefly, strong anomalies will be had on any relatively shallow, highly-conductive, buried material. False anomalies, such as buried pipe-lines, tracks, water-courses, contacts, etc. must be sorted out by geological elimination. Conductivities of some common minerals compare as follows:-

- Graphite - excellent
- Pyrite - fair to good
- Galena (PbS) - weak to only fair
- Sphalerite (ZnS) - not conductive

From the above it is evident that pronounced anomalies ^{on} typical Scranton ore depend on the association of some pyrite with the usual galena - sphalerite combination. ^{Consequently, some 50-70% will be missed.} The actual evaluation of all anomalies, weak or strong, has to be determined by stripping, drilling, or tunnelling.

In preparation for the geophysical survey, a series of grids were layed out over the probable trace of the vein. Transit survey control was extended from the Lower Pontiac area to a point beyond the northeast adit of the Upper Pontiac workings. From this survey line, the geophysical base lines were established and cross-lines layed off and cut out at 150-foot intervals. These cross lines were staked at 50-foot and 100-foot intervals, and were traversed by the geophysical operator and his E.M. receiver. Grid detail and anomalous zones, lettered "A" to "I" are shown on the accompanying 200-scale "Preliminary Plan, Electromagnetic Survey." Profiles of receiver readings are shown beside each cross-line. As different interpretations of zones are possible by joining critical points on the profiles, the enclosed map represents our interpretation - substantiated as much as possible by knowledge of the areal geology.

Within the 6040 - Sunset section, zone "H", over the Sunset workings suggests a southwesterly extension of the known ore zone. E.M. variations over the 6040 section were generally negative, however the terrain above and to the west of the adit was unsuitable for satisfactory results. To the north of the Sunset workings anomaly "I" is sufficiently well pronounced ~~for investigation~~ to encourage further investigation.

Over the Lower Pontiac workings anomaly "G" in part indicates ore remaining in the slope area, and,

in part, an ore extension closely to the northeast of the stope. Anomaly "F" represents pipe-line interference. One section of anomaly "E" has been discounted by drilling at station 7-E. Its value through cross-lines 13, 14, and 15 has yet to be determined.

In general the geophysical survey of the Lower Pontiac area, like the geological interpretations, indicates that future exploration of the vein should be done on a horizon a little above that of the present workings and close by them; surface drilling of the higher offset vein segments is at present not warranted.

Within the Upper Pontiac section three or more marked anomalous zones were indicated. "A" and "B" are alternative, or closely-related, zones depending on the method of correlation between cross-line profiles. "C" is strong and distinct, while "d" is a weak but extensive zone along the general course of the vein to the southwest of the old workings. Structurally, this latter section is favorable for ore occurrence; the weak anomaly is perhaps due to low pyrite content, blanketing by heavy overburden, or mineralization close to the limiting depth range of the apparatus. In general, the E.M. survey has given its best indications over Upper Pontiac grounds.

Summary of Exploration

With the completion of this year's field work it is felt that preliminary investigations have progressed far enough to allow detailed consideration of the ~~out~~ the major program of exploration and development A-Upper Pontiac

Based on records of past production, probable ore grades.

extent of the former ore body, together with all favorable geological and geophysical indications, the major program should be centered within the Upper Pontiac area. Locally three attractive exploration possibilities are present; (a) the downward extension of the former ore shoot, (b) the southwesterly extension of this same zone of mineralization, (c) the extension of the Blanket vein ore shoot - particularly its zone of intersection with the main north-easterly striking veins. These all appear to be excellent possibilities.

B - Lower Pontiac

Geophysical and geological data warrant further drill-hole exploration of the vein segment immediately to the northeast of the present workings. Any ore located in this section will be readily accessible to development and mining, with a minimum of pre-production expense.

C - Sunset Area

Geophysical data confirm the supposed southwesterly extension of the existing ore shoot. In addition there is an excellent possibility that this ore shoot will continue to depth below the existing sub-level drift. As a start on development here some underground drilling is fully warranted.

North of the known ore zone, anomaly "I" is recommended as a worthwhile and readily accessible section for further exploration.

D - 6040 Adit Area

On the basis of information gained, during the 1953 and 1954 seasons, concerning local widths, grade, and structural trends, it is recommended that a program of development be initiated in this area.

Ore Reserve Classification

8(a)

The following estimates are intended to present Scranton's ore position as nearly as can be established at this stage. As metal prices have firmed in recent months, net smelter values are those used in Progress Report No. 2 of 1953.

1. Indicated

- (a) Southwest Sunrise - 8600 tons @ \$23.73 per ton
- (b) Sunrise Basin - 10400 tons @ 18.05 " "

2. Probable

- (a) Sunset Mine Extension - 1500 tons @ \$25.00 per ton
- (b) Pontiac Mine " - 1500 tons @ \$25.00 " "

3. Potential

- (a) Lower Pontiac N.E. Extension - 2000 tons @ \$25.00 per ton
- (b) Grandview - Lower - 1500 tons @ \$20.00 " "

Within this latter category, no tonnage has been assigned to the Upper Pontiac area, as there is little data on which to form an estimate. It is believed, for reasons presented previously, that the greatest potential is to be found in this section.

Total of the above gives a gross estimated reserve of 25,500 tons of Indicated, Probable, and Potential ore. The average net smelter value is sufficiently high to allow mining and milling but, as yet, is insufficient to fully guarantee the return of all pre-production or development expenditures. For this reason development of the Upper Pontiac is recommended as the area offering the best possibility of obtaining the tonnage and grade required to sustain development of the Grandview - Sunrise areas.
later

Comparative Development Costs - Probable Returns

The following estimates are based on recent calculations of the total work necessary to bring an ore block into production. Individual costs are based on going wage and contract scales in the area:

A Grandview - Sunrise Section.

Road Construction		\$ 7,500.00
Portal Plant, Ore Run		5,000.00
Drifting	2500 ft @ \$35.00	87,500.00
Raising	1200 ft @ 20.00	24,000.00
Diamond Drilling	1500 ft @ 4.00	6,000.00
Total		\$130,000.00

At present, indicated and probable ore reserves in this area would return approximately \$50,000 towards amortization. For this reason, the brief program in the 6040 section is recommended as an inexpensive exploration effort to prove up additional ore.

B. Recommended Program

Estimated total cost, approx. - - \$ 90,000

With the opportunity presented by several likely target areas, it is felt there is an excellent possibility of developing 10,000 tons or more of better-grade ore, to return development costs and provide a surplus for later development.

In summary, we feel that the preliminary exploration so far accomplished over Stanton ground has been successful in localizing future work to four main target areas and in eliminating extensive sections of unlikely ground. It is also felt that the possibility of locating orebodies in one or all of these areas is sufficiently attractive to justify the program outlined below. Following the development of ore from these ^{projects}, the development of the Grandview and Sunrise ore-bodies can be started.

→ Recommended Program & Costs.

1. Upper Pontiac

access road construction	— — —	\$ 2000.00
Construction portal site	— — —	2500.00
Crosscutting	— 400'	
Drifting	— 900' 1300 ft. 5'x7' @ 32.00	41,600.00
Raising	— 400 ft. 5'x6' @ 20.00	8,000.00
Underground Drilling	1000 ft. @ 4.00	4,000.00
		<u>\$ 58,100.00</u>

2. Lower Pontiac Surface Drilling

4 holes @ 150' = 600 ft @ 4.30 ————— 2580.00

3. Sunset Drilling

Underground	3 @ 150 ft = 450 ft. @ 4.00 =	1800.00
Surface	3 @ 150 ft = 450 ft @ 4.30 =	1935.00
		<u>3735.00</u>

4. 6040 Adit Area

Drifting, hand mucking	400 ft @ 35.00 =	14,000.00
Underground Drilling	200 ft @ 4.50 =	900.00
		<u>14,900.00</u>
General overhead & administrative expense	— — —	10,000.00
Total		<u>\$ 89,315.00</u>

I.

on the basis of the above costs, the whole program could be accomplished for a total expenditure of not more than \$100,000.00

This program is based on the expectation of developing at least 10,000 tons of ore @ \$30.00 per ton net smelter value which would return all pre-production expenses. Past records of Seranton production indicate that this tonnage and grade should not be too difficult to realize.

It is hereby recommended that the above program be accomplished in full, the different parts to be undertaken concurrently wherever practicable.

Respectfully submitted,
W. M. Sharp, P. Eng.
per Kootenay Mining Service Ltd.

New Denver, B.C.

November 26, 1954.

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