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PROPERTY FILE

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Owen LAKE

93L-2-07

PROPERTY FILE

CANADIAN EXPLORATION LIMITED

CROWN-GRANTED MINERAL CLAIMS

OWEN LAKE,

MORICE RIVER AREA, B.C.

CLIVE W. BALL,
Chief Geologist.

December 15th, 1955.

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SUMMARY AND CONCLUSIONS

* Previously owned by Canadian Exploration Limited.

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I. INTRODUCTION

The following report is based on a study of numerous reports contained in the Company's files and dating from 1928 to 1949. The majority of the reports are by H.L. Batten. Since the reports are not accompanied by progress plans, it is difficult to completely refer to individual assays by their location. Some of the maps are quite sketchy and the work was never brought right up to date. However, the reports are detailed and it is felt that the following analysis indicates the salient features of the property.

II. LOCATION AND ACCESS

The property is situated on Owen Lake about 27 miles by road south of Houston, a station on the Canadian National Railway between Prince George and Kitimat. Latitude $54^{\circ} 05'N$, Longitude $126^{\circ} 45'W$.
Prince Rupert

The claims are situated in rolling undulating country with average elevation about 3200 feet above sea-level. Owen Lake itself is about 3000-feet above sea-level. On the south-westerly side of the lake and rising from it is Madina Mountain which is a conspicuous landmark rising to an elevation of about 6500-feet. Climatic conditions are good, and while the winters are quite cold the snowfall is not very heavy, usually between two and three feet."

III. MINERAL CLAIMS AND SURFACE RIGHTS

A total of seventeen crown-granted mineral claims are held by the Company. They are listed in Appendix I and surface rights are held over Earl Nos.1 and Earl No.2 Mineral Claims.

IV. POWER, WATER AND TIMBER

There is no water power available close by and oil or other fuel would be required until operations became large enough to justify the development of power. Water power is reported on the Morice River, some seven miles distant.

A good supply of water for domestic purposes is available from a small lake at the head of Wrinch Creek. Size of timber is not reported but it is understood that fair stands of timber, such as would be suitable for mine use, are available on the property. The timber consists of poplar, jack pine and some spruce.

V. HISTORY

The earliest reference to the property is in 1915 when several claims were held and initial recordings were made in about 1912. The Diamond Belle and Silver Queen were kept up and the latter group were surveyed and crown granted. An option on both these properties was obtained in late 1923 by the Federal Mining and Smelting Company and work commenced on a small scale on the Silver Queen Group. Sampling was carried out in 1916 and 1923 by J.D. Galloway, Resident Mining Engineer, and by the Federal

Mining & Smelting Company. In 1928, F.H. Taylor acquired options on the Silver Queen, the Diamond Belle and the Chisholm property and made active preparations to commence mining operations. It was planned to run a long cross-cut tunnel at a point 100-feet above the level of Owen Lake to probe in depth the Silver Queen and Diamond Belle Vein systems. Development work was carried out through 1929 and by December 31st, the main cross-cut had advanced a distance of 2,930-feet from the portal. In all a total of thirteen veins were cut. In 1930 some diamond drilling was carried out but operations ceased in the spring of 1930.

In 1941, Canadian Exploration Limited acquired the Owen Lake properties and the Cole property was optioned. During the summer of 1941 an examination was made of the Cole and Owen Lake groups by B.I. Nesbitt under the supervision of H.L. Batten. Some short hole diamond drilling was done on the Cole Group and surface geological mapping was carried out. The Earl cross-cut adit was mapped and sampling was carried out in the drifts off the adit between the portal and 860-feet.

Assessment work was completed on the property in 1946 and 1947 and the adit was cleaned out from 860-feet to the face at slightly under 3000-feet from the portal. No work has been done on the properties since 1947, except for surveying and crown granting by G.M. Christie.

VI. REGIONAL GEOLOGY

The Owen Lake area is about 30-miles east of the Coast Range batholith. The predominant rock types are andesite porphyrites and associated tuffs and breccias of the volcanic series. Overlying this series is a group of Upper Cretaceous or later argillites and graywackes. Biotite granite cuts these sediments on Mount Madina and a microdiorite stock cuts the volcanic series at the Owen Lake property. The most important mineral deposits of the area are associated with the micro-diorite stock. However, although the veins show preference for the micro-diorite, they also occur in the andesite and andesite tuffs which cover a large part of the area.

The geological formations of the Owen Lake area were mapped by A.H. Lang in 1929 for the Geological Survey of Canada (Summary Report 1930, Part C). In 1938 and 1939 he mapped the surrounding area and published his report, the Houston area, in 1941 (see list of references at end of this report).

The volcanic series underlies 75 per cent of the Owen Lake map area and trends Northwest to Southeast and dips at 15° to 20° southwest.

VII. GEOLOGY OF OWEN LAKE PROPERTY

The property is chiefly underlain by a stock of micro-diorite which intrudes and contains inclusions of andesite-porphyrite of the volcanic series. The stock is elliptical in

shape with a north-south axis of 1½-miles and an east-west axis of 1½-miles. Almost three-quarters of this stock is on the Company's property. A few outcrops of tuffs, breccias and flows of the volcanic series are present and also dykes of diabase and soda trachyte. The vein systems occupy shear zones in micro-diorite and andesite. There are two major directions of pre-mineral shearing, east-west and northwest-southeast. Dips vary from 30° to 70° and are generally to the north. The veins have been cut by post-mineral soda-trachyte dykes and displaced by strong faults. The two main directions of post-mineral faulting are 340 degrees and 050 degrees.

There are four known groups of veins on the property: the veins encountered in the first 600-feet of the Earl cross-cut adit, known as the Fortal veins; the veins found in Wrinch Canyon, the Cole Veins and the Mae or Midnight veins.

Types of Veins

Two types of veins are found on the Owen Lake property: chalcopyrite - sphalerite veins which generally carry good values in gold, silver and copper; and galena - sphalerite veins which grade into the chalcopyrite - sphalerite type, either along the strike or vertically.

The veins occur in sheared zones and hence usually contain appreciable amounts of country-rock. The gangue material in both types consists of rhodocrosite, ankeritic carbonates, barite, chalcedonic and crystalline quartz and varying amounts of included country-rock. The walls are generally free, somewhat sheared and rich in secondary pyrite. The veins which vary in width from mere stringers to nine feet, usually have sharp walls but are not as wide as the sheared zones they occupy.

The veins possess the characters of epi-thermal (low temperature and pressure) mineralization. The wall-rock alteration is of a type known as propylitization.

Nesbitt states that one vein (the Wrinch-Wackay vein) has an indicated but not explored length of at least 1500-feet and backs of at least 500-feet with no limits yet established.

Chalcopyrite-Sphalerite Veins

The visible sulphides contained in the chalcopyrite-sphalerite veins include chalcopyrite, sphalerite, pyrite and tetrahedrite. In addition alaskaite, a sulphide of silver, lead and bismuth has been identified under the microscope and arsenopyrite is indicated by the presence of arsenic up to 0.3 per cent. Assays of samples from these veins reveal that moderate to high gold and silver values occur only where copper is present, but they do not vary directly with the copper content of the veins.

Sphalerite-Galena Veins

The sphalerite-galena veins contain sphalerite, pyrite and galena in a gangue of rhodochrosite, barite, ankeritic carbonates and chalcedonic and crystalline quartz. Assays reveal their gold and silver values to be very low.

VIII. DESCRIPTION OF VEINS AND WORKINGS

(1) The Portal Veins

The Portal Veins are five in number and are located in the Earl adit. Nesbitt postulated that the five units were the result of faulting of one vein. The veins occupy east-west shear zones in highly propylitized micro-diorite with dips varying from 30° to 70°. Veins Nos. 1, 2, 3 and 4 dip to the north and No. 5 dips to the south. They vary in width from two inches to 5.5-feet.

Vein No. 1 occupies a shear-zone 125-feet from the portal. It has been drifted on east of the adit and a short distance west. At 40-feet east of the adit a slightly narrower but highly cupriferous vein branches off from the main vein and continues parallel to it for another 40-feet. There it is terminated by a very strong fault. The main vein has a length of about 60-feet east of the adit before it is displaced by the same strong fault as its branch vein. These two veins are of the chalcopryrite-sphalerite type and contain in many places high values in gold, silver and copper. The western limit of the main vein has not been reached. The dips vary from 30° to 35° to the north.

(E) Five samples of Vein No. 1 taken by Nesbitt in 1941 indicate an average width of 3.4-feet at 0.05-oz. gold per ton, 11.4-oz. silver and 0.9% Copper.

Four samples of the faulted section of Vein No. 1 indicate an average width of 1.0-feet at 0.21-oz. gold per ton, 72.26-oz. silver per ton and 5.7% Copper.

Three samples of the side vein indicate average width 3.2-feet at 0.45-oz. gold per ton, 29.2-oz. silver per ton and 2.0% Copper.

Vein No. 2 crosses the adit 210-feet from the portal. Its strike and dip are the same as Vein No. 1. Nesbitt believed that Vein No. 2 is the faulted continuation of the side vein from No. 1 and that vein No. 3 is the faulted continuation of the main Vein No. 1.

Vein No. 2 has a limited length of 130-feet in drift No. 2. Both ends are displaced by very strong faults.

Thirteen samples of Vein No. 2 in drift No. 2 indicate average width 3.1-feet at 0.06-oz. gold per ton, 5.2-oz. silver per ton and 0.8% Copper.

Vein No. 3 crosses the adit 210-feet from the portal. It is

faulted out after being followed 50-feet east of the adit. It probably extends 80-feet to the west of the adit. This vein is of the chalcopyrite-sphalerite type and dips 65° North.

From five samples taken of Vein No.3 the average is 1.3 feet at 0.06-oz. gold per ton, 7.3-oz. silver per ton and 1.3% Cu.

Vein No.4 is narrow and sparsely mineralized with a little chalcopyrite, sphalerite and galena. It crosses the adit 380-feet from the portal and is exposed in drift No.4 for 40-feet east of the adit to where it is faulted out. It dips 70° north. Exact width is not given and no assays have been reported.

Vein No.5 is 420-feet from the portal and has been drifted on for 25-feet to the east of the adit. It averages one to two inches in width and contains chalcopyrite and sphalerite.

The veins in drifts 1, 2 and 3 are the only ones of the Portal Veins which offer reasonable possibilities of containing ore. Of these, Vein No.1 is the only one of which the total length is not fairly definitely established and it cannot be drifted on very far to the west of the adit before breaking through to surface.

(ii) Additional Veins in Earl Adit

(a) At 1528-feet a well-defined fissure was encountered and workings driven north-westerly a total distance of about 240-feet. The drift follows continuously a well-defined vein fissure which is fairly well mineralized. The strike is approximately 330° and dip about 70° north. The average of five samples is 1.9-feet at 0.04-oz. gold per ton, 7.8-oz. silver per ton, 0.6% lead, 1.3% zinc and 1.2% copper. The east drift also exposes the vein fissure which is similar in character to that exposed in the drift north-west.

(b) At 2655-feet from the portal a strong well mineralized vein about 10 or 11-feet in width is exposed. This vein is well-defined, striking 315 degrees and dipping at about 70° north-east. This vein is well exposed in a drift west about 100-feet in length. The drift east is in loose broken country and no vein is to be seen. The average of seven samples is 4.1-feet at 0.07-oz. gold per ton, 3.1-oz. silver per ton, 2.0% Lead, 11.2% Zinc and 0.3% Copper. It is possible that this vein may be the Wrinch - Mackay vein.

(iii) The Mackay Vein was opened up in 1947, and has been followed for a length of about 300-feet on surface. H.L. Batten considered that it was possibly an extension of the Wrinch Vein.

The average of five samples of the Mackay Vein is 3.4-feet at 0.02-oz. gold per ton, 5.2-oz. silver per ton, 2.1% Lead and 9.1% Zinc.

The Mackay Vein is quite sinuous in strike but the dip

averages about 60° north-east. Where exposed in the surface cuts the vein is very badly leached.

(iv) Wrinch Canyon Veins. Most of the work on the Wrinch property has been done on north-westerly striking veins exposed in the canyon of Wrinch Creek. They are strong shears and carry persistent ore of stopping width where exposed. There are four veins proved in this section. The lower three extend to the west of the Canyon and the upper one to the east. The veins strike north-west to south-east.

The lower two are of the galena-sphalerite type and the results of exploration of them by other companies have proven disappointing. The upper two are of the chalcopryrite-sphalerite type and were considered by Mesbitt to be parts of the same vein displaced about 90-feet horizontally. Systematic sampling and mapping of the 220-feet of drift was carried out by Mesbitt in 1941. This drift follows the upper one of the two chalcopryrite-sphalerite veins which is known as the main Wrinch Canyon Vein. The vein occupies a shear in an andesite porphyrite inclusion in micro-diorite. It strikes northwest-southeast and dips at 45° to 70° north-east. It has an average width of between three and four feet, and in one place is 9.0-feet wide. Steep northerly dipping faults and shears which trend N.50°E displace the vein moderately but it is easily followed in the 220-feet of drift. Towards the end of the drift a fault which is nearly parallel to the vein begins to cut it off with the result that at the end of the drift the remaining portion of the vein is only one foot wide.

H] "Average for 29 samples taken in the main Wrinch drift is 2.9-feet at 0.11-oz. gold per ton, 11.1-oz. silver per ton and 2.3% Copper.//

B.I. Mesbitt scouted the possibility that the main Wrinch Vein and the MacKay Vein were one and the same vein and he considered that the MacKay Vein may have been met in the Earl adit, at 2600-feet from the Earl portal. H.L. Datten agrees that the Wrinch and the MacKay vein are probably one and the same vein but doubts if any projections can be made with certainty from surface to the Earl adit.

(v) The Mae Veins. Three veins occur in the vicinity of the Chisholm shaft from which two cars of reportedly good ore were shipped about 1915.

J [The Chisholm shaft is caved but judging by the dump it is about 40-feet in depth. A vein is exposed in a cut 70-feet south-east of the shaft and this is the vein on which the shaft was sunk and it is named Mae No.1 Vein. One assay of a grab sample from the dump ran 0.04-oz. gold per ton, 21.4-oz. silver per ton, 5.4% Lead and 22.8% Zinc. Mae No.2 Vein is about 85-feet south-west of No.1 vein and the average of three samples is 3.0-feet at 0.09-oz. gold per ton, 20.2-oz. silver per ton, 9.2% Lead and 0.8% Zinc.//

Mae No.3 Vein is about 60-feet south-west of No.2 and the average of four samples is 3.7-feet at 0.02-oz. gold per ton, 4.4-oz. silver per ton, 1.4% Lead and 6.7% Zinc.

Grab samples taken of the dump material indicate gold values up to 0.40-oz. per ton, silver from 5.2-oz. per ton to 29.2-oz. per ton and high lead-zinc values.

(vi) The Cole Veins. These veins are not covered by the Company's property. However, as surface sampling and shallow surface diamond drilling was carried out by Canadian Exploration Limited in 1941 a description is considered necessary to complete this report.

Several veins of the galena-sphalerite type have been found on the Cole property. On the strongest of these, an 80-foot shaft has been sunk and 123-feet of drifting carried out. Stripping has exposed this vein for 400-feet. Development work on the other veins consists of stripping and a few shallow pits. In 1941 a total of 663-feet of diamond drilling in six D.D. holes was completed by Canadian Exploration Limited.

The main vein occupies a north-westerly trending, steeply dipping shear in a light grey-green porphyry very close to the contact between micro-diorite and the porphyry. It is of very strong appearance with an average width of over 3-feet and a proven length of over 400-feet. It is made up of bands of mineralized vein matter and pyritized country-rock. The vein as do all others on the Owen Lake property weathers to a residual mass of iron and manganese oxides.

The deepest intersection obtained in the diamond drilling is only about 75-feet below surface. The drill logs are not available. However, it is assumed that only weak mineralization was met in the veins, since Nesbitt has stated that the assays of the dump material are the only ones that are near commercial grade. The percentage of core recovery is not indicated by Nesbitt and in the absence of this important data it is impossible to properly analyse the drilling.

Assays of the various types of ore from the dump material are given by Nesbitt, but these are not quoted here because they are not fully representative. Suffice it is to say that good values for silver, lead, zinc and copper have been obtained in assays of samples and specimens.

IX. BUILDINGS AND EQUIPMENT

No inventory of equipment has been made since H.L. Batten last checked it in 1949. At that time there was a cookhouse for 20 men and a small cabin in addition to a dry and a blacksmith shop and stables. The only other valuable equipment listed by H.L. Batten consisted of one 2½ h.p. air cooled gas engine and a fan which were stored in the cookhouse. Reference was made to rail and pipe in all underground workings.

To-day it is felt that all buildings will be in poor shape and little or no value could be placed on any remaining equipment on surface.

X. TONNAGE OF POSSIBLE ORE

In a summary report on the Owen Lake properties dated December 10th, 1948, H.L. Batten stated that there were very good prospects of the properties developing a tonnage in excess of 140,000-tons. No mention was made of the average grade of ore expected, yet Mr. Batten made the following statement: "The results of checked sampling of the Branch veins, Nos. 3 and 4, indicate that total values in gold, silver, copper, lead and zinc will amount to not less than from \$15.00 to \$20.00 per ton. The grade will be dependent whether or not there is dilution from the walls and barren gangue."

As shown in Appendix III, it is now considered that a tonnage of Possible Ore of the order of 500,000-tons is indicated with estimated average grade 0.06-oz. gold per ton, 8.2-oz. silver per ton, 2.0% Lead, 4.4% Zinc and 0.5% Copper.

XI. ECONOMICS

(i) Estimated Average Value of Ore

An overall average grade has been estimated. This has been obtained by averaging out the weighted assay values of the various veins which are considered commercial or near commercial. Statistically this is not entirely justified but it is considered permissible in view of the fact that the two different types of ore grade into one another horizontally and vertically in the same vein. Abnormally high values have been omitted in arriving at the average values, but no allowance has been made for dilution. It is considered, however, that in certain sections of the Owen Lake veins we should always expect dilution from the walls and from "horses" of waste caused by splitting of the veins.

Based on the average assay value calculated on the basis of Table I, the net value of the ore is \$16.00 per ton after allowing for smelter charges, but exclusive of freight on concentrates.

(ii) Estimated Production Costs

The following costs are estimated for a 100-ton per day operation at Owen Lake:-

	<u>Cost per Ton of Ore</u>
Mining (including development)	\$12.00
Milling	3.00 -
Overhead	<u>1.00</u> ✓
TOTAL COST PER TON OF ORE	<u>\$16.00</u>

In addition to the above figures allowance must be made for freight on concentrates estimated to be equivalent to \$3.00 per ton of ore. That is, assuming that lead and zinc concentrates were acceptable at C.A. & S. Co. smelters at Trail, B.C., and copper concentrates at A.S. & R. Co. smelter, Tacoma, Washington, U.S.A.

On the average grade indicated in Table I, the net value of the ore is approximately \$16.00 per ton; therefore, the ore is below mining grade to-day, especially as we would have to make allowance for dilution. If hand-sorting could be resorted to underground, or if "sink and float" could be applied successfully, it would be possible to supply a higher grade mill feed. However, this cannot be considered as practicable until actual tests have been made.

(iii) Metallurgy.

In 1928 G.A. Gillies conducted tests on the Owen Lake ore.

Gillies carried out a selective flotation test on approximately 2½-lb. of ore. The tests were by no means exhaustive but according to Gillies showed "an almost perfect tailing product carrying values of about 10 cents in gold and silver combined and very low values in copper and zinc."

Most of the gold and silver stayed in the copper-lead concentrate but a considerable amount of the gold and silver stayed with the zinc.

Modern metallurgical tests are required on the Owen Lake ore, and for this purpose pilot scale tests should be conducted on parcels of ore not less than 1,000 pounds in weight. At the same time mineragraphic tests should be made on representative suite of ore specimens.

(iv) Future Prospects.

K [//The property has definite possibilities for the future and the potential value of the ground is considerable. On present showings it is considered that 500,000-tons of Possible Ore is indicated. Even with more favourable metal prices, however, a mill of greater capacity than 100-tons per day would hardly be warranted.

The following work should be considered in any future prospecting:-

- 1) Geo-chemical work using bio-geochemical tests should give positive results because of the relatively thin cover of overburden.

- 2) Diamond drilling should be used in order to test the known veins and any geo-chemical anomalies.
- 3) All surface cuts should be surveyed and checked. Also it is important to estimate depth of overburden prior to planning diamond-drilling.
- 4) Before examining the drifts and adits, it would be necessary to blow air for a considerable period of time in order to clear the gases. Timber in sections of bad ground would also have to be closely examined and replaced where necessary.
- 5) In the early stages of any possible future development plans, it is very essential to have metallurgical tests conducted on parcels of ore not less than 1,000 pounds in weight. The success of the property will to a large extent depend on suitable application of selective flotation milling.
- 6) The pattern of faulting will be established after some experience has been gained in mining the ore bodies and with the use of surface and underground diamond drilling the solution of the pattern will be made thus enabling a reliable development plan to be devised for successful mining.

SUMMARY AND CONCLUSIONS

A large number of veins have been uncovered on the property but work to date has been inconclusive. Further exploration is justified and for the Portal veins and Wrinch-Mackay veins alone a tonnage of Possible Ore of the order of 500,000-tons is indicated with average grade 0.06-oz. Gold per ton, 8.2-oz. silver per ton, 2.0% Lead, 4.4% Zinc and 0.5% Copper. The estimated net value of this ore is \$16.00 per ton after allowing for smelter charges.

For a 100-ton per day operation, the estimated cost of mining, milling and overhead is \$16.00 per ton exclusive of freight on concentrates, which is estimated be an additional \$3.00 per ton. It is, therefore, obvious that a profitable operation is not possible to-day.

The average width of the veins is 3.4-feet and dilution is expected from the walls and "horses" of waste.

Post-ore faulting has considerably disrupted the veins making it difficult to lay out a definite mining development plan. Nevertheless, as mining proceeds in the future the fault pattern will be determined so that it will be possible to predict to some degree the relative direction and magnitude of throw along the fault planes.

Future exploration must make use of geo-chemical prospecting and surface and underground diamond drilling to indicate the extent and grade of the veins which so far have not been thoroughly tested along the line of strike. Further testing is definitely warranted on the Portal, Wrinch-Mackay and Mac Veins.

In a supplementary report it is proposed to make definite suggestions as a basis for future prospecting by elaborating the various ideas set forth in the section entitled - Future Prospects.

Clive W. Ball
CLIVE W. BALL,
Chief Geologist.

CWB/JL.

Copy to: Mr. C.W. Clark
Mr. J.D. Simpson
Mr. G.A. Gordon

CANADIAN EXPLORATION LIMITEDOWEN LAKE PROPERTY

<u>Name of Mineral Claim</u>	<u>Lot No.</u>	<u>Crown Grant date</u>	<u>Area Acres</u>	<u>Tax at 25¢ per acre</u>
Silver King	6547 ✓	Jan.13/42	51.65	13.00
Tyce	6548 ✓	" "	50.51	12.75
Silver Queen	6549 ✓	" "	51.18	13.00
Silver Tip	6550 ✓	" "	49.76	12.50
IXL	6551 ✓	" "	51.01	13.00
Earl No.1	7399 ✓	Nov.20/47	51.65	13.00
Earl No.2	7400 ✓	" "	51.65	13.00
Earl No.1 Fraction	7401 ✓	Oct. 5/51	11.77	3.00
Earl No.3	7402 ✓	Oct.10/51	35.24	9.00
IXL No.3	7403 ✓	" "	42.44	10.75
Lucy	7404 ✓	Oct. 6/51	51.03	13.00
Mary	7540 ✓	Oct. 5/51	51.65	13.00
Lili Fraction	7541 ✓	" "	23.03	6.00
Marg Fraction	7542 ✓	Oct. 6/51	50.24	12.75
Asta Fraction	7543 ✓	Oct.10/51	33.43	8.50
Mae No.1	7544 ✓	Oct. 6/51	46.29	11.75
Mae	7545 ✓	" "	49.82	12.50

The above taxes were paid in July, 1955. In addition the following taxes were paid:-

Lot 3428 lying within the boundaries of Lot 7399, improvements, School District 054 Total tax = \$7.17.
Also Lot 7400, improvements School District 054 Total Tax = \$7.17.

Total payment Owen Lake property, July, 1955 = \$204.84

Recording Office: Smithers, B.C.
Mining Division: Gmineca.

December 15th, 1955.

CLIVE W. BALL,
Chief Geologist.

CANADIAN EXPLORATION LIMITED

OWEN LAKE PROPERTY
ESTIMATED AVERAGE VALUE OF ORE.

Average grade as calculated in Table I:
0.06-oz. gold per ton, 8.2-oz. silver per ton,
2.0% Lead, 4.4% Zinc and 0.5% Copper.

	<u>Net Value after Smelter Charges</u>
<u>GOLD:</u> Assume 80% recovery - Gold at \$35.00 per oz. and payment on 92% of gold in conc. Net return on gold - (0.06 x .8 x .92 x \$35.00) =	\$1.54 1.66
<u>SILVER:</u> Assume 80% recovery - Silver at 80¢ per oz. and payment on 95% of silver in conc. Net return on silver ¢(8.2 x .8 x .95 x 0.80) =	\$4.98 5.00
<u>LEAD:</u> Assume 90% recovery - Lead at 10¢ per lb. Estimate 3¢ net after smelter charges ✓ 2.0% is equivalent to 40-lb. lead to the ton of ore. Net return on lead - ¢(40 x .9 x 0.08) =	\$2.88 3.00
<u>ZINC:</u> Assume 90% recovery - Zinc at 10¢ per lb. Estimate 6¢ net after smelter charges ✓ 4.4% is equivalent to 88-lb. Zinc to the ton of ore. Net return on Zinc - ¢(88 x .9 x 0.06) =	\$4.75 5.00
<u>COPPER:</u> Assume 80% recovery - Copper at 24¢ per lb. Estimate 20¢ net after smelter charges ✓ 0.5% is equivalent to 10-lb. Cu. to the ton of ore. Net return on copper - ¢(10 x .8 x 0.20) =	\$1.60 1.75
TOTAL NET RETURN PER TON OF ORE	\$15.75 16.66 or say, \$16.00

CLIVE W. BALL,
Chief Geologist.

December 15th, 1955.

REFERENCES

OWEN LAKE, BRITISH COLUMBIA

I. GOVERNMENT REPORTS

- (i) Geol. Surv. Canada Sum. Report, 1927, Part A,
pp. 62-91.
- (ii) Annual Reports, Minister of Mines, B.C., for the
following years: 1915, p.78, 1916 pp.52 and 152,
1923 p.113, 1924 p.99, 1928 p.170, 1929 p.171,
1930 p.111.

TABLE I

CANADIAN EXPLORATION LIMITED
SUMMARY OF AVERAGE ASSAY VALUES
OWEN LAKE VEINS

<u>Name of Vein</u>	<u>Width Feet</u>	<u>Gold Oz. per ton</u>	<u>Silver Oz. per Ton</u>	<u>Lead %</u>	<u>Zinc %</u>	<u>Copper %</u>
Portal #1	3.4	0.05	11.4	-	-	0.9
Portal #2	3.1	0.06	5.2	-	-	0.8
2655' Vein in Earl Adit	4.1	0.07	3.1	2.0	11.2	0.3
Mackay	3.4	0.02	5.2	2.1	9.1	-
Main Krinch Vein	2.9	0.11	11.1	-	-	2.3
Mae #2	3.0	0.09	20.2	9.2	0.8	-
Mae #3	3.7	0.02	4.4	1.4	6.7	-
Average	3.4'	0.06-oz. Au/ton	8.2-oz. Ag/ton	2.0% Pb	4.4% Zn	0.5% Cu.

Clive W. Ball.
 CLIVE W. BALL,
 Chief Geologist.

December 15th, 1955

CANADIAN EXPLORATION LIMITED

OWEN LAKE PROPERTY

ESTIMATE OF TONNAGE

Portal Veins

Possible Ore

2 Veins each about 3' wide,
Depth = 750' estimate
Strike length = 1000-foot estimate
Therefore, Tonnage = $(2 \times 3 \times 750 \times 1000) =$
300,000-tons 300,000

Wrinch-MacKay Veins

Average about 3' wide
Depth = 750' estimate
Strike Length = 1500' estimate
Therefore, Tonnage = $(3 \times 750 \times 1500) =$
225,000-tons, or say, 200,000 200,000

Mae Veins

Not sufficiently tested to indicate possible
tonnage

TOTAL 500,000-tons
Possible Ore.

CLIVE W. BALL,
Chief Geologist.

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