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SHERWIN F. KELLY
Geophysicist and Geologist

92H/NE-172

SUMMARY REPORT AND RECOMMENDATIONS ON THE PAYCO MINES LTD. NPL CLAIMS NEAR ASPEN GROVE, B. C.

CLAIMS, LOCATION AND ACCESS

The property, belonging to Payco Mines Ltd., consists of 40 mineral claims, Pay Nos. 1 to 40, inclusive, four claims wide (east and west) and ten claims long. The group lies on the east side of the Merritt-Princeton Highway, eighteen miles southeast of Merritt, B. C. Part of Kentucky Lake and Alleyne Lake lie along, and just within the east boundary of the claims. Access to the camp, at the north end of Alleyne Lake, is by the Kentucky Lake Road, a gravel highway which turns off to the east from the Merritt-Princeton Highway about two and a half miles south of Aspen Grove. The property lies three and a half miles to the northeast along this gravel road. From camp, in the northeast part of the claims, a network of bush roads gives access, by jeep or truck, to much of the property.

TERRAIN

The topography varies from rolling valley bottom, near the lakes, to precipitous mountain slopes on the west. Most of the property lies between 3, 000 and 4, 000 ft. elevation. Outcrops are rare in the valley, but abundant on the hill slopes - the Fairweather Hills. The area varies from open pasture land to fairly heavily wooded ground. Part of the area was burned over a few years ago. Timber and water are available.

GEOLOGY

The eastern portion of the Pay claims is evidently underlain by a major, structural feature of this area, the Summers Creek fault. It is a north-trending shear whose location is marked by the alignment of such surface indications as Summers Creek Valley, the elongated lakes - Missezula, Bluey, Kentucky and Alleyne, and the Quilchena Creek valley. On the Pay group, this fault runs through an area covered by overburden.

In the area of outcropping rocks, on the Fairweather Hills, the evidence to date indicates the predominant formations to be fragmentals of the Nicola series of volcanics and sediments of Triassic age. As exposed on the Pay group of mineral claims, these Nicola rocks consist almost entirely of massively bedded, volcanic fragmentals, such as tuffs, breccias and agglomerates. The bedding indications are rather indistinct so the attitude of the beds is uncertain. These beds are cut by a variety of cleavages, partings, joints and fractures of several orientations and dips.

MINERALISATION

The Nicola series was invaded by the magmas (molten rocks) of the Coast Intrusives, of Jurassic age, consisting largely of diorite, quartz diorite and related rock types. These intrusives brought mineralising solutions which emanated into the surrounding rocks as the molten magmas cooled and solidified. The Nicola series, from the U.S. border north, via Princeton and Merritt to Kamloops, has thus been the host rock for copper mineralisation brought in by the Coast Intrusive bodies (stocks, plugs and batholiths) which dot the area. The Copper Mountain Mine of the Granby Mining Co., near Princeton, and the Craigmont Mine, near Merritt, are outstanding examples of the results of this mineralising process. Payco property lies between these two famous deposits, a little more than half-way from Copper Mountain to Craigmont.

Promising concentrations of copper are found at a number of localities on the Payco Mines claims. The minerals carrying copper values consist of malachite, cuprite, native copper, chalcocite, bornite, and chalcopyrite. The important copper minerals, from a commercial point of view, are chalcocite, bornite, and chalcopyrite. Pyrite is also fairly widespread.

The present indications point to a two-fold control in the deposition of the copper-bearing minerals. The malachite, chalcocite and some of the bornite occurrences are most noticeable in zones of fracturing, such as cleavages and shears. The chalcopyrite and much of the bornite, however, appear to have been deposited in certain favorable horizons, or beds, in the host Nicola series. The continuing exploration will probe these controls for the purpose of evaluating their relationships and relative importance, to serve as a guide to the heavier concentrations of copper mineralisation.

EXPLORATION RESULTS

Exploration on the Pay group of mineral claims has followed several lines: surface prospecting, geological reconnaissance, geophysical and geochemical surveys, diamond drilling, air drilling and blasting, trenching and bulldozing, and bulk sampling.

A magnetometer survey was made of the claim group by R. E. Renshaw. He also took soil samples for geochemical testing for copper, and made a geological reconnaissance of the area. The geophysical (magnetic) survey revealed four pronounced magnetic anomalies. Geochemical anomalies were in general concordance with the magnetic ones.

The recent renching, blasting and diamond drilling have been mainly on Pay No. 1, No. 2, No. 7 and No. 8 mineral claims, in the general vicinity of a magnetic reaction designated "Anomaly B".

In the northeast portion of mineral claim Pay No. 2, twelve trenches and pits reveal a concentration of good copper mineralisation (mainly chalcocite but also showing malachite, cuprite, native copper, bornite and chalcopyrite) spread over an area 400 ft. in length and 400 ft. in width. Copper assays on samples from these exposures ran from 0.16% copper to 3.75% copper. About 400 lineal feet of rock face have been exposed by stripping, trenching and blasting in this area.

From two of the trenches, 100 tons of well mineralised material have been blasted out for bulk sampling and mill testing. Some 30 tons have already been trucked to Vancouver for testing. A preliminary bulk sample from these trenches assayed 2.15% copper.

Eight diamond drill holes have been put down in this same area, five of them being short holes, and three extending to depths of 500 to 600 feet. Assays of 5 ft. sections from the cores ran as high as 3.25% copper, and showed that the chalcocite mineralisation extends at least to 70 ft. depth and is succeeded down-dip by chalcopyrite.

The extensive blasting, stripping and diamond drilling conducted in the northeast quadrant of mineral claim Pay No. 2 has demonstrated the presence of concentrations of copper mineralisation of commercial tenor, and a widespread mineralisation of lower grade. Further exploration is needed to develop tonnage.

Exploration Results - Cont'd.

Mineral claim Pay No. 1 lies along the east boundary of mineral claim Pay No. 2. In the northeast portion of Pay No. 1, a copper showing in a cliff has been blasted, and a fresh face some hundred feet long opened up. A grab sample from this showing assayed 4.20% copper. Further blasting and diamond drilling and stripping are indicated here to determine the importance of this copper exposure.

Further exposures of copper have been revealed in an area lying 500 to 1000 feet southeasterly of the showings first described above. This is in the northern portions of mineral claims Pay #7 and #8. In this area, 7,000 feet of air drilling and blasting have opened up 800 lineal feet of rock face three to ten feet high. At least four zones of copper mineralisation are exposed, and from one of these showings fifty tons of material have been blasted out for mill testing and bulk sampling. Further stripping and diamond drilling are indicated for this area, to determine the importance and extent of the copper mineralisation already exposed.

The air-drilling and blasting in the areas mentioned above have opened up over 1200 lineal feet of rock faces, two to ten feet high. This has exposed a number of copper occurrences which merit intensive investigation.

There are numerous showings of copper mineralisation elsewhere on the Pay group of mineral claims which have not yet been subjected to close scrutiny. The more important ones are as follows:

In the western portion of the property, between 900 and 1200 feet south of the north boundary, an old shaft and three pits were sunk on a north-south fracture zone showing copper mineralisation in the form of malachite and chalcocite. Stripping, trenching and drilling are indicated here. Two thousand feet to the south and three hundred feet west, a high cliff face, extending several hundred feet north and south, shows a zone of chalcopyrite mineralisation. At some time in the past, a short adit four feet long, was started on this copper zone. A sample from the adit wall assayed 0.80% copper. Diamond drilling and blasting are indicated here.

Three thousand feet south of this latter showing, and three hundred feet east, an old pit is found at the foot of a small rock scarp where good chalcocite mineralisation is visible. Stripping, blasting and diamond drilling are needed here to open this up.

Some two hundred feet east of this pit, there is a strong magnetic reaction, designated "Anomaly A". This should be stripped and drilled. This anomaly lies some five hundred feet west of the showings and workings first described above.

In the eastern sector of this mineral claim group, a prominent and extensive magnetic anomaly, "Anomaly D", is depicted about 3000 feet south of the north property boundary. The anomaly lies on, or very close to the inferred trace of the Summers Creek Fault. The overburden has been found to be deep here, so diamond drilling will be necessary to test the significance of this anomaly.

SUMMARY AND RECOMMENDATIONS

Extensive trenching, air drilling and blasting and diamond drilling on several localities in the Pay group of mineral claims, have revealed concentrations of copper mineralisation of good grade. There are also a number of copper showings, widely distributed on the property, which are of promising appearance, but which have not yet been investigated. In addition, there are some magnetic anomalies whose significance needs to be determined.

Stripping, blasting and diamond drilling are indicated to determine the significance of the geophysical anomalies and the importance of the showings of copper mineralisation not yet explored. Diamond drilling in particular is required to prove the extent and grade of the more important mineral zones already opened up.

The evidence already available on this property indicates the presence of good copper mineralisation which can be expected to occur in commercial quantities and grade. I therefore recommend that the exploration program be continued as outlined, under the supervision of a competent engineer or geologist.

Estimated costs of the program outlined above are given in Appendix A of this report.

Respectfully submitted,

"Sherwin F. Kelly"
Sherwin F. Kelly.

Adelphi Hotel
P.O. Box 325,
Merritt, B.C.
November 15, 1963.

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Geophysicist and Geologist

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CERTIFICATE OF COMPETENCE

I, Sherwin F. Kelly, hereby certify that:-

1. I am a graduate in mining engineering, with the degree of B.Sc. in Mining Engineering granted in 1917 by the University of Kansas;

2. I have pursued graduate studies in geology and mineralogy at the University of Kansas, the University of Toronto and the Sorbonne (University of Paris), and taught geology and mineralogy at the University of Toronto;

3. I have practised as a consulting geophysicist and geologist since WorldWar I, in Canada, the United States and many of the countries of Central America, South America and the Caribbean;

4. That the information in this report was derived from personal association with the Payco operations, as Consulting Geologist, since May, 1963, andf rom various reports, principally Canadian Geological Survey Memoir 243 by H.M.A. Rice, "Geology and Mineral Deposits of the Princeton Map Area, British Columbia", Ottawa, 1947; and reports by R.E. Renshaw dated October 5th, 1960, February 16th, 1962, January 3rd, 1962 and April 7th, 1963.

"Sherwin F. Kelly"

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APPENDIX "A"

PAYCO MINES LTD. (N. P. L.)

TABLE OF ESTIMATED COSTS

Surface Prospecting (in target areas)	$ 2,500.00
Assaying Fees	2,500.00
Air Drilling and Blasting	8,000.00
Bulldozing Anomalies A, B, C.	5,000.00
Diamond Drilling (7,000 feet @ 8.00/ft.)	56,000.00
Transportation	3,500.00
Cook House Loss	3,000.00
Camp Extensions & Improvements	3,000.00
Engineering and Supervision	6,500.00
Reserve for Contingencies	30,000.00
	$ 120,000.00

Thus the sum required to carry out this program is estimated to be $120,000.00.

"Sherwin F. Kelly"

SHERWIN F. KELLY
Consulting Geologist

November 15th, 1963.