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92J/7W

The COPPER QUEEN showing a copper bearing  
quartz diorite intrusion, Own Creek,  
Pemberton, Lillooet Mining Division 92J/7W.

by: W. James Crawford

WELCOME NORTH MINES LTD.

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BCDM Reports 1917, 1918, 1969, 1970, 1972, 1974.

CONCLUSIONS

The COPPER QUEEN Property comprises four small copper bearing quartz diorite plutons which extend along Owl Creek from the original COPPER QUEEN adit to Owl Lake.

The showings in most cases yielded sub-economic grades of copper-molybdenite mineralization. The best drill intersection in 1972 yielded 99m of 0.40% Cu and 0.029%  $\text{MOS}_2$ .

## INTRODUCTION

The following report pertains to a literature search on the COPPER QUEEN property on Owl Creek near Pemberton, B.C. in the Lilloet Mining Division. The property extends from the Mouth of Owl Creek to Owl Lake. Showings "A" "B" "C" and "D" of the assessment reports are numbered 4, 6, 7 and 18 respectively on the GEM map.

## LOCATION AND ACCESS

The COPPER QUEEN Property is located on Owl Creek a tributary of Birkenhead River 9.6 km north of Pemberton, B.C. Access to the property is by a rough road passable by a four-wheel drive vehicle which extends 8 km up Owl Creek. The area is well timbered, and varies in relief from 300 m at the lower end of Owl Creek Canyon to 1050 m. The topography is locally precipitous especially in lower Owl Creek Canyon.



Copper Queen Property, Pemberton B.C.

## HISTORY

The original copper showing, the COPPER QUEEN, now known as the "A" zone, was discovered in 1913, and acquired from the owners, Hugh Ross, Kenneth Ross and George Moore by the Copper Queen Mining Company. At that time Copper Queen Mining drove a 69 m adit. Copper mineralization was reported as 5.4% copper over 1.5 m with trace gold and silver.

In 1928 Britannia Mining and Smelting Company Limited drilled three diamond drill holes in the "A" Zone which yielded up to 90 m of low grade copper mineralization.

The Mining Corporation of Canada in 1963 carried out geological mapping, geochemical silt sampling, and trenching.

The property in 1968 was acquired by L.Harrison and J.S.Scott and optioned to Pine Lake Mining Company Limited (Owl, OC, KB, OL, OLS, OLN, OCS and BO claims). Pine Lake drilled in 1968 one 288m diamond drill hole in the "A" zone (200 m of 0.2% Cu) and in 1970 8 diamond drill holes totalling 2045 m in the "C" zone. Geological mapping, geochemical soil surveys IP and ground magnetometer surveys were carried out over the property.

In June 1971, R. Seraphim for Pine Lake Mining Company and Silver Standard Mines reported on the potential of the property. At this time copper mineralization had been located in 4 zones, "A", "B", "C" and "D".

A report for Pine Lake Mining Company, mentions work to 1972 comprising 10 diamond drill holes on the "C" zone totalling 2434 m with best intersections as 99m of .40% Cu and 0.029% MoS<sub>2</sub>.

On zone "D" 19 percussion holes to 90 m indicated sub-economic grades of mineralization.

In 1973, Utah Mines optioned the property from Harrison and Scott. Utah in an ambitious and extensive program during 1973 and 1974 conducted geochemical soil surveys, geological mapping, plus IP, VLF, EM, and ground magnetometer surveys. As of the deadline for the assessment report, only one diamond drill hole was completed, the second setup begun, and no drill core results received.

## GEOLOGY

Early Geological Survey reconnaissance mapping by Camsell, 1917 and Cairnes, 1924 mention the COPPER QUEEN area. However, aside from the new 1:1000,000 Fraser River Sheet, all these reports and a later paper by Roddick and Hutchinson, 1973 are all out of print and rather general in nature, the following data was compiled mainly from assessment reports.

The quartz diorite host rock to the COPPER QUEEN showings on Owl Creek occur within a roof pendant in the Coast Plutonic Complex (CPC). These intrusions and included copper mineralization are localized along the northwest trending valley of Owl Creek by a shear zone (to 180 m wide) and parallel branch of a regional shear through the Lillooet Valley. The copper bearing intrusions appear to be localized or intruded at intersecting cross-fractures or strands (Seraphim).

The Pioneer Formation is composed of fine-grained, massive, andesitic volcanics, mainly andesitic tuffs, lapilli tuffs, breccias and flows, plus minor argillite siltstone and conglomerate. Strongly hemitized volcanic breccias weather deep purple, whereas, the interbedded volcanically derived greywackes weather light green. These volcanics, especially in dioritized halos around the stocks, are pyritized, silicified, and in places contain quartz eyes. The trend of a regional syncline may run parallel Owl Creek.

The diorite bodies and dioritized halos show chloritization of hornblende, plus epidote and sericite alteration. An irregular fracture pattern is often filled with quartz and disseminated Malachite and epidote. Pyrite is common, chalcopyrite in trace amount and molybdenite present in drill core.



## MINERALIZATION

On Owl Creek, copper mineralization is mainly restricted to four quartz diorite plutons, zones "A", "B", "C", and "D". Mineralization consists of disseminations and blebs of pyrite along fractures plus chalcopyrite, bornite and molybdenite in the more intensely shattered areas.

- Zone "A": the site of the original COPPER QUEEN adit, consists mainly of malachite and azurite stained cliffs on steep canyon walls. Best drill intersections in 1928 drill program ran to 90 m of 0.2% copper.
- Zone "B": Low grade (less than 0.10% Cu) mineralization occurs at a strand intersection, and is of very limited extent. A weakly anomalous copper soil geochemical response covers the showing.
- Zone "C": The largest of the four zones was tested with 10 diamond drill holes that indicate that the zone does not continue along strike to the south. However, the showing may extend under cover to the north. The best drill intersection yielded 0.40% Cu and 0.029% of  $\text{MoS}_2$  over 99m.
- Zone "D": Seventeen percussion drill holes to 90 m deep indicated sub-economic grade copper mineralization coincidental with a copper geochemical anomaly.

GEOCHEMICAL AND GEOPHYSICAL REPORTS

The results of Utah Mines geochemical soil surveys show that most copper soil geochemical anomalies are discouragingly small discontinuous and scattered. However, at the southwest corner of Owl Lake pyritic outcrops are covered by a copper soil geochemical anomaly. A number of magnetometer and IP anomalies also occur here.

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1973: p.249  
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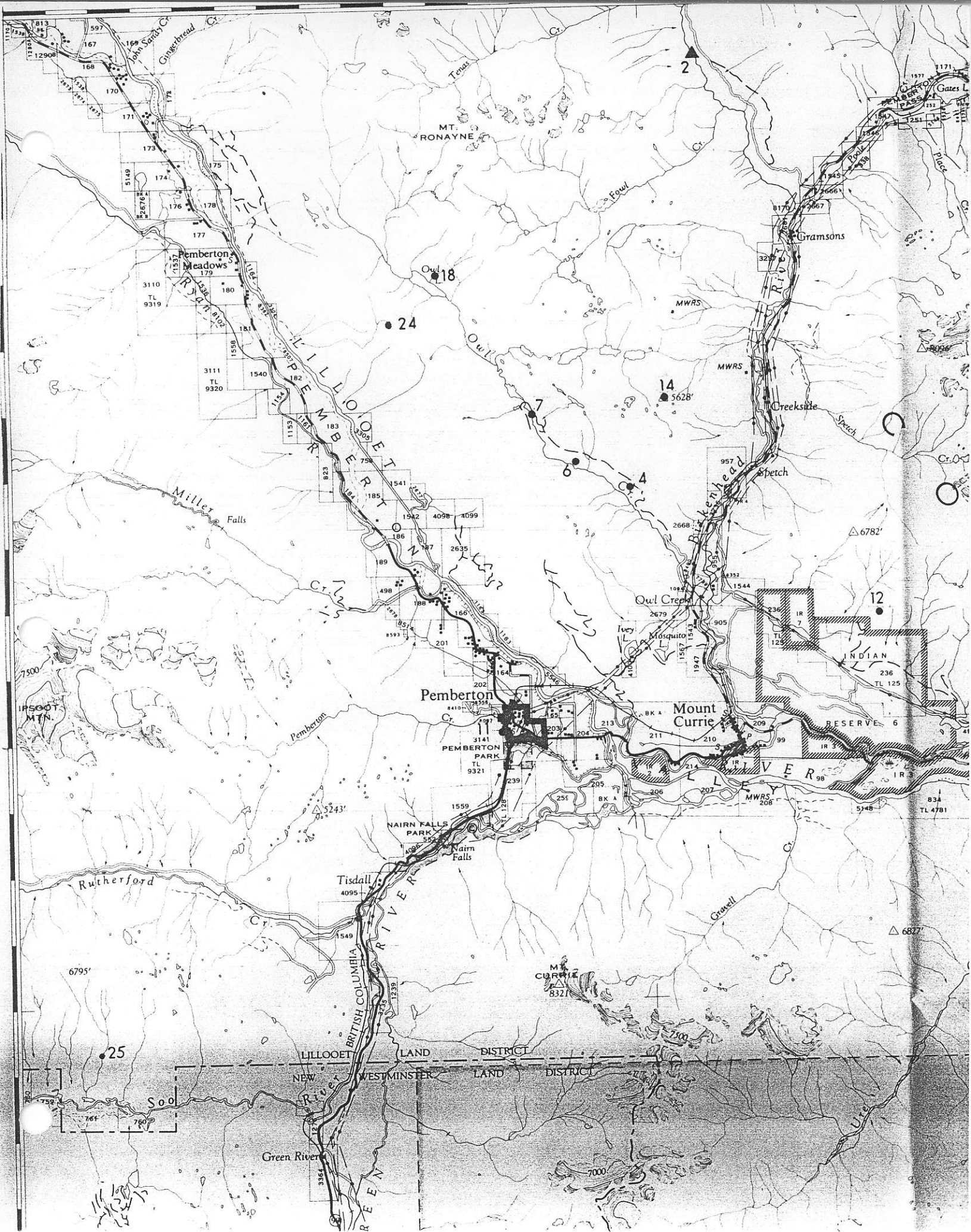
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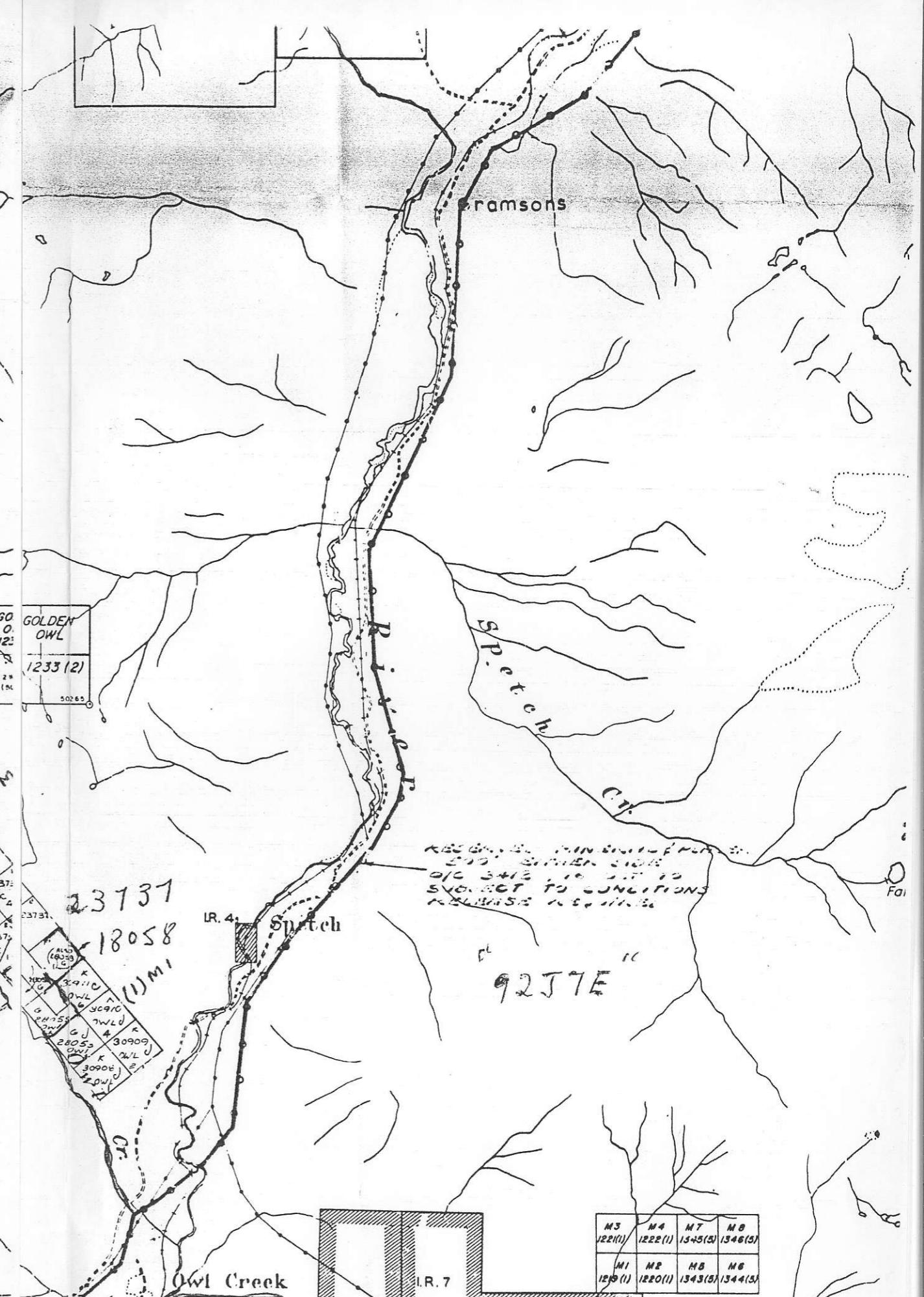
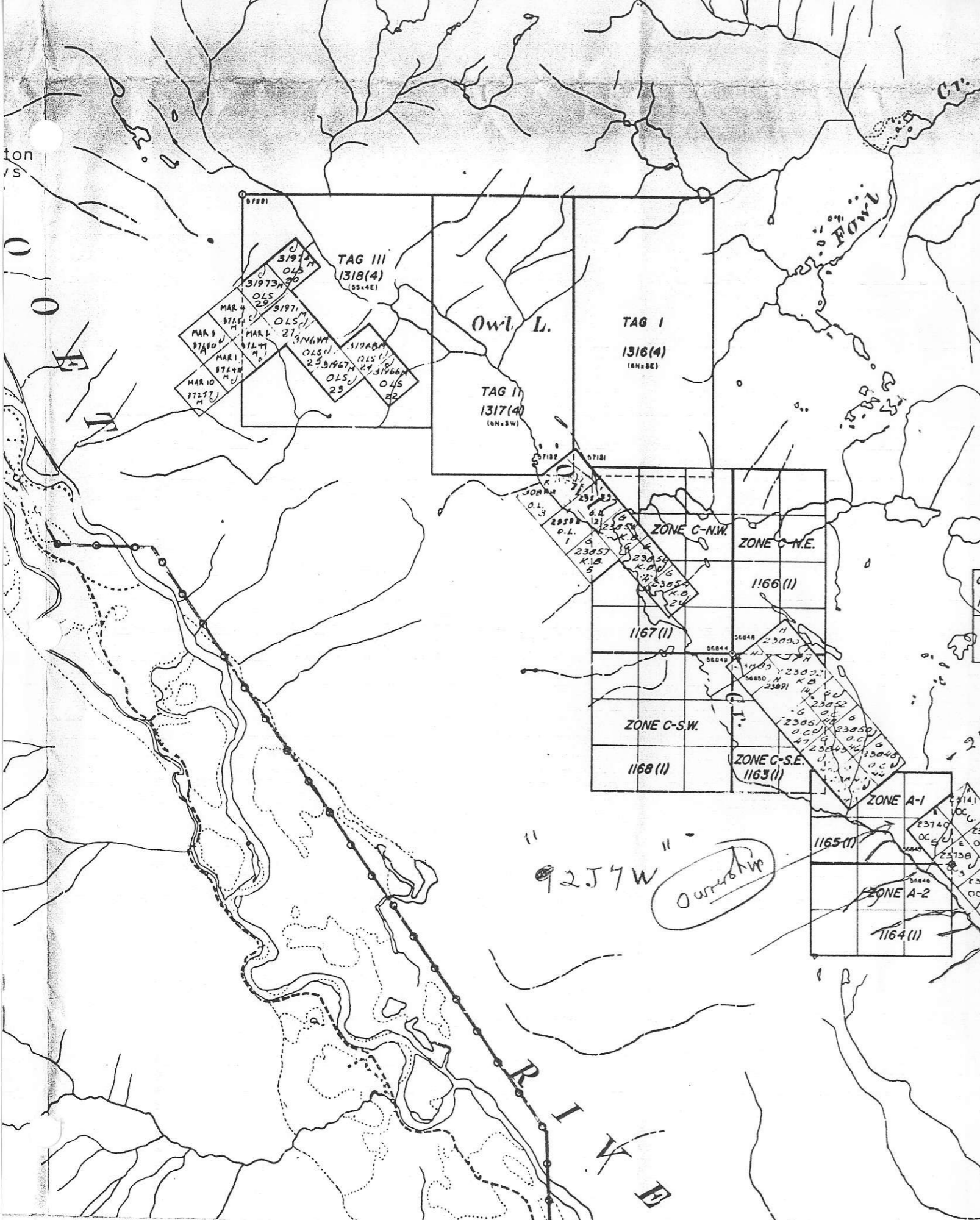
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M3 122(1)	M4 1222(1)	M7 1345(5)	M8 1346(5)
M1 1219(1)	M2 1220(1)	M5 1343(5)	M6 1344(5)

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
RESOURCE DATA SECTION

NAME(S) = COPPER QUEEN  
OWL CREEK A ZONE  
OC  
KB

N.T.S. = 092J07W

MI = 092JSE004

LAT = 5022.8 (DEG. MIN)  
LONG = 2245.4  
ELEVATION 0900 M.  
MINING DIVISION = LILL  
LOCATION ACCURACY = 1

UTMZ = 224  
UTMN = EL5580600  
UTME = EL0517300

CAPSULE GEOLOGICAL COMMENT =

DIORITE BODIES INTRUDE A ROOF PENDANT OF VOLCANIC AND SEDIMENTARY ROCKS WITHIN THE COAST RANGE PLUTONIC COMPLEX, ALONG A SHEAR ZONE WHICH IS PART OF A MAJOR FAULT. CHALCOPYRITE, MOLYBDENITE AND PYRITE WITH MINOR MAGNETITE AND BORNITE AND SECONDARY MALACHITE AND AZURITE OCCUR AS DISSEMINATIONS, BLENDS AND FRACTURE-FILLINGS IN THE DIORITE, AND AS REPLACEMENTS IN THE VOLCANIC ROCKS.

COPP  
SHOW

COMMODITIES PRESENT = CU MO

MINERALS PRESENT =

CLCP  
MLDD  
BRNT

BIBLIOGRAPHY

CO01A	BCDM MMAR 1913-270, 1918-233, 1928-219	1917-1270-272.	000
CO02A	BCDM GEM 1969-188, 1970-227, 1972-281, 1973-249, 1974-203		000
CO03A	BCDM ASS RPT 599, 3625, 4623, 2106, 4958, 5292		000
CO04A	GSC SUM RPT 1917B-19, 1924-76 - Cairner		000
CO05A	GSC P 73-17 - Camell.		000

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
RESOURCE DATA SECTION

NAME (S) = OWL CREEK "B" ZONE

N.T.S. = 092J07W

MI = 092JSE006

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OL

LAT = 5023.1 (DEG. MIN)  
LONG = 2246.6  
ELEVATION 0833 M.  
MINING DIVISION = LILL  
LOCATION ACCURACY = 1

UTMZ = 224  
UTMN = EL5581400  
UTME = EL0515700

CAPSULE GEOLOGICAL COMMENT =

DIORITE BODIES INTRUDE A ROOF PENDANT OF UPPER  
TRIASSIC PIONEER FM. VOLCANIC AND SEDIMENTARY ROCKS  
WITHIN THE COAST RANGE PLUTONIC COMPLEX, ALONG A  
MAJOR SHEAR ZONE. CHALCOPYRITE AND MOLYBDENITE,  
WITH SECONDARY MALACHITE AND AZURITE, OCCUR IN THE  
DIORITE AT THE INTERSECTION OF SEVERAL NORTHERLY-  
STRIKING FAULT STRANDS WITH A MAJOR NORTHWEST-  
TRENDING LINEAMENT.

SHOW

COMMODITIES PRESENT = CU MO

MINERALS PRESENT =

CLCP  
MLBD

DRIVE EAST OF PEMBERTON TO CREEKSIDE THEN NORTH TO ROAD GOIN  
G UP OWL CREEK AND TAKE THIS ROAD

BIBLIOGRAPHY

C001A BCDM MMAR 1916-270  
C002A BCDM GEN 1969-188, 1970-227, 1972-282, 1973-249, 1974-203  
C003A BCDM ASS RPT 599, 2106, 4958, 5292  
C004A GSC P 73-17

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
RESOURCE DATA SECTION

NAME(S) = OWL CREEK "C" ZONE

N.T.S. = 092J07W

MI = 092JSE007

OWL  
OC  
KBPPER SHAP

LAT = 5023.9 (DEG. MIN)  
LONG = 2247.6  
ELEVATION 1167 M.  
MINING DIVISION = LILL  
LOCATION ACCURACY = 1

UTM Z = 224  
UTM N = EL5382500  
UTM E = EL0514500

CAPSULE GEOLOGICAL COMMENT =

DIORITE BODIES INTRUDE ALONG A MAJOR SHEAR ZONE IN  
A ROOF PENDANT OF UPPER TRIASSIC PIONEER FN VOLCA-  
NIC AND SEDIMENTARY ROCKS, WITHIN THE COAST RANGE  
PLUTONIC COMPLEX. CHALCOPYRITE AND MOLYBDENITE  
OCCUR IN THE DIORITE AT THE INTERSECTION OF AN  
EAST-WEST TRENDING SHEAR SYSTEM WITH A MAJOR  
NORTHWEST-TRENDING LINEAMENT.

SHOW

COMMODITIES PRESENT = CU MO

MINERALS PRESENT =

CLCP  
MLBD

DRIVE FROM PEMBERTON TO CREEKSIDE AND THEN TAKE OWL CREEK RD  
AD TO NORTH WEST.

BIBLIOGRAPHY

0001A BCDM MAR 1916-270  
0002A BCDM GEN 1969-188, 1970-227, 1972-282, 1973-249, 1974-203  
0003A GSC P 73-17

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
RESOURCE DATA SECTION

NAME(S) = J

N.T.S. = 092J07W

MI = 092JSE018

LAT = 5026.0 (DEG. MIN)

UTMZ = 224

LONG = 2249.9

UTMN = EL5586600

ELEVATION = 1333 M.

UTME = EL0512000

MINING DIVISION = LILL

LOCATION ACCURACY = 1 / 4 FROM

SAMPLE # 12 ON CLAIM J29

CAPSULE GEOLOGICAL COMMENT =

ANDESITE VOLCANICS OF THE UPPER TRIASSIC PIONEER  
FM CONTAIN DISSEMINATED PYRITE AND, IN AREAS OF  
HEAVY ALTERATION, PYRITE AS SMALL STRINGERS AND ON  
FRACTURE PLANES.

SHOW

COMMODITIES PRESENT = FE

MINERALS PRESENT =

DIRT ROAD TO PINE LAKE MINING CO.'S DRILL CAMP, AND 3.5 MILE  
S BY TRAIL TO OWL LAKE.

BIBLIOGRAPHY

CO01A BCDM GEM 1970-226  
CO02A BCDM ASS RPT 2624  
CO03A GSC P 73-17

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## PLACER-MINING.

*Golden Dream Mining Co.*—This company confined the season's work to prospecting the South fork of Bridge river. A small plant was installed, 2,000 feet below the dam on the dried bed of the creek, the plant consisting of an overshot-wheel pump and drag-line scraper. Bed-rock was found at a depth of 21 feet. About 600 yards of gravel was handled, yielding an average of 40 cents a yard in gold. Considerable heavy wash was encountered that hampered the little plant. With this data available from the season's work, plans are now being made to operate on a larger scale next spring. An average of seven men secured employment from May until November.

*Lillooet B.C. Mining Co., Ltd.*—The majority of the shareholders being with the Army when the war began, but little work has been done on the *Horse Shoe Bend* mining leases.

Operations of the individual miner were confined to Bridge river, Cayoosh creek, and McGillivray creek. Owing to the adverse natural conditions in the spring of the year, the recovery of gold by placer-mining suffered; about \$2,900 is all that has been reported.

## OFFICE STATISTICS—LILLOOET MINING DIVISION.

Free miners' certificates issued .....	154
Mineral claims recorded .....	156
Certificates of work recorded .....	131
Placer claims recorded and rerecorded .....	11
Placer and dredging leases in force .....	34
Conveyances, etc., recorded .....	58

## Revenue.

Free miners' certificates .....	\$1,197 00
Mining receipts, general .....	2,429 50
Tax, Crown-granted mineral claims .....	452 25
	<hr/>
	\$4,078 75

## LILLOOET MINING DIVISION.

## NOTES BY PROVINCIAL MINERALOGIST.

In September the Provincial Mineralogist visited the Lillooet Mining Division, and made the following notes on properties examined:—

*Virginia group and Copper Queen group mineral claims*, comprising

*Copper Queen*, twelve claims; owners, Hugh Ross, Kenneth Ross, and George Moore. This property has since been acquired by the Copper Queen Mining and Smelting Company, of Vancouver. These claims are situated on the east side of Owl creek, about 2 miles up from its junction with the Birkenhead river at the Dominion Fish Hatchery, Pemberton Portage. The workings on the property are from the creek-bed and at an elevation above the valley and Pacific Great Eastern tracks of about 800 feet.

From the Hatchery Station of the Pacific Great Eastern Railway a road about 200 yds. long connects with the main wagon-road over the Portage, which has existed as a main road since the "sixties" and is in good repair. From this main road, at a point about half a mile from the Hatchery Station, a trail strikes to the north over a gravelly flat timbered with small trees for a distance of about half a mile to the mouth of the canyon of Owl creek; the rise in this point from the main wagon-road is estimated at about 40 feet. This first half a mile was made into a good wagon-road for about \$200.

The claims are about one mile and a quarter up the bed of the creek from where the trail starts, the creek being in canyon all the way. From this point the present trail zigzags up the east bank of the creek, gaining an elevation of 300 or 400 feet, bringing it above a rocky ledge which forms the immediate bank of the creek. From here on, the trail follows a side of loose rock, gravel, and earth on a fairly uniform grade to the properties.

This trail is as good a foot or half a mile more than \$200 or \$300 to build, but, as a wagon-road without considerable expense.

Mr. Ross told me he had made the trail and it could easily be done and perhaps four men could be provided for.

The men at the property go down the trail, the round trip being made in two days.

*Mineral Showings.*—On the east side of the canyon what appears to be an igneous dyke runs in an easterly direction, parallel with the creek-level a tunnel has been driven in about 230 feet, crosscutting the strike of the dyke. Mineral fissures were noted running parallel to the tunnel.

In several instances this fissuring was about 8 feet, which crushed zones of softening and more solid formation.

While the whole tunnel may be so mineralized is not uniform, as already mentioned. If mineralization reaches the commercial limit would be unfair to the property to be reported that this was done by one man. The writer therefore sampled in the tunnel the following results:—

*Sample A.*—At about 150 feet in the tunnel then been driven in for some 8 feet. The material in the face of the drift was sampled at different heights; these were mixed, and the assay was found to contain, by wet analysis,

*Sample B.*—At about 190 feet in the tunnel, and this was similarly sampled. The assay was found to contain 5.4 per cent.

At these points the "backs" or high ground of the tunnel-mouth. There are several points of doubt but that others are similar. It appeared to the mineralogist that the material is, however, recommended that a further investigation might prove amenable for some time. It appears to be in a more solid phase and zones cannot be guessed at.

It is further recommended that some more work be done out ore that could be measured.

The rock in these zones is so broken that it is not possible to do any work.

The location of the tunnel is such that it is better than a prospecting-tunnel, as, if further work gives expectation of, then a

that is known as the "second outcrop" is about 100 feet higher than the creek level. The exposed surface a rough estimate is about 1 per cent copper, with negligible gold.



The properties, as can be seen from the foregoing, have considerable promise and are well worthy of much more extended and systematic development, while their situation so close to rail transportation adds much to their value.

There is ample water-power at hand which could be developed at a small cost, while timber is plentiful and convenient.

As has been pointed out, there is a particularly good trail to the property, which in the opinion of the writer is all that is required for the proper preliminary development of the mineral showing, inasmuch as it will be some time before machinery is advisable.

A road to reach the property would have to rise some 600 or 700 feet in, say, one mile and a half, which would call for an average grade of 8 to 10 per cent., which is scarcely workable and would be expensive to build.

A small aerial tramway would appear to be an easier solution and the only one to enable the ore to be got out at a cost not prohibitively high. Further, the location of a working-tunnel cannot even be guessed at now, and the property is too good to be spoiled by temporary makeshifts.

Owned by A. F. Hautier and others, of Lytton. I inspected this property on September 7th and 8th, 1916. The property straddles the summit between the North fork of Texas creek and Cottonwood creek, the latter a tributary of Cayoosh creek, and is at an elevation of approximately 8,000 feet, or from 1,500 to 2,000 feet above timber-line. It is reached via Texas creek, which flows into the Fraser river on the west side, some thirteen miles below Lillooet. There is a good wagon-road from Texas creek to Lillooet and the Pacific Great Eastern Railway.

Texas creek is in canyon on its lower half, the first mile or so of which is impassable, even for man or horse, except at low water. The hills on either side rise precipitously to about 4,000 feet, and over these a high-water trail has been built.

A trail has existed up Texas creek for years, but this has been improved by Mr. Hautier, who had six Indians at work on it at the time of my visit, so that now—low water—it is passable as the nature of the country (boulders and slide-rock) will admit of. The trail crosses and recrosses the creek in six temporary pole-and-log bridges, while there are two fords dangerous to horses, and all these are necessitated by the nature of the canyon.

The length of the trail from the wagon-road to the company's camp has been variously estimated at between twelve and fifteen miles, and occupies, travelling light with a good saddle horse, seven hours to go up and six hours to come down. The camp is on the very edge of timber-line and at an elevation of about 6,500 feet.

The outcrop of the ore is on a saddle-back some 1,500 feet above the camp, and from a mile to a mile and a half beyond timber-line, on a bald, exposed summit facing Cottonwood creek.

On the morning of September 8th about 2 inches of new snow fell, rendering any general inspection of the local geology very difficult, although the workings were quite visible.

It would appear as if the summit of the range at this point was occupied by a great dyke or spur of granite or pegmatite, in which, at the principal showing, there is a fracture running more or less with the course of the dyke, on which, as the face of the open-cut then appeared, there is a heavy impregnation of the granite on either side of the fissure, for a width of about 2 feet, of molybdenite, which is estimated to run from 10 to 12 per cent. of that mineral.

Extending beyond this heavier mineralization there is a zone of from 4 to 6 feet, in which molybdenite occurs sparsely scattered through the granite to the extent of from 1 to 2 per cent.

It seems well established that this general mineralization extends laterally for a distance of at least 2,000 feet and possibly considerably more, the snow on the ground preventing accurate investigation.

It would seem as though there were several fracture-planes along and from which mineralization took place, and that there are various spots at which concentration occurs. The development-work on the property is very slight and superficial and is chiefly confined to the "big showing" where a face of about 8 feet high has been dressed up. How far this concentration extends laterally is not shown by the work done, and the surface is so covered by broken rock that it cannot be seen without extended work being done.

From the open-cut the owners have broken a quantity of ore which has been hand-cobbed and some 3 tons of this cobbled ore lay on the dump already sacked, while a further pile

bed ore, estimated at about 3 tons, is this cobbled ore was taken from this, 12.10 per cent. of the mineral molybdenite.

There is thus some 6 tons of this cobbed ore ready this fall. Our development shows, there might be some other possibilities.

Of the low-grade ore there is undoubtedly some which could be concentrated on the spot.

The showing being absolutely on top of the hills, the valleys about two miles from the property would be successful.

The present trail is not very good, but it is possible to make it really good.

It is considered that, with the improvement of the trail, it could make two round trips from the wagon-road to the district with a loaded cart could average 200 lb. ore per trip. All the horses would have to be sent to the wagon-road.

From Texas creek to Lillooet—thirteen miles—the trail is very clayey in wet weather. From Lillooet to Vancouver and thence east.

There are several other prospects a fair way from the property, but it is fair that Mr. Hautier and associates should have the right to the trail.

During 1916 a shipment of molybdenite was made from the property.

The shipment contained 9 tons of molybdenite. The operators of this property are great operators of the claims to the Lillooet trail from the claims to the Lillooet trail. Two cars of talc were shipped from the mouth of McGillivray creek.

## CLINTON

## REPORT OF E.

I have the honour to submit the a report for the year ending December 31st, 1916. As will be shown by the enclosed copy of the report during the past year; in fact, no work was done.

A certain amount of interest is still shown in the information received it would appear that a few miles farther north.

I much regret having to show the fact that capital for the purpose of obtaining, and men in the district, is not available for His Majesty's Forces.

## OFFICE STATIST

Free miners' certificates (individually) recorded  
Mineral claims recorded  
Placer claims recorded  
Certificates of work issued  
Conveyances, etc., recorded

granite porphyry. Mineralization is mainly by magnetite and some chalcopyrite over a distance of from 8 to 50 feet in width. Here also the development-work consists of open-cuts and shallow pits."

Referring to the *Eva* group mentioned in the above extract, the writer took a sample across the face about 6 inches at the bottom of an open-cut at a depth of 12 feet vertically below the surface; and gave an assay at the Provincial Assay Office: Copper, 2 per cent.; silver, 0.80 oz. a ton; gold, trace.

This group comprises four claims and is owned by T. Lewis, of Vancouver. The *Helma Maud* Group. These are situated on a high ridge lying to the north of Tenquille creek, between it and the Birkenhead river. The side sloping toward the Birkenhead river is very steep and precipitous from the top of the ridge downward for a vertical distance of nearly 2,000 feet; continuing toward the river the slope is more gradual, though still fairly steep, the surface being made up of the talus broken away from the bare and exposed face of the ridge referred to. The country-rock is the schist mentioned in Mr. Camsell's report. At several places in this exposed face appear zones of mineralization in which chalcopyrite predominates, the general direction of strike being vertically up and down the face. One of these showing the best exposure was followed up the face for a distance of approximately 100 feet. It appeared to consist of a mineralized parting in the schist, carrying fairly high-grade chalcopyrite running in width from a knife-edge up to 6 inches. From this parting in places the mineralization extends with more or less persistency into the country-rock. As no work had been done on this property, no samples were taken.

#### LILLOOET LAKE.

An examination was made of some of the properties lying on the south side of the west end of Lillooet lake. The formation here is described by Camsell as consisting of quartzite, argillites, limestone, and schists. Samples were taken from several of the properties, but as assay results were not promising a description would be of little interest.

Situated on the east side of Owl creek and operated by Copper Queen Mining and Smelting Company. A full report by W. Fleet Robertson, Provincial Mineralogist, is given in the Minister of Mines' Report for 1916, page 270. Geology by Camsell in C.G.S. Summary Report, 1917, Part B, page 19p. A small amount of development has been carried out since Mr. Robertson's report.

A considerable amount of prospecting-work is going on in the vicinities of Lillooet lake, Birkenhead river, and Owl creek.

#### KAMLOOPS MINING DIVISION.

Situated about seven miles in a south-westerly direction from the city of Kamloops. This is the only mine in District No. 3 operating a reduction plant of any magnitude. In the Minister of Mines' Report for 1915 there is a comprehensive report on this property by W. M. Brewer, giving a description of the geology, underground workings, surface equipment, power-installation, and transportation arrangements at that date. The following information was supplied by the superintendent, A. E. Wallinder: The management, transportation system, and general power arrangement remain the same as at the time of Mr. Brewer's report referred to. During the past two years a considerable amount of underground development has been carried out, as well as approximately 8,000 feet of diamond-drilling. From the 750-foot level of the *Iron Mask* claim a raise has been put up to connect with the 300-foot level from the *Erin* shaft. This raise is about midway between the two shafts, which are 1,500 feet apart, and serves as an outlet for the ore from the *Erin* claim, which is taken along the 750-foot level to the *Iron Mask* shaft and hoisted to the concentrating plant.

The diamond-drilling was carried out from the 750-foot level for the purpose of locating the original *Iron Mask* ore-body, which was cut off at the 690-foot level by a horizontal fault (see Mr. Brewer's report); this has been located and development-work is being directed toward opening it up.

The water-concentrating plant described in Mr. Brewer's report has been entirely discarded in favour of a "flotation system." During the year 1917 a plant having a capacity of 150 tons gross in twenty-four hours was installed. This proved so satisfactory that another unit of like capacity was added early in 1918. Each unit is comprised of a jaw-crusher, Macey ball-mill,

ns of the company have been  
 trenching and sampling was done  
 width averaging about 3 feet for  
 ssary to prove the existence of  
 d underground workings has been  
 driven for about 700 feet to the  
 ough the diorite, that exposed dif  
 pment of this ground was postpos  
 s. Two or three veins have been  
 rrelated with any surface exposure  
 ip from 45° to 60° to the west. Ore

were cleared for camps and buildings  
 in roads; temporary tent camps for  
 onstructed and will care for around  
 essor-house, and four cottages for  
 ply was put into service and a way  
 of about 320 feet, to run sawmill  
 ld ditch with flumes to repair it  
 of wooden pipe from 18 to 24 inch  
 tion and about 350 M. feet were  
 n also.

l air-drills and ventilation-pipe, a  
 and a storage-battery locomotive of  
 ompressed-air steel-sharpener. The  
 e s ll is driven by a water-wheel  
 d under 185 feet head. As stand-by  
 r Diesel engine drives a small com  
 achines, one new and the other one  
 the winter by a 30-horse-power cat  
 ortable compressor, gasoline-driven,

spring and most of the season was  
 en on the average were employed  
 of the year, with construction over

pany, with a capital of \$3,000,000, has  
 of properties, including the 40 *Talbot*  
 e, on Cadwallader creek. It is under  
 a mineral occurrences with a view to

made in the Annual Report for 1927  
 f Vancouver interests, and it is under

have produced some encouraging  
 t an elevation of about 6,200 feet near  
 on creek and Taylor creek, in the B  
 are found in the Bridge River schist  
 whom the prospecting-work has been  
 body of ore of commercial size has  
 . Seven samples taken over a length  
 ed to have yielded results on an as

ed and about 200 feet of tunnelling  
 pany and situated on the east side

on lake, near D'Arcy, on the Pacific Great Eastern Railway. This work failed to disclose economic importance.

**Upper Bear.** The prospecting-work upon these claims, owned by T. Charleton, of Owl Creek, that was commenced by the Britannia Mining and Smelting Company, Limited, in 1927 was continued during the earlier part of the year. A number of open-pit workings had exposed a narrow belt of limestone in contact with andesitic rocks carrying considerable quantities of chalcopryite with magnetite, garnet, and epidote.

Some hundred and twenty feet of drifting-work was done by the company, in the course of which some good ore was found, following which some prospecting by diamond-drilling was carried out. According to information supplied by the company, three holes were drilled with a total footage of 907 feet. These holes failed to reveal ore in sufficient quantity to be of interest to the company and the option was dropped.

**Upper Queen.** The following information is supplied by the Britannia Mining and Smelting Company, Limited, which took an option on these claims and carried out some prospecting-work during the year. The property consists of twenty-five mineral claims, running from the Pacific Great Eastern Railway at the Owl Creek hatchery, north, for about 1.5 miles. The claims are owned by the Copper Queen Mining Company, Limited, of Vancouver.

An area of quartz diorite, in which are inclusions of tufts, has been fractured and to some extent sheared along a north-south line which is now represented by the course of Owl creek. A fractured zone, 300 to 600 feet wide, is mineralized with iron and copper sulphides over a large area. The part of the zone above the level of Owl creek is leached with the development of parallel zones showing copper carbonates over width up to 60. (See Report of W. F. Robertson in 1916 Annual Report.)

The zone was first carefully prospected, the best mineralized section picked out, and then a series of diamond-drill holes put in, in order to ascertain the condition and value of the primary sulphide-zone. These holes showed up to 300 feet of low-grade copper mineralization, but not of a grade sufficiently high to be attractive to the Britannia Mining and Smelting Company, Limited.

**Gold King.** An option was secured upon this property, situated at the head of Tenquille creek, in the Pemberton area, late in the fall by C. P. Riel, of Vancouver, and his associates. It is understood that prospecting by electrical methods, to be followed by a programme of diamond-drilling, is to be undertaken in 1929 as soon as weather conditions permit.

**Eureka.** This mineral claim, owned by J. K. Mackenzie, is located alongside the track of the Pacific Great Eastern Railway, about 2 miles above the station of Pemberton. Several small quartz-seams occur in a broken and foliated formation of volcanic and sedimentary rocks near the contact with a body of intrusive granite. Some scattered lead mineralization occurs in the quartz stringers, with traces of gold and silver, but no deposits of economic importance are indicated in the limited surface workings.

PLACER GOLD.

Placer-mining operations have been in progress and are in contemplation on Cayoosh creek, at the outlet of Seton lake, and on the Fraser river between Lillooet and Kelly creek. At the former site the Enterprise Mining Partnership has been doing serious work looking to the recovery of gold from the creek-bed. This project was described in the Annual Report for 1926. A deep channel has been cut diverting the stream through a tunnel cut in the bed-rock above a 300-foot fall. The results from washing the material excavated in this cut were not encouraging, and at the present time operations are devoted to ground-slucing in the bed of the creek with anticipation of encountering better "pay" when bed-rock is reached.

ASHCROFT MINING DIVISION.

Apart from some prospecting in the Highland Valley area, there has been little activity in this Division.

The option that was held in the early part of the year on gold-quartz claims situated on Steyn creek was relinquished, it being found that, although there were large exposures of quartz, the gold content was very variable and not sufficiently well distributed to justify the plan of operation that had been projected.



**WORK DONE:** The surface workings were mapped and geological and magnetometer surveys were conducted over the CHALCO No. 5 claim. Three trenches, totalling 1,300 feet in length, were bulldozed, three pits were dug by hand, and 2 miles of road was constructed on Cadwallader and Piebiter Creeks. A total length of 2,208 feet was diamond drilled in 15 AXK holes. D. L. Cook, in charge.

**REFERENCES:** *Minister of Mines, B.C.*, Ann. Repts., 1948, pp. 97-102; 1952, p. 114; 1954, p. 103; Assessment Report No. 105.

**DESCRIPTION:** Skarn-type deposits of scheelite, molybdenite, and chalcopyrite occur in metamorphosed sediments which are intruded by the Bendor batholith.

#### YALAKOM RIVER

**EAGLE** (No. 671, Fig. 33)

By E. S. J.

**LOCATION:** Lat. 50° 56' Long. 122° 16' (92J/16W)  
On Yalakom River, opposite Shulaps Creek.

**CLAIMS:** Ninety-five claims, comprising the EAGLE, RED EAGLE, YALAKOM and CONDOR groups.

**ACCESS:** Accessible from Lillooet-Bralorne road by 9 miles of road along Yalakom River.

**OWNER:** CONDOR MINES LTD., 123, 845 Hornby Street, Vancouver 1; C. Rose, mine superintendent.

**METAL:** Mercury.

**WORK DONE:** Surface diamond drilling, trenching, road building, and 100 feet of underground development.

**REFERENCE:** *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 137.

#### PEMBERTON

BCOM-1969

**OWL, OC, KB** (No. 651, Fig. 33)

**LOCATION:** Lat. 50° 23' Long. 122° 47' (92J/7E, 7W)  
On Owl Creek, north of Pemberton, from the Birkenhead River to Owl Lake.

The property includes the former COPPER QUEEN showings.

**CLAIMS:** OWL, OC, KB, OL, OLS, OLN, OCS, and BO, 148 in all.

**ACCESS:** By road, 7 miles from Pemberton.

**OPERATOR:** PINE LAKE MINING CO. LTD., 717, 402 West Pender Street, Vancouver 3 (optioned from L. Harrison and J. S. Scott).

**METALS:** Copper, molybdenum.

**WORK DONE:** In the C zone, four claims were surveyed and the surface workings were mapped. The KB 3 to 6 and OL 2 claims were mapped geologically. An induced polarization survey totalling 10 line-miles and a magnetometer survey totalling 14 line-miles were made on KB and OL claims. Approximately 1,000 soil samples were collected for analysis from KB, OL, OLS, and OLN claims. A road was constructed from the A zone to the C zone, a distance of 4 miles, and nine holes totalling 7,776 feet were diamond drilled. R. A. Hrkac supervised the work.

**REFERENCES:** *Minister of Mines, B.C.*, Ann. Rept., 1916, pp. 270-272; Assessment Reports Nos. 599 and 2106.

**DESCRIPTION:** Chalcopyrite, molybdenite, and pyrite with minor magnetite and bornite occur as disseminations, blebs, and fracture-fillings in quartz diorite and as replacements in volcanic rocks.

**AX, ZIP** (No. 6)

**LOCATION:** Lat. 50° 1  
On the west side

**CLAIMS:** AX 1 to 58

**ACCESS:** By road and

**OWNER:** A. B. Baldwin

**OPERATOR:** CERRO

Victoria Street, T

**METAL:** Copper.

**WORK DONE:** The sur

and the area of

electromagnetic s

claims and 600 s

enlarged by blast

**DESCRIPTION:** Coppe

and altered ande

**N, TEXAS** (No.

**LOCATION:** Lat. 50° 2

South end of Bir

**CLAIMS:** N 1 to 4; T

a total of 61.

**ACCESS:** By road, 5 m

**OWNER:** MALIBU M

**METALS:** Copper, gol

**WORK DONE:** The sur

AS claims were g

in length, covere

claims and 1,230

supervised by R.

**DESCRIPTION:** Sulphu

canics, granodior

**JAY** (No. 625, F

**LOCATION:** Lat. 51° 4

On the west side

of about 6,50

**CLAIMS:** JAY 1 to 49.

**ACCESS:** Forty miles f

**OWNER:** AMERICAN

Street, Vancouver

**METAL:** Copper.

**WORK DONE:** A geol

samples were cari

**DESCRIPTION:** Chalco

rocks.

**OC, KB** (No. 12, Fig. F)

- LOCATION:** Lat. 50°22.7–23.8' Long. 122°45.4–47.8' (92J/7E, 7W)  
 Showings at elevations 2,500, 2,700, and 3,700 feet, north of Pemberton on Owl Creek, from power-line at highway to Owl Lake.  
**CLAIMS:** OWL, OC, KB, OL, OLS, OLN, OCS, BO, totalling 146.  
**ACCESS:** From Pemberton by road, 7 miles.  
**OWNER:** PINE LAKE MINING CO. LTD., 717, 402 West Pender Street, Vancouver 3.  
**MINERALS:** Copper, molybdenum.  
**DESCRIPTION:** Chalcopyrite, molybdenite, and pyrite with minor magnetite and borate occur as disseminations, blebs, and fracture-fillings in quartz diorite, feldspar porphyry, and dioritized volcanic rocks.  
**WORK DONE:** Topography mapped; induced polarization survey, 3 line-miles covering OL 1 to 4 and OLN 6; surface diamond drilling, two holes totalling 1,296 feet on KB 3 and 4.  
**REFERENCES:** *Minister of Mines, B.C., Ann. Rept., 1916, pp. 270–272; B.C. Dept. of Mines & Pet. Res., G.E.M., 1969, p. 188; Assessment Reports 599, 2106.*

**DUFFEY LAKE****(No. 19, Fig. F)**

- LOCATION:** Lat. 50°25.5' Long. 122°13' (92J/8E)  
 Two and one-half miles east of the northeast end of Duffey Lake, at approximately 6,500 feet elevation.  
**CLAIMS:** A 1 to 18.  
**OWNER:** SETON LAKE MINES LTD., 814, 510 West Hastings Street, Vancouver 2.  
**WORK DONE:** Approximately 15 line-miles of electromagnetic survey.  
**REFERENCE:** Assessment Report 2618.

**TEXAS CREEK****INDEX** (No. 22, Fig. F)

- LOCATION:** Lat. 50°31.7' Long. 122°00' (92I/12W, 92J/9E)  
 At approximately 7,500 feet elevation, at the head of the north fork of Texas Creek.  
**CLAIMS:** Thirteen Crown-granted claims: INDEX, GLOBE, LP Fraction, LAST CHANCE (Lots 1306 to 1310), LUCKY JACK Fraction (Lot 5016), LEGAL TENDER (Lot 5074), LYTTON Fraction, SUNSET, ASPIN, HOPE (Lots 5079 to 5081, 5083), CLONMEL No. 2 Fraction, OUTLET Fraction, ARMES Fraction (Lots 5111 to 5113), JIM 1 to 13 located claims.  
**ACCESS:** From Lillooet by road, 25 miles.  
**OPERATOR:** RAINBOW LAKE EXPLORATIONS LTD., Box 466, Lillooet.  
**METAL:** Molybdenum.  
**DESCRIPTION:** The property is underlain by an elliptical granitic stock in contact with metamorphosed sediments. The stock is approximately 1¾ miles long and a maximum of 3,000 feet wide, with the long axis running east-west. Mineralization, consisting of molybdenite and minor amounts of pyrite, occurs as lenses and masses along fractures with minor amounts disseminated in the rock. The strongest fracture system, associated with alteration in the west end of the stock, strikes at 070 degrees. The showings have been explored

(92J/2W)

(92J/2W)

0 feet elevation 1 mile

MORNING STAR,  
ON KING NO. 2, and  
408, 3410, and 3411).  
one-quarter mile.  
NY (CANADA) LTD.,

in the Coast Intrusions  
controlled by schistosity.  
8 to the 1940's.  
33 feet on Vulcan (Lot

94 (Cougar); 1947, pp.

(92G/14E; 92J/3E)

(92J/3E)

00 feet elevation on the  
Ita Lake.  
6, 47, 50, 52 to 55, 63 to  
5 Fractions, BERT 1 to

ely 9 miles.  
D, 1003, 409 Granville  
MINES LTD., 333, 885

(92J/7)

**METALS:** Gold, copper, silver, lead, zinc.  
**DESCRIPTION:** Quartz carbonate veins in andesite contain galena, sphalerite, and chalcopyrite.  
**WORK DONE:** McIntyre Porcupine Mines Limited — topography mapped; surface geological mapping, 1 inch equals 1,000 feet; geochemical soil survey, 1,500 samples; trenching, 300 feet; Northair Mines Ltd. — trenches and drill holes mapped; geochemical soil survey, 2,000 samples; road construction, 2 miles (tote road from end of logging road); trenching 425 cubic feet on Warman 15 and 16; stripping, 10,200 square feet on Warman 15 and 16; surface diamond drilling, 28 holes totalling 5,000 feet on Warman 15 and 16.  
**REFERENCES:** *B.C. Dept. of Mines & Pet. Res.*, G.E.M., 1971, p. 306; Assessment Report 4153.

*BCDM-1972*

#### COPPER QUEEN (No. 72, Fig. C)

**LOCATION:** Lat. 50° 23' 27' Long. 122° 44' 51' (92J/7)  
LILLOOET M.D. Between 2,500 and 3,700 feet elevation along Owl Creek, 6 miles north of Pemberton.  
**CLAIMS:** OWL 1 to 8, OC 1 to 6, 43 to 48, KB 1 to 14, OLN 1 to 24, BO 1 to 12, OL 1 to 22, OLS 1 to 30, OCS 15 to 26.  
**ACCESS:** By road from Pemberton, 7 miles.  
**OWNER:** PINE LAKE MINING CO. LTD., 616, 402 West Pender Street, Vancouver 3.  
**METALS:** Copper, molybdenum.  
**DESCRIPTION:** Chalcopyrite, molybdenite, and pyrite occur in quartz diorite and dioritized volcanic rocks.  
**WORK DONE:** Geochemical soil survey, 41 samples covering KB 14 and OC 48; percussion drilling, 19 holes totalling 5,560 feet on KB 6, OL 2 and 4, and OLN 6. During 1971, Silver Standard Mines Limited carried out geological mapping at a scale of 1 inch equals 400 feet covering the OC and KB claims.  
**REFERENCES:** *B.C. Dept. of Mines & Pet. Res.*, G.E.M., 1970, p. 227; Assessment Report 3625.

#### HAPPY VALLEY (No. 151, Fig. C)

**LOCATION:** Lat. 50° 16.5' Long. 122° 35' (92J/7E)  
LILLOOET M.D. On the west side of Lillooet Lake, immediately north of the mouth of Ure Creek.  
**CLAIMS:** HAPPY VALLEY 1 and 2.  
**ACCESS:** By boat and road from Pemberton, 12 miles.  
**OWNER:** PHILIP S. BALDEN, 2743 West 22nd Avenue, Vancouver 8.  
**WORK DONE:** Line-cutting.  
**REFERENCE:** Assessment Report 3988.

(92J/3E)

heavy snowfall, the operations  
that operations will resume

, p. 245.

(92J/3E)

northwest of Brandywine

muir Street, Vancouver.  
and granodiorite and quartz

(92J/3E)

thwest of Alta Lake, at

18 HIT Fraction, 2nd  
Section.  
728, 510 West Hastings

occurs near the southern

l soil survey, 262 samples  
ing IT 36, 38, 40-46, IT  
d 2nd Hit Fraction.

(92J/3E)

miles west-southwest of

MPANY LTD., 1472

or quartz diorite. Some  
small fractures on TMC

(92J/7W)

WORK DONE: Prospecting of 16 claims; geochemical survey, 183 soil samples and 30 rock samples taken at random points on the claims covering TMC 1-10 and 17-22.

REFERENCE: Assessment Report 5225.

## COPPER QUEEN, OWL (92J-48, 54, 55) (Fig. C, No. 31)

LOCATION: Lat. 50° 24' Long. 122° 47' (92J/7W)

LILLOOET M.D. On Owl Creek, 6 miles north of Pemberton, between 2,500 and 3,700 feet elevation.

CLAIMS: OWL 1 to 8, OC 1 to 6, 43 to 48, KB 4 to 14, OL 1 to 22, OLS 1 to 30, BO 1 to 7, 9, 11, 12, OCS 15 to 26, OLN 1 to 24, MAR 1 to 22. <sup>13</sup> <sup>23, 24, 25, 27, 28, 30</sup> See over.

OWNERS: J. Scott and L. Harrison.

OPERATOR: UTAH MINES LTD., 1600, 1050 West Pender Street, Vancouver.

METALS: Copper, molybdenum.

DESCRIPTION: The claims are underlain mainly by volcanic rocks of the Pioneer Formation, consisting of andesite tuff and lapilli tuff, lesser volcanic breccia, and minor flows. A tongue of quartz diorite extends into the area from the southwest, toward the outlet of Owl Lake. Several small plugs of diorite intrude the andesite northeast of Owl Lake. Traces of chalcopyrite and molybdenite occur in altered areas north and south of Owl Lake.

WORK DONE: 1973 - surface geological mapping, 1 inch equals 100 feet; linecutting and IP survey, 19.6 line-miles; magnetometer survey, 7 line-miles; VLF-EM survey, 1.7 line-miles; seismic survey, 100 feet; geochemical soil survey, 520 samples taken at 200 by 500-foot grid spacing covering BO 1, 3, 5, 7, 9, OL 5-18, OLN 1, and OLS 11-24; 1974 - surface geological mapping, 1 inch equals 200 feet covering OLS 11-30, OL 7-22, BO 1, 3, 5, 7, 11, and Mar 1-12; time-domain IP survey, 13.28 line-miles, 500-foot grid spacing covering OL 17-22, OLS 23-30, and Mar 1-12; ground magnetometer survey, 22.7 line-miles, 500-foot grid spacing covering OLS 11-30, OL 7-22, BO 1, 3, 5, 7, 11, and Mar 1-12; geochemical soil survey, 425 samples, 500-foot grid spacing, 16.1 line-miles covering OL 17-22, OLS 23-30, and Mar 1-12; surface diamond drilling, four holes totalling 1,800 feet on OLS 23 and Mar 2, 5; linecutting, 16.5 miles of grid on OL 17-22, OLS 23-30, BO 11, and Mar 1-12.

REFERENCES: B.C. Dept. of Mines & Pet. Res., GEM, 1973, p. 249; Assessment Reports 599, 2106, 4623, 4958, 5292.

## CHIP, PEM (Fig. C, No. 102)

LOCATION: Lat. 50° 36' Long. 123° 02' (92J/11E)

LILLOOET M.D. Four miles south of the Hurley River, southeast slope of Chipmunk Mountain, along the east side of Donelly Creek, at approximately 5,000 feet elevation.