

5132

Report on

OPELL COPPER MINES LTD. (NPL)

by

J. M. Black, P.Eng.

August 27, 1974

82M/4E

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 5132 MAP



ASSAYERS
CHEMISTS
GEOCHEMISTS

CORE LABORATORIES LTD.

325 Howe Street Vancouver 1, B.C. Phone 688-3504

Certificate of Analysis

REPORT NO.
1030-30-7031

SAMPLE(S) FROM: ORELL COPPER MINES LTD
P.O. Box 457
Salmon Arm, B.C.

SAMPLE NO.	Cu (%)	Pb (%)	Zn (%)	Fe (%)	Au (oz/t)	Ag (oz/t)
Cu No. 1	.03	.03	.04	49.71	.045	.18
Cu No. 2	.18	.01	<.01	28.76	<.003	.15
China Creek	-	1.72	4.15	-	.009	2.78
Magnetite	.02	-	-	62.50	.018	-
Lower Section	.14	.02	.02	15.18	<.003	.10
End of Road	-	<.01	<.01	-	.003	.04

DATE 25 September 1973 SIGNED

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#1 Location map

#2 Traverse & Geology

#3 Location of major magnetic anomalies indicated

CONCLUSIONS

Zones with a high iron content contain copper and some gold. They have been partly exposed by stripping and have been explored by more than three drill holes. One zone may be continuous for over 1,600' and to have a width of as much as 500'. Within this zone, sections of ore grade may be found.

A lead zinc occurrence with some silver is also of interest. It has been explored by one diamond drill hole.

The geology has been mapped near the main showings but has not been mapped between them. The iron zones, because of their magnetism and conductivity, can be outlined by magnetometer and electrical surveys.

A central area has not been explored. The chance of finding zones of economic interest are good.

RECOMMENDATIONS

It is recommended that the following work be done:

- 1) A ground magnetometer survey to outline zones of high magnetic intensity;
- 2) An E.M.16 survey to outline zones of high conductivity;
- 3) A geological survey along strike from the known zones and of the large central area, together with resampling of some selected zones;
- 4) Possibly a geochemical survey of part of the area;
- 5) Trenching of new anomalies discovered;
- 6) Drilling holes towards targets selected after surface program is completed.

INTRODUCTION

Claims were located in 1925 on Adams Plateau near the Crell showings. Exploration in the area has been intermittent since then. On the claims now held by Crell, much work has been done which demonstrated the presence of mineralized zones. These were examined by the writer on September 15, 1973 and June 24, 1974, accompanied by J. Spelay and C. Kane, both of whom had been active in some of the companies that had previously held the ground.

CLAIMS

The property comprises the 8 Cu. claims 1-8 Record Numbers 126457-126462 and 126347-126348 and the 6 Cro claims 1-6 Record Numbers 125132-125137. The part of the property examined is the Cu. claims.

LOCATION & ACCESS

The claims are on Adams Plateau, between 4,800' and 5,500' elevation on the ridge between Nikwikaia and Kwikait Creeks at latitude 51°01' and longitude 119°30'.

The property is easily accessible by about twenty miles of road from Squilax on the Trans Canada Highway. The claims are traversed by numerous roads built for access to the showings.

WORK DONE

Much trenching and stripping was done about eighteen to twenty years ago. Many of the rock surfaces, because of sloughing, are no longer bare.

Records of some of the work done are not available. It has been supervised by a series of engineers, employed by a series of owners. Results of early work, including possibly some geophysical work, have not been found. In 1967 detailed geological mapping and sampling was done and the results of this work are available.

This work was done by J. Jones under the supervision of H. Weber, P.Eng. of MacDonald Consultants Limited who managed that exploration program. After the surface work was done, three holes were drilled and the assay results from the mineralized sections of cores are also available. Comments below re grade are based on these results as reported in 1967 by MacDonald Consultants Limited.

GEOLOGY

The area is underlain by a series of meta sediments, mostly phyllites of various types and colors. Most of them are brown and argillaceous. Common variations are silicious or limy. These meta sediments are mapped by Campbell* as an unnamed formation referred to as /a.

According to Campbell, it has not been possible to date this formation. It is presumed to be Carboniferous or Permian.

It is interesting to note that this formation occurs also west of Adams Lake and that there also it contains numerous mineral occurrences. This suggests the possibility that the metallic elements and sulphur may have accumulated when the sediments were forming.

The bedding and schistosity strike east northeastward and dip moderately north-westward. Where the bedding can be determined, it has about the same attitude as the schistosity. The schistosity is not everywhere well developed.

Intruding this sedimentary series are minor intrusives, dykes or sills, diabasic in appearance. Larger intrusive masses, granitic in appearance, are exposed at the margins of the area. They presumably are related to many intrusive masses mapped by Campbell and considered by him to be of Jurassic or Cretaceous age.

* R. B. Campbell, G.S.C., Adams Lake, Map 43-1963.

MINERALIZATION

Two types of mineralization occur on the property. One comprises galena and sphalerite finely disseminated in some of the phyllites. This mineralization is exposed near China Creek in the southern part of the Cu. claims.

It is reported by J. Spelay that this occurrence was drilled some years ago with the following results. In the verticle hole, the mineralized zone was cored from 20' to 59' and ran about $2\frac{1}{2}\%$ lead, $2\frac{1}{2}\%$ zinc and $1\frac{1}{2}$ ounces silver per ton.

The other type of mineralization is characterized by the presence of abundant pyrrhotite and/or magnetite. Accompanying these minerals are pyrite, minor chalcopyrite and very minor sphalerite. The rest of these zones comprise country rock and quartz. These zones appear to conform to the bedding or to be nearly conformable.

Figure 1 is a composite at 400' to the inch, made from several of MacDonald Consultants' maps at 100' to the inch, with some details added from their detailed mapping of outcrops at 20' to the inch. On Figure 1, the zones in which pyrrhotite predominates, are at the south and the so-called magnetite zones are at the north. It also shows the assay results of the higher grade sections.

The zones are not completely outlined and additional work needs to be done to find out if some of the segments join.

Figure 2 shows sections through drill holes 9, 10 and 11 (1967). In 9 and 11 the results confirm two zones as exposed at the surface. In 10, the deepest zone does not correlate with surface exposures and its presumed extension to the surface shows where a mineralized zone could be sought.

Presumably the areas that have been trenched and sampled are near natural outcrops that first attracted attention. However, mineralization may extend beyond the limits so far determined.

The map shows a central area about 3,000' across on which little work is known to be done. The road joining the two main areas swings around to the east and does not cross this central area. It is possible that similar mineralization occurs here and that it has not been explored because it is more deeply covered.

Since the geology is mapped only at known occurrences, any geological controls that could cause changes in mineralization are not known. The areas explored are not known to contain the highest grade mineralization. The possibility of finding parts of the zones with higher grade mineralization and of finding new zones, is considered to be good.

SAMPLE RESULTS

The better grade sections are shown on Figures 1 and 2. The highest grades

run from about 0.15% to about 0.21% copper over widths of as much as 35'. Some of the zones are wider than this but are of lower grade.

Most of the samples taken in 1967 were not assayed for gold and silver. A sample taken in September, 1973 of massive magnetite (62.5% Fe.) with minor sulphides ran 0.013 ounces gold per ton, showing that the gold content is appreciable and that the higher grade zones need to be resampled and assayed for gold and silver.

Some of the zones comprise abundant magnetite and this may be worth recovering if a market can be found for it.

MAGNETICS

An airborne magnetometer survey, flown at a height of 1,000' above ground level, outlines an anomaly of about 200 gammas.

A ground magnetometer reconnaissance traverse across most of the copper claims encountered several marked anomalies. This demonstrated that the magnetite pyrrhotite zones can readily be outlined by a ground magnetometer survey.

For most of the traverse, readings were between 2,500 and 2,900 gammas.

Near China Creek at the start of the traverse, the reading was 3,500 gammas, which indicates an appreciable anomaly. This is near the galena sphalerite mineralization and is probably caused by the presence of some magnetite or pyrrhotite.

The traverse followed roads northerly and northwesterly to the most northerly claims of the Cu group.

About the centre of claim Cu 3, an area with strongly variable readings was found. The readings ranged from 300 gammas to 15,250 gammas within short distances. The width of this anomalous area, measured across the regional strike, is about 500'.

Mineralization, comprising pyrrhotite, magnetite and minor chalcopyrite, is exposed in road cuts within this zone. A sample across 35', taken by MacDonalds, assayed 0.21% Cu.

This anomaly appears to be caused by strongly magnetic zones separated by unmineralized phyllite.

This anomaly is roughly aligned with the zone explored by D.D.H.#9, 1967. If the zones join up, the total length is over 1,600'.

About 200' beyond this anomaly, is another one. This has a maximum difference above background of 6,700 gammas. Its width normal to the regional trend, is about 200'. It does not appear to have been explored and is of possible economic interest.

Beyond this, to the northwest, the readings are less than background and some are negative. One of -5,000 gammas was recorded. The cause of this irregular

anomaly cannot be determined until its shape and its relationship to other anomalies is known. The lowest reading is close to the next anomaly to the northwest and may be caused by the lower pole of the body that causes the next anomaly.

Just beyond the negative anomaly is a sharp, positive anomaly about 125' across. One reading of 31,000 gammas was recorded on a magnetite outcrop. This zone has been partly stripped and is of interest.

Farther northwest, in the vicinity of the mineralization explored by D.D.H.'s 10 and 11, 1967, anomalous readings ranging from 10,000 gammas to -17,000 gammas, were found within short distances. These readings reflect the presence of several strongly magnetic bodies. These have been partly stripped and explored by the two drill holes. (See Figure 1.)

CONDUCTIVITY

The mineralized zones contain abundant metallic minerals and, therefore, can be expected to act as conductors. It is likely that conductors like these can be readily detected by any electromagnetic survey.

GEOLOGICAL SURVEY

The main geological relationships have not been established. It is not known if the mineralization is confined to some beds and that the intervening beds are barren. A geological map is necessary to determine these important relationships.

GEOCHEMISTRY

Geochemistry is probably not useful in the areas already mapped, because of the great disturbance of the ground by trenching. If the central area is undisturbed, geochemistry may be useful to confirm anomalies found by geophysical methods. Geochemistry will not be recommended unless conditions are suitable and only if the results of the geophysical work require confirmation.

DRILL PROGRAM

The 1967 program had called for three holes near holes 10 and 11 to test the mineralized zones along strike and at greater depth. These may be recommended again if the zones are found to have an appreciable gold or silver content.

After sampling, the wide area at 'A' may warrant exploration by trenching or drilling. In addition, geophysical results may indicate other zones that need to be explored.

ESTIMATE OF COSTS

The 1967 recommendations included three holes totalling 600'. This was to be a follow-up to three holes drilled. This is considered insufficient to explore

the zones at a depth of 200' and, therefore, it is recommended that, if it is decided to drill these holes, they be increased to 300' with provision to deepen one, making the total 1,000'.

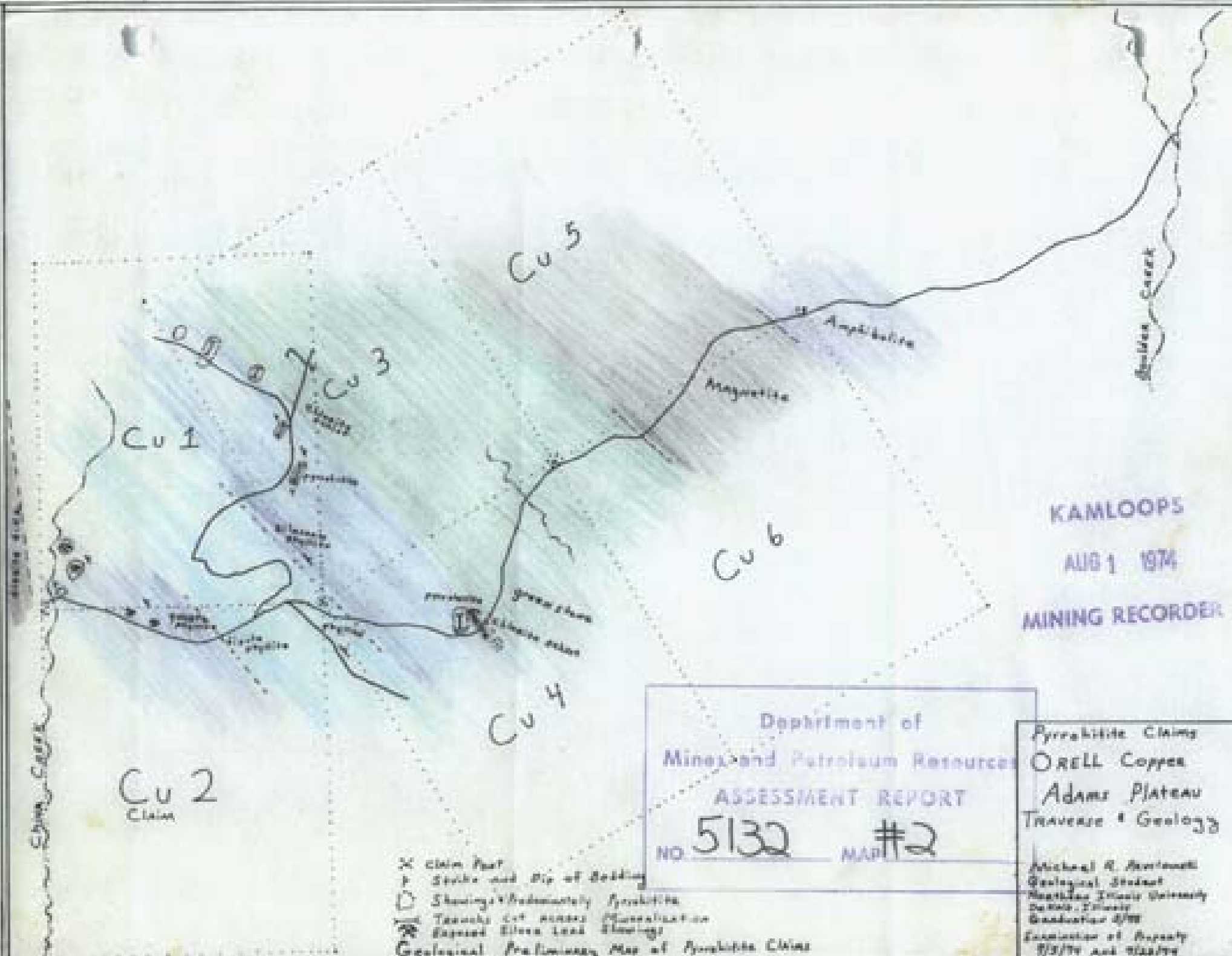
Baseline & grid for geophysical & geological work	\$ 2,000.00
Ground mag survey & interpretation	2,000.00
E.M.16 ground survey & interpretation	2,000.00
Geological mapping & report	2,000.00
Sampling & assaying	2,000.00
Geochemistry survey of part later if necessary	3,000.00
Trenching & bulldozing new anomalies	5,000.00
Transportation	2,000.00
Engineering	2,000.00
Initial drilling if recommended after above work	10,000.00
Mobilization & demobilization	2,000.00
Drilling of any new targets	14,000.00
Contingencies	<u>2,000.00</u>
	\$50,000.00

J. M. Black, P.Eng.
August 27, 1974



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 Mines and Petroleum Resources
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REFERENCE MAP NO 3J
 NORTH THOMPSON SHEET
 PROPERTY LOCATION ORELL COPPER MINES
 SCALE 1" = 3 MILES
 ROAD -----



KAMLOOPS

AUG 1 1974

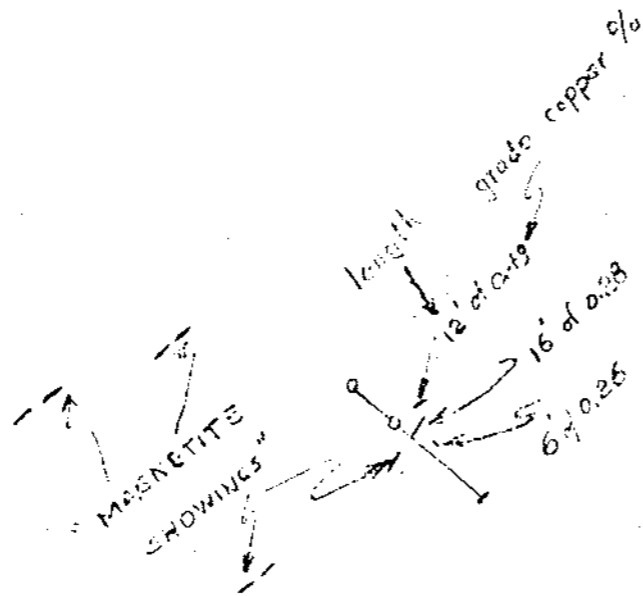
MINING RECORDER

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Pyrrhotite Claims
 ORELL Copper
 Adams Plateau
 Traverse & Geology

Michael R. Armstrong
 Geological Student
 Northern British Columbia
 District, Kamloops
 Graduated 5/78
 Completion of Report
 5/1/79 and 11/2/79

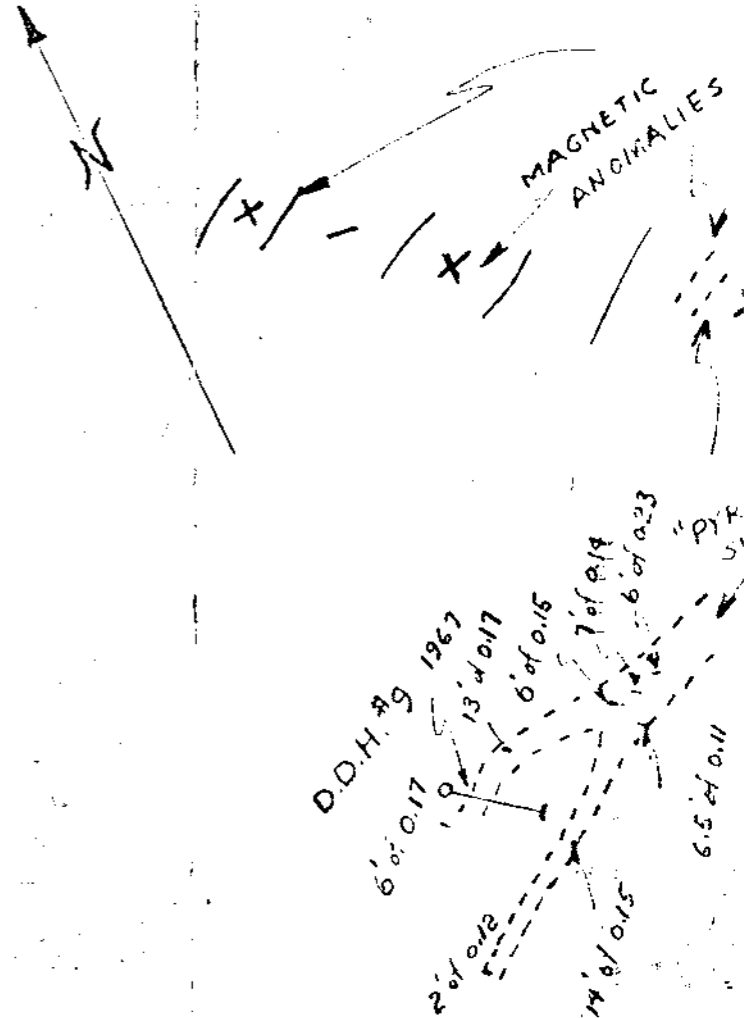
X claim post
 T strike and dip of bedding
 D Showings (predominately pyrrhotite)
 Tranche cut across mineralization
 Exposed Silver Lead Showings
 Geological Preliminary Map of Pyrrhotite Claims



Plan of showings
 CRELL COPPER MINES Ltd. (N.P.L.)
 Composite made from plans prepared by
 MacDonald Consultants Ltd. 1" = 400'
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 Location of major magnetic anomalies indicated.

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 M3

Unexplored area



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NO. 5132 MAP #3