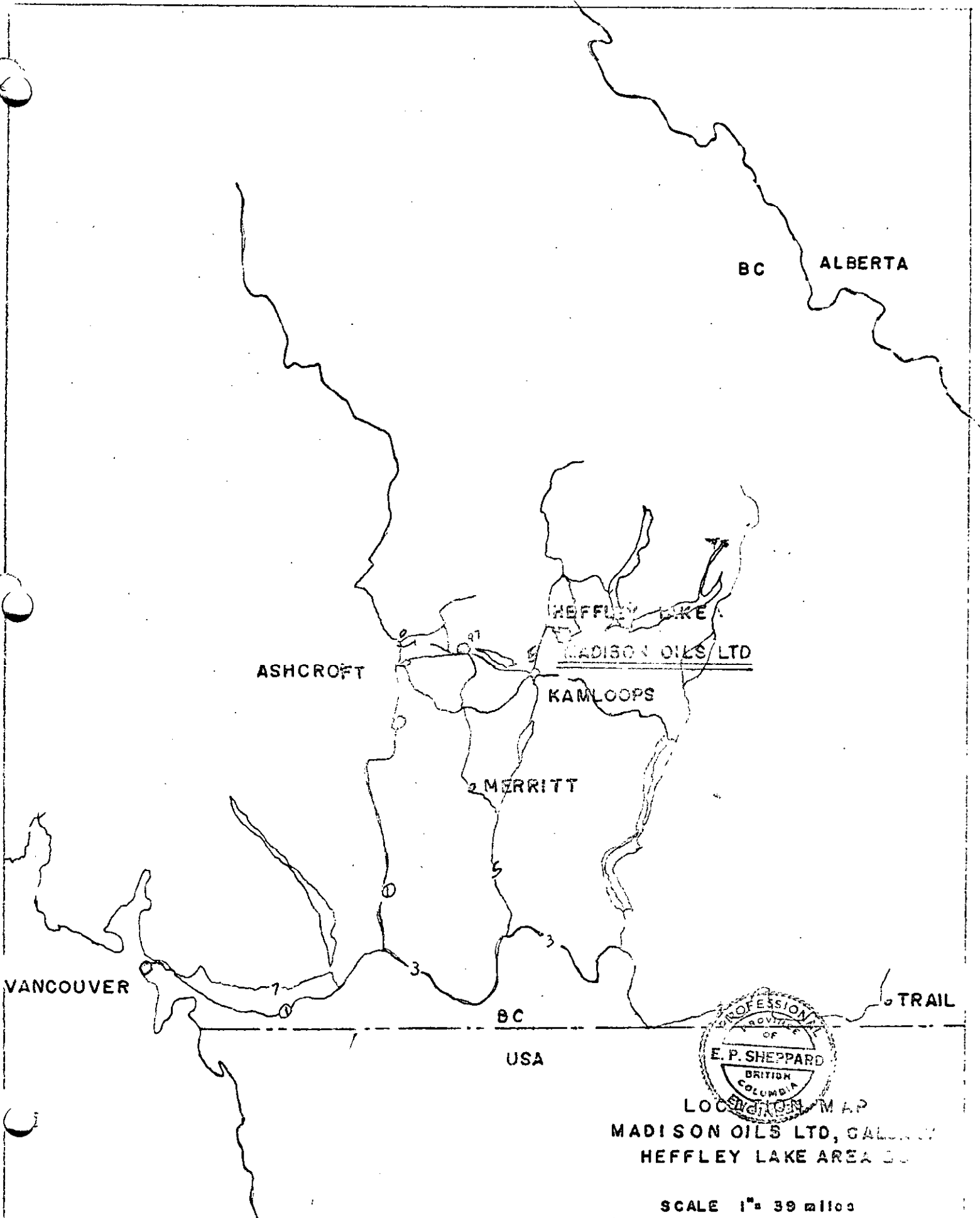


821

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BC ALBERTA

HEFFLEY LAKE

MADISON OILS LTD

ASHCROFT

KAMLOOPS

MERRITT

VANCOUVER

BC

USA

TRAIL



LOCATION MAP
MADISON OILS LTD, GALLENY
HEFFLEY LAKE AREA BC

SCALE 1" = 39 miles

H. L. HILL & ASSOCIATES LTD.

CONSULTING MINING ENGINEERS

844 WEST HASTINGS STREET
VANCOUVER 1, B.C.

February 1, 1966.

GEOLOGICAL REPORT

HEFFLEY LAKE PROPERTY

SUMMARY

Madison Oils Limited, Calgary, owns by record 120 contiguous full-sized lode mineral claims straddling Heffley Lake, British Columbia.

The iron-copper property is 28 miles northeast of Kamloops and in the Kamloops Mining Division of British Columbia. It is accessible by a good gravel road which passes through the center of the claims.

The property covers magnetite, copper showings which have the characteristics of contact metamorphic deposits. Bed rock cuts in the area of the claims have exposed mineral showings in the form of disseminated magnetite and copper up to eight feet in width.

An airborne magnetic anomaly up to four miles long northwesterly, and two miles wide northeasterly, extends through the claims group. It shows strong maximums and minimums, and in other localities these have been found to indicate contact metamorphic type deposits.

Core from diamond drill hole No. 2 contained 36 feet of massive magnetite (not assayed), 1.67% copper and 52 cents in gold (sampled by Myers), 45 feet of 13.0% iron and 0.11% copper (sampled by the writer). The hole was stopped in mineralization. Holes No. 7, No. 8 and No. 9 showed mineralization similar to Hole No. 2. These holes were not sampled. It is felt that the drilling was toward the footwall and may not have been drilled in the most favorable part of the structure, i.e. the altered limestone hangingwall portion.

E. PERCY SHEPPARD

C E R T I F I C A T E

I, E. Percy Sheppard, do hereby certify that I am an independent Consulting Geologist with offices at 402 West Pender Street, Vancouver 3, British Columbia.

I am a member of the Association of Professional Engineers of British Columbia, the Geological Association of Canada, the Society of Exploration Geophysicists, and the A. I. M. E.

I have been active in mining geology and geophysics for the past thirty years.

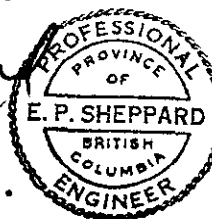
I am a graduate of Dalhousie University, Halifax, Nova Scotia, with a B.Sc. in geology.

The information for the accompanying report was obtained from field work which I did on the property from December 16th to 17th, inclusive, 1965. Diamond drill core was sampled personally on the property, and samples were sent to a recognized assayer for check assaying.

I further certify that I have no interest in the property described herein and do not anticipate any interest as a result of writing this report.

E. Percy Sheppard
E. Percy Sheppard

E. Percy Sheppard, P. Eng.



Vancouver, B.C.
April 1966

RECOMMENDATIONS

It is recommended that the area be further explored by ground magnetic survey, geological mapping, sampling and geochemical prospecting for copper content. The proposed survey should cover the area outlined by the airborne magnetic survey. An investigation of the surrounding anomalies should be made at the same time, as there is a possibility that a large, low grade iron and copper deposit may be outlined.

GEOLOGICAL REPORT

HEFFLEY LAKE PROPERTY, BRITISH COLUMBIA

INTRODUCTION

This report contains the results of a study made of the Heffley Lake property of Madison Oils Limited. The writer visited the property on December 16th and 17th, 1965, accompanied by Mr. L. Manning of H. L. Hill & Associates Ltd. Mr. L. C. Hunt, President of Madison Oils Ltd., showed us around the property.

The study consisted of logging and sampling core from diamond drill holes No. 2, No. 7, No. 8 and No. 9. Core from No. 2 hole was sampled from 57 to 152 feet. The samples were analyzed for iron and copper content at General Testing Laboratories Co. Ltd., 325 Howe Street, Vancouver, B. C. The results and logs are appended to this report.

All previous work on the property was carried out by Mr. W. H. Myers, Geophysical-Geological Consultant, Calgary, and is described in his report to Madison Oils Ltd. dated February 1965. This report was reviewed and is the basis for data concerning the property and details of work accomplished earlier, which was utilized in the present study.

Snow covered the area at the time of the visit and no field work was attempted, other than checking locations of diamond drill holes along the plowed access road.

PROPERTY

A total of 120 unsurveyed lode mineral claims, in the Heffley Lake area of British Columbia, are wholly owned by Madison Oils Limited, 517 Lancaster Building, Calgary, Alberta. The claims are designated as HAL No. 1 to No. 120 inclusive, and are located north and south of Heffley Lake and cover the lake. The claim record numbers are HAL No. 1 to No. 34, 47344 M to 47377 M inclusive, and HAL No. 35 to No. 120, 51943N to 52205N inclusive. They were recorded in the Kamloops Mining Recorder's office on September 18, 1964 and about September 28, 1965. These claims were staked during the period September 12th to 15th, 1964 and late September 1965 for the claims HAL No. 35 to No. 120.

The claims are contiguous and were staked 1,500 feet to the right and left of the location line between posts 1 and 2. The bearing of the location line is N 57° W. The block is 12 claims wide EW, and 10 claims wide NS, and contains 6,240 acres, more or less. These claims are in good standing.

LOCATION

The Madison Oils Limited claims are located on Heffley Lake some 28 miles northeast of Kamloops, B. C. The claims are located in the Kamloops Mining Division of British Columbia. Access to the property is by paved secondary highway No. 5 north from Kamloops to Heffley Creek, a distance of approximately 14 miles. The Todd Mountain gravelled road, which intersects No. 5 Highway at Heffley Creek, runs through the center of the claims. The distance from the intersection to the claims is approximately 14 miles in an easterly direction. A summer resort located near the east end of Heffley Lake provides accommodation for the area. Heffley Lake has an elevation of 3,000 feet: the north part of the claims lies at approximately 5,000 feet above sea level.

Heffley Creek flows through a glaciated valley and the river is partially dammed by the glacial drift forming Heffley Lake. The lake is approximately four miles long. A thin mantle of glacial drift also covers part of the sides of the valley. Timber is sparse, having been logged off several years ago. Rock is exposed on the steeper part of the valley. A thin cover of undergrowth masks part of the area.

HISTORY

In September 1964, 34 claims were staked and recorded, and the number was increased to 120 by staking in September 1965. The initial claims were staked after a reconnaissance magnetometer survey, extending out from old pits, indicated the presence of several strong magnetic anomalies. Geological mapping and sampling of surface pits was carried out during September, October and November 1964.

Six diamond drill holes were started, using a rotary type Shot hole drill (Mayhew-1000). No. 2 hole was the only one to reach bedrock in this effort and 36 feet of core was obtained from it. At a later date Hole No. 2 was deepened to 164 feet, using conventional type diamond drill equipment. Holes No. 7, No. 8 and No. 9 were also started during this program. They are located on the accompanying map. The core from these holes is stored at the summer resort on Heffley Lake, and was logged by Mr. Manning and the writer in December 1965.

No production is reported from this property.

GEOLOGY

Lithology

The iron-copper property of Madison Oils Ltd. described herein is in an area generally underlain by a series of metamorphic rocks of the Cache Creek Group. These Paleozoic rocks are composed

Geology - Lithology (Continued)

of both Carboniferous and Permian age formations, as divided by W. B. Cockfield in his Canada Department of Mines & Resources Memoir 249. The rocks of the Cache Creek Group in the immediate vicinity of the claims group consist of hard, dark grey to black argillites with massive limestones and altered limestones. The massive limestones are cut with numerous dykes of greenish-grey hornblend porphyry. To the south the area is covered with glacial drift. In many areas typical contact metamorphic zones were observed. Southeast of the claims across the lake is a large area of greenstones of the Cache Creek Group. They are fine to medium grained, altered and sheared rocks. Approximately four miles southwest of the claims area intrusive rocks consisting of granite and granodiorite outcrop on Mount Fleet and Mount Lolo. The showings exposed on the north side of Heffley Lake and covered by the claims group have the characteristics of contact metamorphic deposits, although no body of plutonic rock is known to occur in the vicinity. The area to the south is, however, covered by drift. The deposits consist of disseminated or massive magnetite with garnet and epidote in a fine grained dense rock that is undoubtedly altered limestone.

A large body of crystalline limestone outcropping on a steep hill above the showings is cut by numerous dykes of greenish grey hornblend porphyry. Many rusty altered zones occur in the limestone and cuts made near the base of the hill on several of these were found to contain magnetite accompanied by pyrite and pyrrhotite. Up to 6-foot widths of disseminated magnetite have been reported from these old cuts.

The alteration of limestone to skarn is commonly accepted as forming the typical example of contact-metamorphic ore deposits. In this case the showings of magnetite appear to be situated at some distance from the intrusive rock responsible for the metamorphism. The showings occur at or near contact of limestones with greenstones, which is itself metamorphosed and carries some of the ore minerals. It is felt that the orebearing solutions emanated from an intrusive body that is not exposed at surface, either because it lies in the drift covered area or has not been uncovered by erosion. Thus the intrusion responsible for the mineralization must lie below the deposit and the factor limiting the size of orebodies might be the size of limestone mass rather than the position of the granitic rocks.

MAGNETICS

A study of the airborne magnetometer map 4411G (Heffley) 1965 shows a well defined anomaly trending northwesterly through Heffley Lake with an approximate length of four miles, a width of two miles, and a maximum magnetic relief above regional of 2000 gammas.

Magnetics (Continued)

Magnetic lows occur on the east flank of this anomaly and could represent the presence of hydro-thermally altered areas. This type of magnetic anomaly has been observed elsewhere over ore deposits of the type described in this report.

Ground magnetometer work showed extremely sharp maximums and minimums, and it was on the basis of this work that the claims were staked. The claims appear to lie on the east flank of the airborne anomaly and it was felt that further magnetometer work tied in to the claims and drill holes was necessary to determine the position of future drilling. This work has been completed and the results will be included in this report.

It is felt that further work, consisting of magnetometer surveying, mapping, sampling where possible, and geochemical prospecting, should be carried out over the claims group and extended on a reconnaissance basis into and along the anomaly, with the target being a large tonnage iron-copper deposit.

Owing to the distance from the sea coast, copper would be the most profitable metal to search for in that locality. However, if sufficient iron could be indicated to support a pelletizing plant, then copper could be considered as a second product. There is a good possibility of locating concentrations of copper mineralization occurring in association with the magnetite in this particular type of contact-metamorphic geologic environment.

DIAMOND DRILLING

Core was logged from diamond drill holes No. 2, No. 7, No. 8 and No. 9. Samples were taken from the No. 2 hole core.

From 42' to 57' - 15' averaged 1.67% Cu. (Previous assay)
From 57' to 102' - 45' averaged 13.0% Fe and 0.11% Cu.

No iron analyses were made below this depth. Copper content remained the same from 111 ft. to 137 ft., and decreased to .04% copper at 152 ft. (end of hole). This was the only hole assayed. Mineralization in holes No. 7, No. 8 and No. 9 was similar to that in hole No. 2.

Iron and copper assays supplied by Mr. Hunt on hole No. 7 are as follows:

Diamond Drilling (Continued)

<u>Footage</u>	<u>Length</u>	<u>Fe</u>	<u>Cu</u>
83 - 89	5'	43.38%	0.16%
150 - 155	5'	28.16%	0.05%
230.6 - 235.6	5'	32.87%	Tr
263 - 268	5'	48.50%	0.04%
297 - 302	5'	21.54%	0.03%

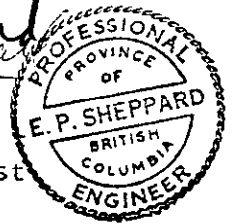
These samples are not continuous down the hole but are separated by bands of waste, indicating the banded occurrence of the iron. Hole No. 8, by visual assay, indicated an iron content similar to hole No. 7. Copper content was not estimated. Hole No. 9 was estimated to be similar to No. 8 both in iron and copper content.

Since the host rock appears to be altered greenstone, with bands of argillite between, it is felt that the holes drilled to date lie in the footwall of the structure. Further drilling should be spotted to cut the structure towards the hangingwall side. It is hoped that an increase in the percentage of sulphides will be found in this part of the structure, and the strength of the magnetics indicates that this may be the case.

H. L. HILL & ASSOCIATES LTD.

E. Percy Sheppard
E. Percy Sheppard

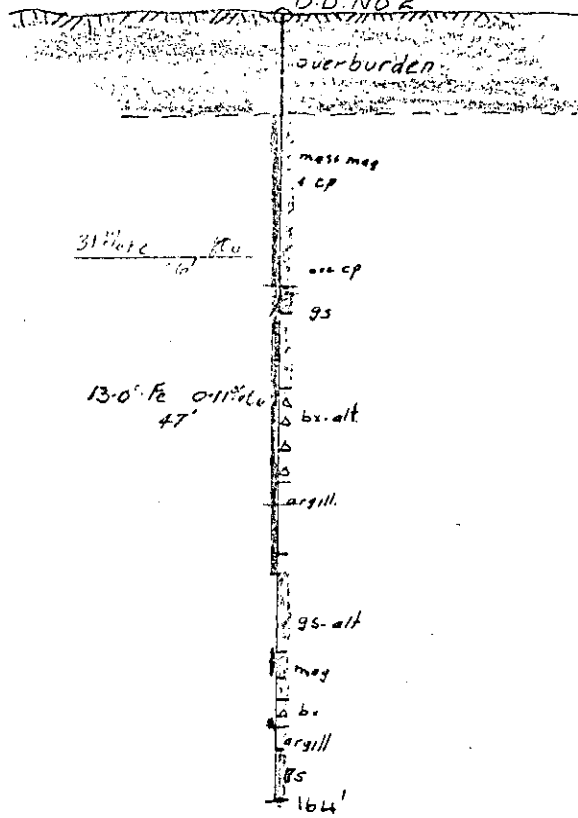
E. Percy Sheppard
Consulting Geologist








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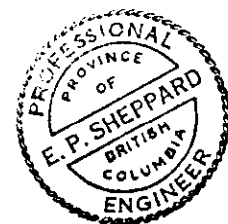
D.D. NO 2

Elev 3000



LEGEND

-  Glacial Drift
-  Mass mag. (Columbia L. Co.)
-  Limestones
-  Sulfides, magnetite, clays.
-  Breccia



MADISON OILS LTD CALGARY
HEFFLEY LAKE AREA BC

D. D. HOLE NO 2

SCALE 1" = 40' Dec 65 EPS

DDH No 7 ELEV

Overburden

ss alt

mass med
mass ss

ss alt

mass med

mass med

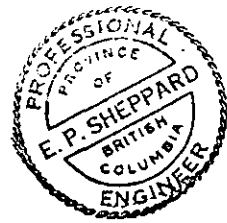
ss

ss alt

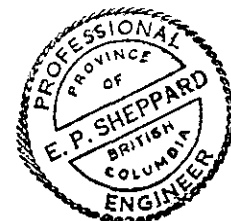
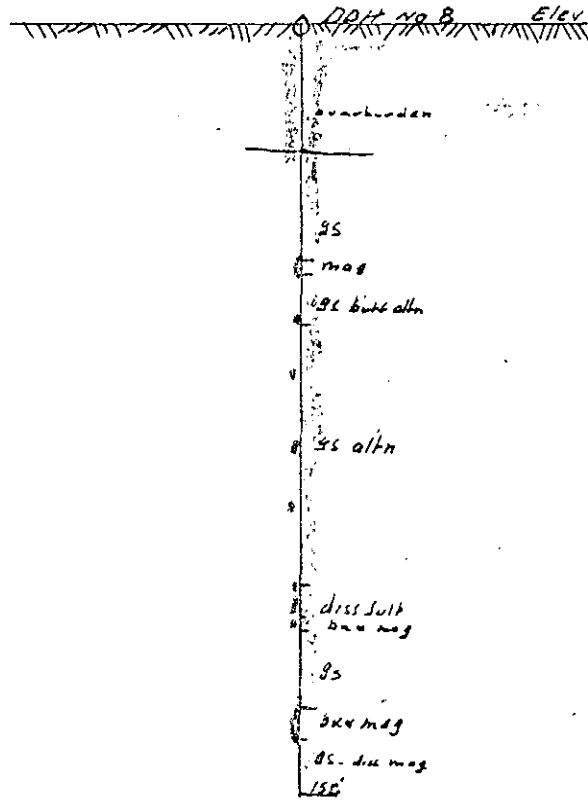
mass med

ss med

302'

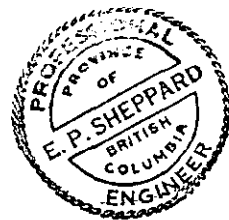
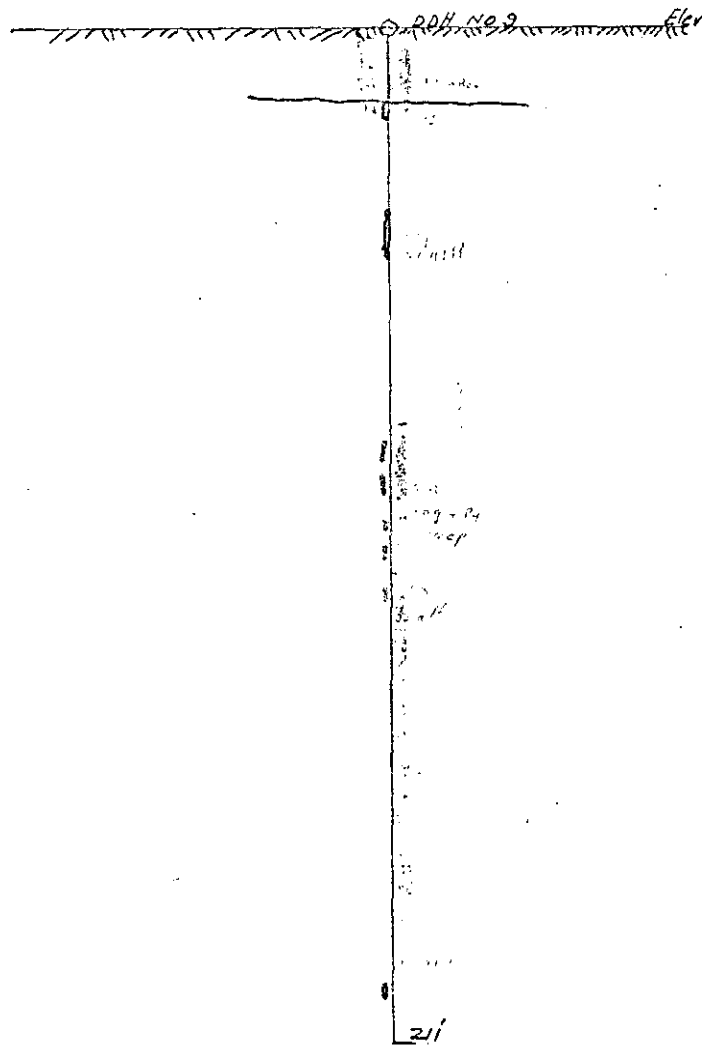


MADISON OILS LTD CALGARY
HEFFLEY LAKE AREA BC
D. D HOLE NO 7
SCALE 1" = 40'



MADISON OILS LTD CALGARY
HEFFLEY LAKE AREA BC
D. D. HOLE NO 8
SCALE 1" = 40'

Dec 68 EPS



MADISON OILS LTD. CALGARY
HEFFLEY LAKE AREA BC
D.D. HOLE NO 9
SCALE 1" = 40'

Dec 65

H. L. HILL & ASSOCIATES LTD.

CONSULTING MINING ENGINEERS

844 WEST HASTINGS STREET
VANCOUVER 1, B.C.

REPORT ON

MAGNETOMETER SURVEY

A magnetometer survey was carried out by John Bucholz, Geologist, from January 16th to 24th, 1966, on the following claims of the HAL group: HAL ⁵⁹39, 60, 61, 62, 17, 64, 1, 2, 66, 7, 35, 13, 8, 3, 9, 14, 15, 10, 4, 11, 16, 34, 12, 6, 77, 78, 81, 82, 80 and ¹⁹90. This magnetometer survey was carried out at the writer's recommendation, and it is certified that the work was done in the proper manner and within the limits of accuracy demanded of this type of survey.

A Sharpe MF-1 Fluxgate Magnetometer was used, and set at 0 over a control station on the Heffley Creek Road, marked "1" on the accompanying map. The proper factor was added to correlate this survey with the regional airborne survey depicted on Map 4411G, 1965. Horizontal control was obtained from the same source. The stations were taken at 500 foot separations and chained along the road and lake from a known point.

The survey outlined a magnetic anomaly which is described below: Beginning in HAL claims 60, 39, through HAL 1, 2 and 66, the survey revealed a magnetic low. In HAL 2, 1 and 7, a northerly trending high was outlined. This anomaly is approximately 1000 feet wide and rises to a magnetic peak of 13,500 gamma. Diamond drill holes #1 to #9, described in this report, are located on this anomaly. Continuing across HAL claims 9, 10, 11, 12, 78, 80, the survey revealed a wide northwesterly trending anomaly rising to a peak of 5000 gamma. This anomaly corresponds with the anomaly outlined by the airborne survey.

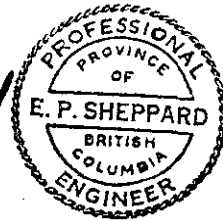
- 2 -

The ground controlled magnetometer survey was recommended to determine the location of the drill holes in relation to the anomaly. The survey showed the holes to be located over a narrow, high anomaly surrounded by magnetic lows and lying on the flank of the major anomaly.

It is felt that the mineralization represented by the narrow anomaly, and cut by diamond drill hole #2 located in the center of the anomaly, lies towards the hangingwall side of the geologic structure.

It is recommended that this type of detailed magnetic survey should be continued on the property to further outline the magnetic anomalies located by airborne methods, before diamond drilling is resumed.

E. Percy Sheppard
E. Percy Sheppard



E. Percy Sheppard, P. Eng.
Consulting Geologist

Vancouver, B.C.
April 1966

821

DO NOT FILE

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of An affidavit on application for certificate of work covering the Hal group of mineral claims in the Kamloops Mining Division.

SUB - MINING RECORDER
RECEIVED
SEP 20 1966
M.R. # 99521^D \$ 31^W
VANCOUVER, B. C.

I, E. Percy SHEPPARD
of 402 - West Pender, Vancouver

in the Province of British Columbia, do solemnly declare that

the following is a true statement of expenses incurred in the conduct of a geological survey and a magnetometer survey of a portion of the Hal Group of Mineral Claims in the Kamloops Mining Division, during the periods December 16 & 17, 1965 and January 16 to 24, 1966.

Geological report:

Examination & Report, H. L. Hill & Assoc. Ltd.	\$500.00	
Assays	61.50	
Air fare	62.55	
Room & meals	20.20	\$644.25

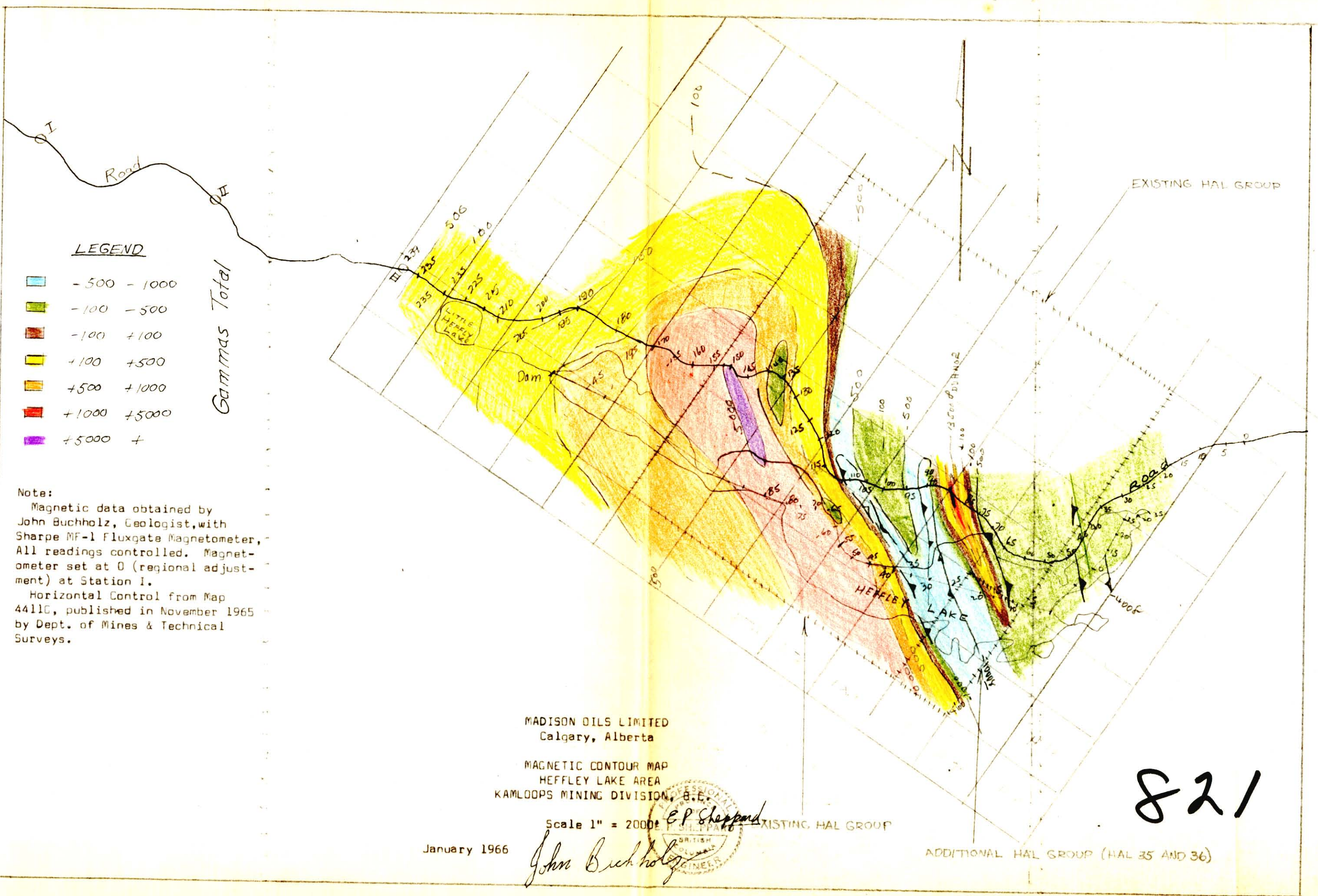
Magnetometer survey:

Fieldwork- John Bucholz-Jan. 16 to 24, 1966	350.00	
Magnetometer rental	220.00	
Drafting	65.00	
Car rental	80.00	715.00
		<u>\$1,359.25</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the CITY
of VANCOUVER, in the } E. Percy Sheppard
Province of British Columbia, this 28
day of SEPTEMBER, 1966, A.D. }

[Signature] SUB - MINING RECORDER
A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.



LEGEND

- 500 - 1000
- 100 - 500
- 100 +100
- +100 +500
- +500 +1000
- +1000 +5000
- +5000 +

Note:
 Magnetic data obtained by John Buchholz, Geologist, with Sharpe MF-1 Fluxgate Magnetometer. All readings controlled. Magnetometer set at 0 (regional adjustment) at Station 1.
 Horizontal Control from Map 4411C, published in November 1965 by Dept. of Mines & Technical Surveys.

MADISON OILS LIMITED
 Calgary, Alberta
 MAGNETIC CONTOUR MAP
 HEFLEY LAKE AREA
 KAMLOOPS MINING DIVISION, B.C.

Scale 1" = 2000'
E.P. Sheppard
John Buchholz

January 1966

821

ADDITIONAL HAL GROUP (HAL 35 AND 36)



- 2 DIAMOND DRILL HOLE
- 61,000 T MAGNETIC CONTOUR
- MAGNETIC LOW

- GLACIAL DRIFT
- ARGILLITES AND GREENSTONES
- LIMESTONES AND ALTERED LIMESTONES
- SWIFDS

MADISON OILS LTD, CALGARY
 HEFFLEY LAKE AREA BC
 MAGNETICS & GEOLOGY
 HAL GROUP OF CLAIMS

SCALE 2.5" = 1 MILE APPROX. JAN 1966
 EPS

821