

2404

93L/2E

GEOPHYSICAL & GEOCHEMICAL REPORT

on the

MO CLAIMS (Nos. 1 to 20 inclusive)

and

CD CLAIMS (Nos. 1 to 6 inclusive)

SITUATED IN THE OMINECA MINING DIVISION
and
1 Mile S.E. of the S. end of Owen Lake
British Columbia

N.T.S. 93 L/2

Latitude $54^{\circ} 00'$ N, Longitude $126^{\circ} 40'$ W.

and owned by

A. MacDonald

Field Work between Sept. 26 and November 7, 1969

Report by

D.R. Cochrane, P.Eng.

November 25, 1969

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SUMMARY AND CONCLUSIONS

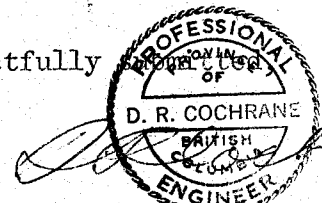
Geochemical soil sampling and magnetometer work was conducted on portions of the M0 and CD claims in the fall of 1969. The property is south of Nadina River and close to Owen Lake.

The vertical component fluxgate magnetometer survey outlined a "cliff" like magnetic ridge with a maximum amplitude of approximately 8000 gammas, but averaging about half this amount. This steep magnetic gradient trends north through the claims and lies roughly a claim length west of the (zero) base line. The magnetic feature may be interpreted as a contact between two rock units of large susceptibility contrasts. The most magnetic lithologic unit lying to the east, may have a near horizontal attitude.

The soil samples were analyzed for copper, lead, zinc and silver. These metals have strongly associated areal distribution patterns. The content of copper and lead in the upper "B" soil horizon is, on the whole, close to normal crustal averages, whereas zinc and silver are present in amounts considerably above normal averages.

The northeast grid area is geochemically interesting and this is some distance away from the aforementioned magnetic anomaly.

Respectfully



D.R. Cochrane, P.Eng.

November 16, 1969.

Delta, B.C.

INTRODUCTION

Between October 7 and November 7, 1969, a field crew, under the supervision of A. MacDonald, completed approximately seven line miles of linecutting, a geochemical soil sampling survey and a magnetometer survey on 26 MO and CD claims. The purpose of the work was to investigate an aeromagnetic anomaly shown on G.S.C. Magnetic Map 53016, Owen Lake, Sheet 93 L/2.

This report describes the procedures employed in the field and discusses the results of the work.

LOCATION AND ACCESS

The claims are situated 24 air miles due south of the town of Houston and one mile S.E. of the south end of Owen Lake, in the northern interior of British Columbia. Normal access is by car or truck, south from Houston on the Morice River gravel-surfaced road for a distance of 32 miles. This road bisects the claim group. The national topographic code area is 93 L/2 latitude 54° 00' N; longitude 126° 40' W.

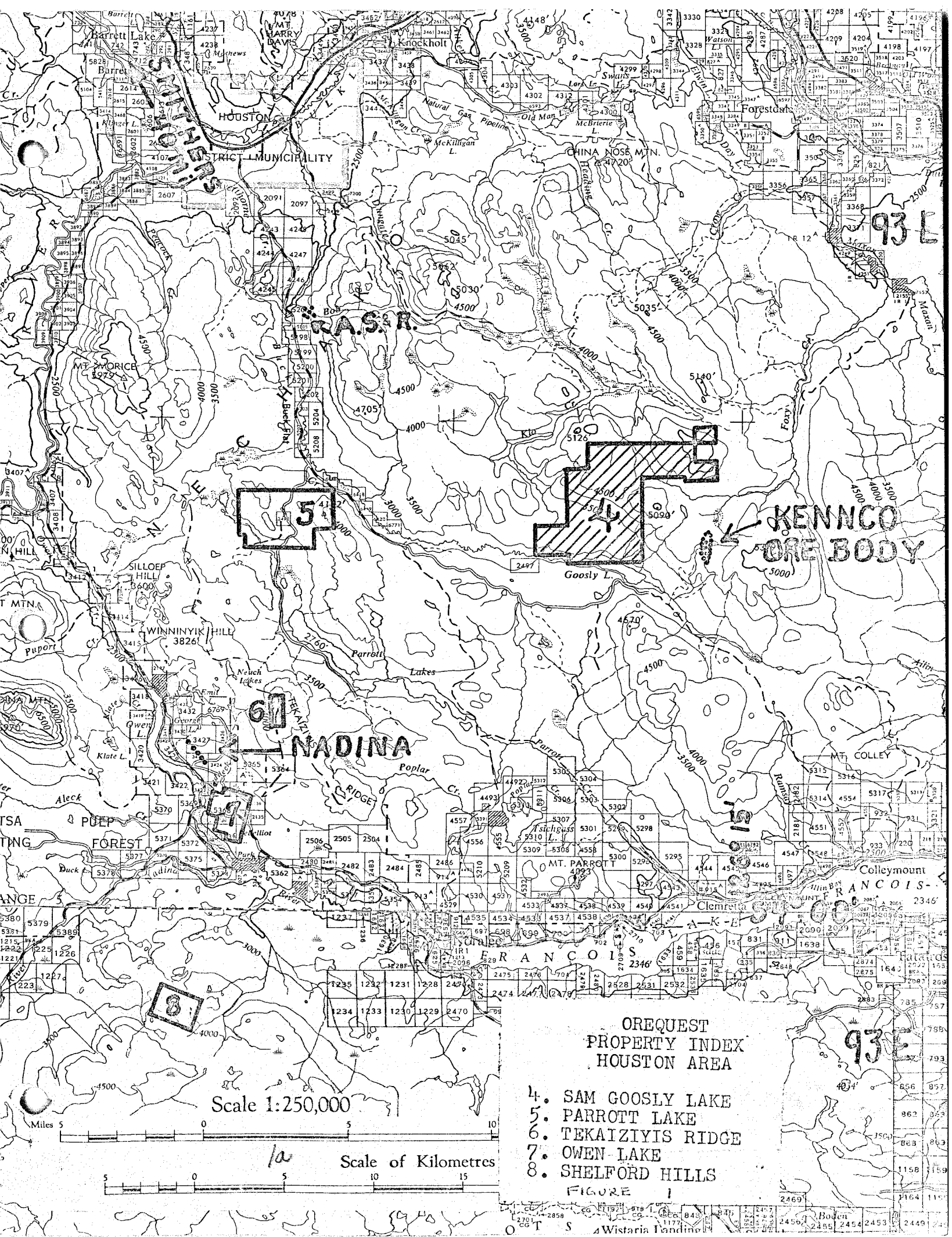
CLAIMS AND OWNERSHIP

The MO claims were located by Mr. A. MacDonald of Vancouver, on the 6th of May, 1969; and the CD claims located by Mr. J.J. Tickner as agent for Mr. MacDonald. The CD claims were staked on the 7th of May, 1969. Recording was conducted in Smithers, B.C. on the 8th of May, 1969.

Pertinent claims data follows:

<u>Claim Name</u>	<u>Tag Numbers</u>	<u>Record Numbers</u>
MO 1 to 8 inclusive	992701 to 992708 incl.	70735 to 70742 inclusive
MO 9 to 20 "	992719 to 992730 "	70743 to 70754 "
CD 1 to 6 "	992751 to 992756 "	70864 to 70869 "

This group of claims is shown on accompanying Figure #2, (Claims Map).



Scale 1:250,000

Scale of Kilometres

OREQUEST
PROPERTY INDEX
HOUSTON AREA

- 4. SAM GOOSLY LAKE
- 5. PARROTT LAKE
- 6. TEKAIZIYIS RIDGE
- 7. OWEN LAKE
- 8. SHELFORD HILLS

FIGURE 1

93 L

KENNCO
ORE BODY

5

4

6

7

8

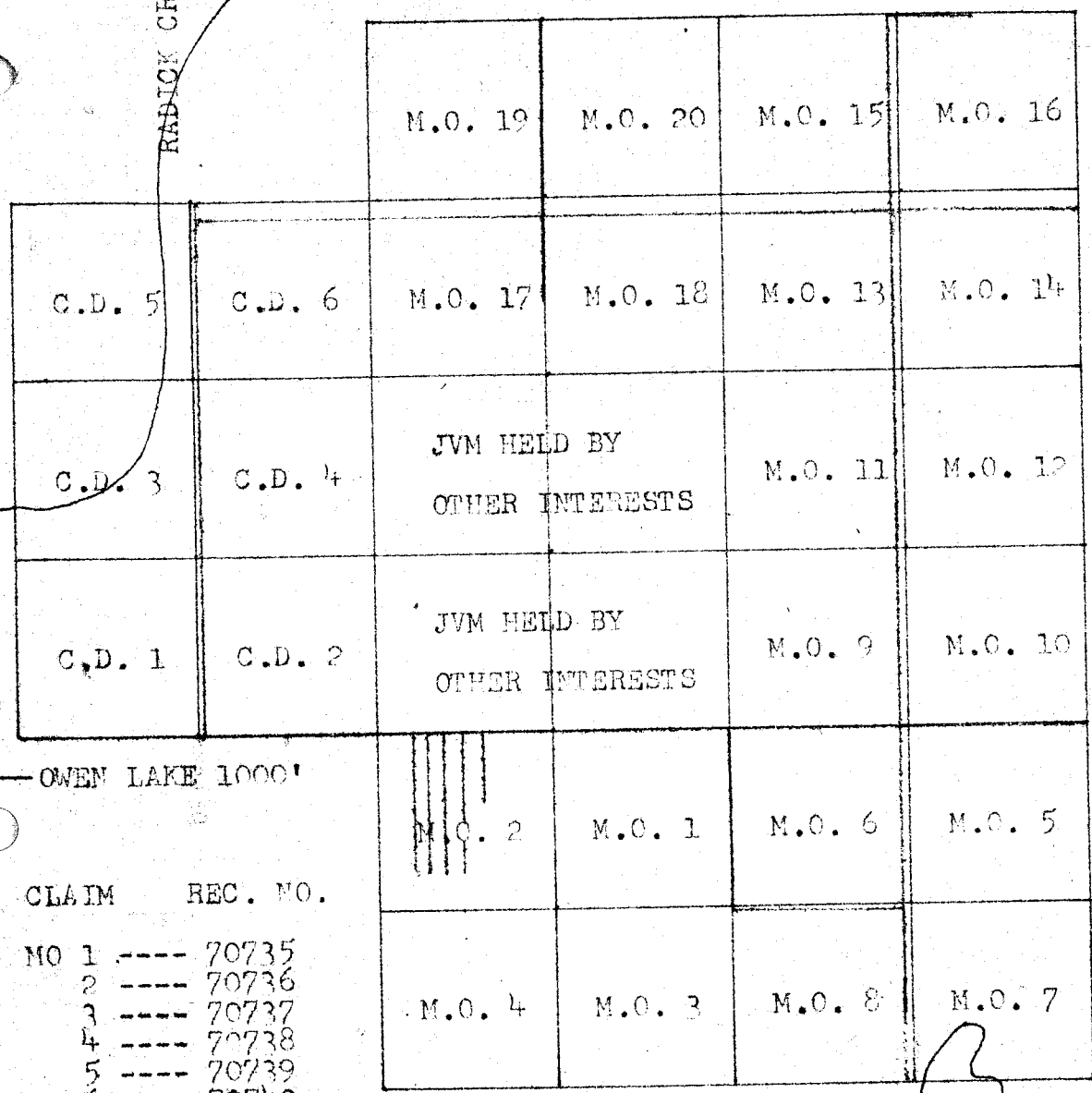
93 E

OWEN LAKE PROPERTY (7)

16



RADICK CR.



← OWEN LAKE 1000'

CLAIM REC. NO.

- MO 1 ---- 70735
- 2 ---- 70736
- 3 ---- 70737
- 4 ---- 70738
- 5 ---- 70739
- 6 ---- 70740
- 7 ---- 70741
- 8 ---- 70742
- 9 ---- 70743
- 10 ---- 70744
- 11 ---- 70745
- 12 ---- 70746
- 13 ---- 70747
- 14 ---- 70748
- 15 ---- 70749
- 16 ---- 70750
- 17 ---- 70751
- 18 ---- 70752
- 19 ---- 70753
- 20 ---- 70754

- CD 1 ---- 70864
- 2 ---- 70865
- 3 ---- 70866
- 4 ---- 70867
- 5 ---- 70868
- 6 ---- 70869

BELLISLOT LAKE

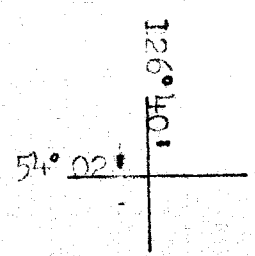


FIG. 2

OREQUEST EXPLORATION SYNDICATE

MO & CD CLAIMS OMINECA M.D.

MO 1-8 STAKED MAY 6/69
RECORDED MAY 8/69

MO 9-20 STAKED MAY 7/69
CD 1-6 " " "

MO 9-20, CD 1-6 REC. MAY 8/69
1" = 1500'

GENERAL SETTING

The claims are located in the Nechaco Plateau subdivision of the Interior Plateau Physiographic System of British Columbia. This area is a moderately rounded upland surface with prominences up to 7000 feet above M.S.L. Locally the topography is less than 5000 feet.

The bedrock geology of the area, as compiled by N.C. Carter and R.V. Kirkham (B.C. Dept. of Mines Map 69-1), shows the claims underlain by a Lower (?) Middle Jurassic volcanic sequence composed of andesite, rhyolite tuffs and breccias; and unconformably overlain by patches of tertiary andesite and basalt. This section of B.C. was occupied by Pleistocene ice and moderately thick amounts of glacial drift and lacustrine deposits cover much of the valley bottoms. There is a relatively thin mantle of drift at higher elevations. Approximately four claims are covered by swamp, presumably a remnant of glacial Lake Owen.

FIELD PROCEDURES

(i) Line cutting:

Field work ground control lines were cut with axes and power saws and chained and flagged at 100 foot intervals. There are two main tie (cross) lines, namely 50 (plus 00 North) and 86 N, which are parallel to each other and at azimuth 100° (true). There are three main base lines which are parallel and numbered 24 (plus 00) W, 0 + 00 and 24 East. They are at right angles to the tie lines and at azimuth 010° (true). There is one small gridded area centered at 11 W, 50 N. (See Reconnaissance Magnetometer Map - Figure #3). Messrs. MacDonald, Foreshaw and Tickner established the grid.

(ii) Soil Sampling

Geochemical soil samples were collected by Messrs. Foreshaw, MacDonald and Tickner from the "B" soil horizon and at a depth normally not exceeding 5 inches from surface. Samples were collected from a small hole excavated by shovel. A sample of approximately 200 gms. was placed in a standard water-resistant kraft paper geochemical bag. Samples were collected at 100 foot station intervals, and consecutively numbered bags were correlated with station coordinates on field note forms. Field notes describing the sample depth, soil horizon and soil texture (plus pertinent remarks) were kept by the samplers. The soil samples, bagged in cardboard boxes, were shipped to Vancouver and analyzed for Cu., Ag., Pb., Zn., (some for Mo. and Hg.) at Vancouver Geochemical Laboratories Ltd., 1521 Pemberton Ave. The laboratory oven dried and screened the samples (-80 mesh) in Vancouver. The analytical procedure is a hot HNO_3 and HClO_4 atomic absorption process.

(iii) Magnetometer

The magnetometer survey was completed by Mr. Foreshaw (certificate appended) deploying a Sharpe MF-1 vertical component fluxgate magnetometer. (instrument specifications are appended) The magnetometer was calibrated to zero gammas at a base station 2 miles north of the property on the access road. Mr. Foreshaw checked into this main base station in the morning and at night. Subsidiary bases were established at grid intersections and all lines were surveyed in "loop" form, readings at 100 foot intervals along the control grid. The line station, number, time, scale value, reading and remarks were recorded on standard field note forms. The field readings were corrected graphically on a time delta-gamma drift chart. The largest correction for a day was 40 gammas. The corrected magnetometer readings are displayed on the graphics accompanying this report.

PRESENTATION AND PROCESSING OF DATA

The magnetometer survey results are shown on three maps - Figure #3, reconnaissance magnetometer survey; Figure #4, magnetometer readings - detailed area; and Figure #5, magnetic plan, detailed area. Figure #3 is at a scale of 1":400 feet, and Figures 4 and 5 at 1":100 feet. Statistical computation used in interpretation of data was completed by hand.

The geochemical results are presented in four maps: Figure 6, copper; Figure 7, lead; Figure 8, zinc; and Figure 9, silver. Calculation of threshold and mean was conducted on a Programma 101 computer using a standard mean, standard deviation, correlation coefficient programme for variables taken two at a time. Anomalous values are defined as those values greater than the arithmetic mean plus two standard deviations.

DISCUSSION OF RESULTS

A. Magnetometer Survey

The airborne magnetometer anomaly, on which the claims were located, is a thumb print type, rising from a background of approximately 5100 gammas, to just over 7000 gammas. The west flank of the anomaly is much steeper than the east, and the west flank trends just east of north.

The ground magnetometer survey indicated much the same sort of anomaly but added a great amount of detail. The ground readings ranged from a low of -1200 gammas, to a high of 8400 gammas. Background, away from the anomaly, is close to zero. The anomaly, as shown in Figures 3 and 5, is essentially a steep magnetic gradient rising from the close to zero background to 4100 gammas on line 86 N, and to 8400 gammas close to line 50 north. The magnetic gradient is gentle on the east flank, decreasing to an average of about 1500 gammas on line 24 east.

This anomaly reflects a large change in bulk magnetic susceptibility between two bedrock blocks in contact and between station 16 and 20+00 west throughout the surveyed area. This magnetic situation may be interpreted as a contact between two gently (easterly) dipping rock units, the higher magnetic susceptibility block overlying the lower susceptibility block. The "S" shaped response at this contact may be interpreted as a boundary effect. The response must be due to near surface causes.

B. Geochemical Results

The following table summarizes the statistical data compiled on the geochemical results.

<u>Metal</u>	<u>Aritmetic Mean</u>	<u>Std. Deviation</u>	<u>Anomalous Threshold (approximately)</u>
Copper	17.30	13.77	40
Lead	24.82	34.42	95
Zinc	249.03	139.38	530
Silver	1.4495	0.4923	2.5

The enclosed maps are coloured at the closest integer values; (a) near the arithmetic mean, and (b), at the anomalous threshold (AM + 2 std. deviations). The coefficient of correlation between the copper and lead values is 0.19.

B (i) Copper

The copper content of the upper "B" soil horizon, (based on hot acid extraction), is displayed in Figure 6. The area of largest amplitude is the northeast map corner, where values along the north section of line 24 E, and on 102 N averaged 42 p.p.m., a considerable amount above the total population average of 17. The highest copper content reported occurs in this area at 30 E, 102 N and is 74 p.p.m.

In general, soil copper content decreases to the south and west away from the aforementioned "probably" anomalous group, and there are only 4 additional samples with amplitudes which may be classed as probably anomalous. Each one of these, however, is isolated, but all lie within the "above average" copper in soil envelopes.

B (ii) Lead

The lead content of the soils is graphically displayed in Figure 7. Twelve individual soil samples may be classed as "above average". The most significant group is located at, and close to, station 86 N; 24 E. The line due east of this point is characterized by "above average" lead content, in addition to three "probably" anomalous values. Two sample locations in the gridded area of claim MO 2 were found to be "probably" anomalous. The general background in this vicinity is well below the total population average.

B (iii) Zinc


The zinc content of the soils on the MO and CD claims exhibited the largest range above average and threshold of all metals analyzed for. The average zinc content in soils, reported in Hawkes and Webb (Geochemistry in Mineral Exploration) is 50 p.p.m. and range 10 to 300 p.p.m. The arithmetic mean of the zincs on the MO and CD claims is 250, and ranges between 25 and 1000 p.p.m. Clearly then, this soil may be broadly categorized as zinc rich. The threshold limit in the high zinc soil was placed at 530, and a total of 14 samples contained amounts in excess of this value. The zinc content

on the whole, shows strong corresponding relationships with the lead distribution. The most interesting area of both metals is at the same corner (86 n: 24 E) and other "above average" and "probably" anomalous points are coincident or nearly so. The lines east of this station, and also north, are conspicuously high. One further area worthy of note is situated on CD 6 (12 W; 86 N) where a zinc value of 270 is located and has a corresponding lead content of 30. The soil at the station immediately east contained 540 p.p.m. zinc.

B (iv) Silver

The average silver content of the area investigated is quite high at 1.44 p.p.m. Hawkes and Webb estimate an average crustal (soil) abundance of 0.1 p.p.m. and Mason (Principles of Geochemistry) reports the same. Silver content ranged from less than 0.5 to 5.0 p.p.m. Figure 9 shows the areal distribution of silver and the strong similarities between the silver, zinc and lead is readily apparent. Again, the northeast property sector is the most consistently above average and anomalous area.

Respectfully submitted

A circular professional seal for a British Engineer. The outer ring contains the text "PROFESSIONAL ENGINEER". The inner ring contains "PROVINCE OF". The center contains the name "D. R. COCHRANE" and "BRITISH". A signature is written across the seal.

D. R. Cochrane P. Eng.

C E R T I F I C A T E S

FORSHAW, R.T., Instrument operator, age 22; has been employed in various phases of mineral exploration for four years while working for Hunttec Ltd., Granby Consolidated Mines, San Jacinta Mines, and Semco Exploration. Employed by Orequest Exploration Syndicate since the spring of 1969 working under professional supervision.

TICKNER, J.J., Geological Technician, 2 years of geological training at U.B.C. in 1960 to 1962 inclusive. Employed recently ('65) by Silver Standard Mines; ('66 - 67) by Asbestos Corp. and ('67) by Noranda Exploration. Has been employed by Orequest Syndicate since 1968 and engaged in various forms of geochemical, geophysical and geological surveys.

COCHRANE, D.R., M.Sc.(Eng.), P.Eng., Geological Engineer.

Engaged in mineral exploration since 1962 while employed with U.S. Steel, Noranda Exploration, Meridian Syndicate and Geo-X Surveys. Experience in Canada, U.S.A., West Indies, Latin and South America.

MacDONALD, A., B.A., Geologist, engaged in mineral exploration since 1955 while employed by Farwest Mining, United Keno Hill, Peso Silver, Kerr Addison, New Jersey Zinc, Manager of Meridian Exploration Syndicate and Orequest Syndicate.

PERSONNEL AND DATES WORKED

<u>Name</u>	<u>Occupation</u>	<u>Dates Worked</u>
		<u>1 9 6 9</u>
A.J. MacDonald, P.Eng.	(a) Supervision and soil sampling	Oct. 7, 8, 9 Oct. 24 - Nov. 7
	(b) Line cutting	Sept. 26 - 29
R. Forshaw	(a) Line cutting	Sept. 26 - 29
	(b) Soil sampling and magnetometer survey	Oct. 7 to 9 Oct. 24 - Nov. 7
D.R. Cochrane, P.Eng.	Report preparation and Data processing	Nov. 17, 20, 24 and 25.

Vancouver Geochemical Laboratories Ltd.

1521 PEMBERTON AVENUE NORTH VANCOUVER, B.C., CANADA TELEPHONE: 604-988-2171

J. R. WOODCOCK
CONWAY CHUN

November 21, 1969

TO: Mr. Angus MacDonald
Orequest Syndicate
#808, 837 West Hastings St.
Vancouver 1, B. C.

FROM: Mr. Laurie Nicol, Supervisor Chemist
Vancouver Geochemical Laboratories Ltd.
1521 Pemberton Avenue
North Vancouver, B. C.

SUBJECT: Analytical procedures used to process acid soluble molybdenum, copper, zinc, silver and lead in geochemical samples received from Orequest Syndicate during 1969.

1. Sample Preparation

- (a) Geochemical soil, silt and rock samples were received in the laboratory in wet-strength 3½ x 6½ Kraft paper bags.
- (b) The wet samples were dried in a ventilated oven.
- (c) The dried soil and silt samples were sifted, using an 80-mesh stainless steel sieve. The plus 80-mesh fraction was rejected and the minus 80-mesh fraction was transferred into a new bag for analysis later.
- (d) The dried rock samples were crushed and pulverized to minus 80-mesh. The pulverized sample was then put in new bag for later analysis.

2. Methods of Digestion

- (a) 1.00 gram or 0.50 gram of the minus 80-mesh samples was used. Samples were weighed out by using a top-loading balance.
- (b) Samples were heated in a sand bath with nitric and perchloric acids (15% to 85% by volume of the concentrated acids respectively).
- (c) The digested samples were diluted with demineralized water to a fixed volume and shaken.

3. Methods of Analyses

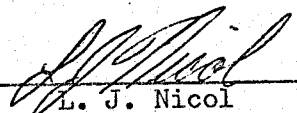
(a) Molybdenum analyses:

Molybdenum analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 with a molybdenum hollow cathode lamp. The digested samples were aspirated directly into a nitrous oxide, acetylene flame. The results were read out on a Photovolt Varicord Model 43 chart recorder. The molybdenum values, in parts per million, were calculated by comparing a set of molybdenum standards.

(b) Copper, zinc, silver and lead analyses:

The above element analyses were determined by using a Techtron Atomic Absorption Spectrophotometer Model AA4 or Model AA5 with their respective hollow cathode lamp. The digested samples were aspirated directly into an air acetylene flame. The results, in parts per million, were calculated by comparing a set of standards to calibrate the atomic absorption unit.

4. The analyses were supervised or determined by Mr. Conway Chun, or Mr. Laurie Nicol and their laboratory staff.


L. J. Nicol

VANCOUVER GEOCHEMICAL LABORATORIES LTD.

MF - 1 FLUXGATE MAGNETOMETER SPECIFICATIONS

Sensitivity: 20 gammas per scale division on
1000 gamma range

Readability: 5 gammas (1/4 scale division) on
1000 gamma range

Ranges (in 1000 gammas): 1, 3, 10, 30, 100.

Maximum Range: \pm 100,000 gammas

Latitude adjustment: 10 k to 75 k gammas,
Northern hemisphere convertible to
10 k to 75 k gammas.
Southern hemisphere or \pm 30 k
equitorial.

Dimensions: 7" x 4" x 16" including case.

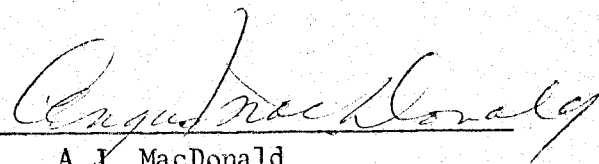
Weight: 9 lbs.

Power: 12 "C" cell flashlight batteries

COST BREAKDOWN

1. Wages	(total 44 man days)		
R. Forshaw	22 man days @ \$35/man day	\$	770.00
A. MacDonald	22 man days @ \$50/man day		1,100.00
2. On property transportation	22 days @ \$12/day . .		264.00
	(rental of 4x4 truck)		
3. Magnetometer rental	20 days @ \$8.50/day .		170.00
4. Geochemical analysis	305 samples @ \$2.70. . . .		823.50
5. Data processing and report preparation			
D.R. Cochrane, P.Eng.		328.12
6. Board Loss (Nadina Camp)			
44 man days @ \$7.50/man/day		330.00
			<hr/>
			\$ 3,785.62
			<hr/> <hr/>

Signed



A.J. MacDonald

16W

14W

12W

10W

8W

6W

56N

56N

54N

54N

52N

52N

50N

50N

48N

48N

46N

46N

44N

44N

42N

42N

40N

OTHER INTERESTS

CD 2

2404
MO 2

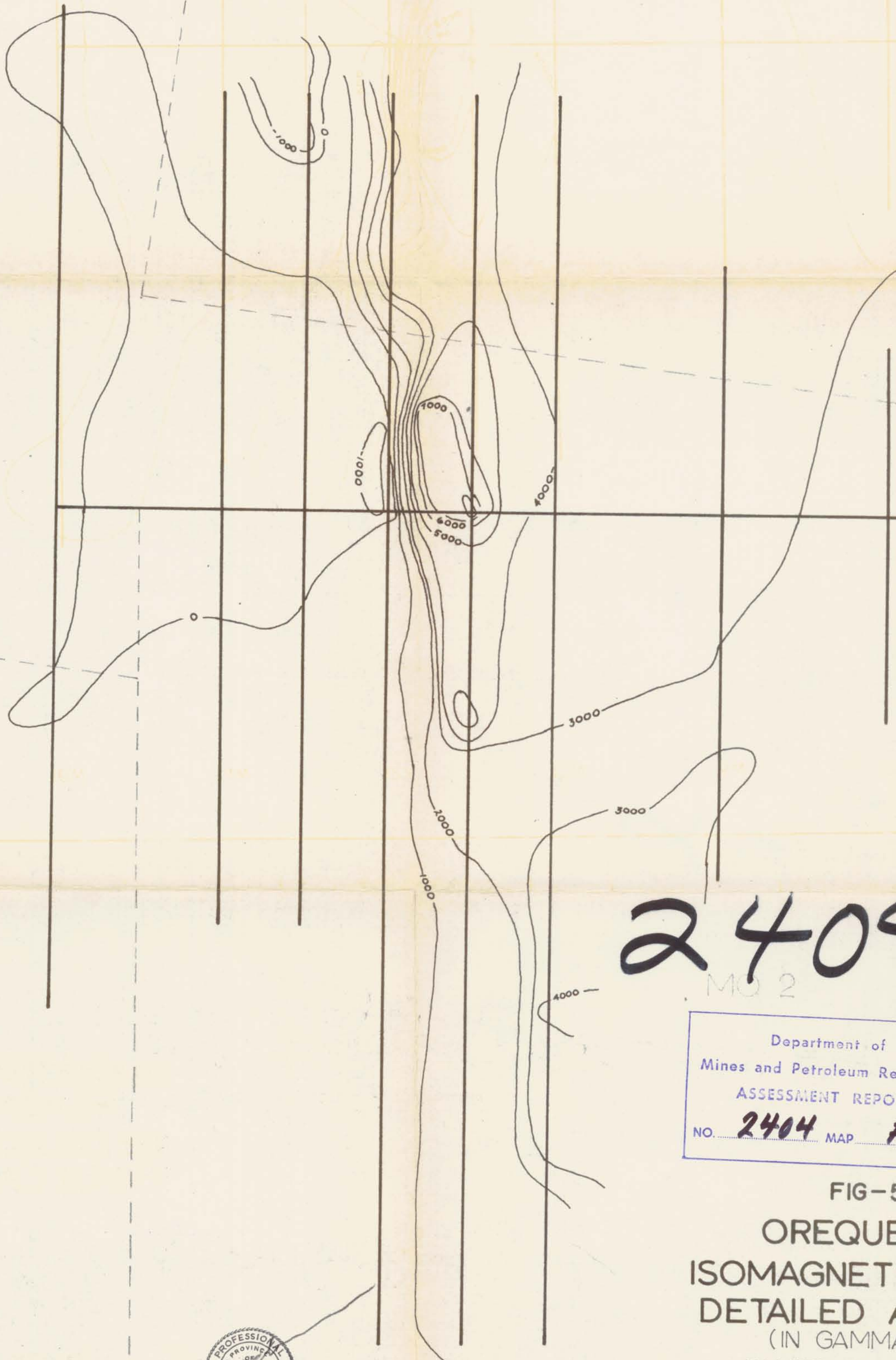
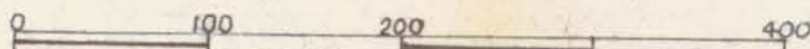
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2404** MAP **#5**

FIG-5

OREQUEST
ISOMAGNETIC PLAN
DETAILED AREA
(IN GAMMAS)

OWEN LAKE

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL
REPORT BY DR COCHRANE P.ENG NOV. 16, 1969
ON THE MO AND CD CLAIMS OMINECA M.D.

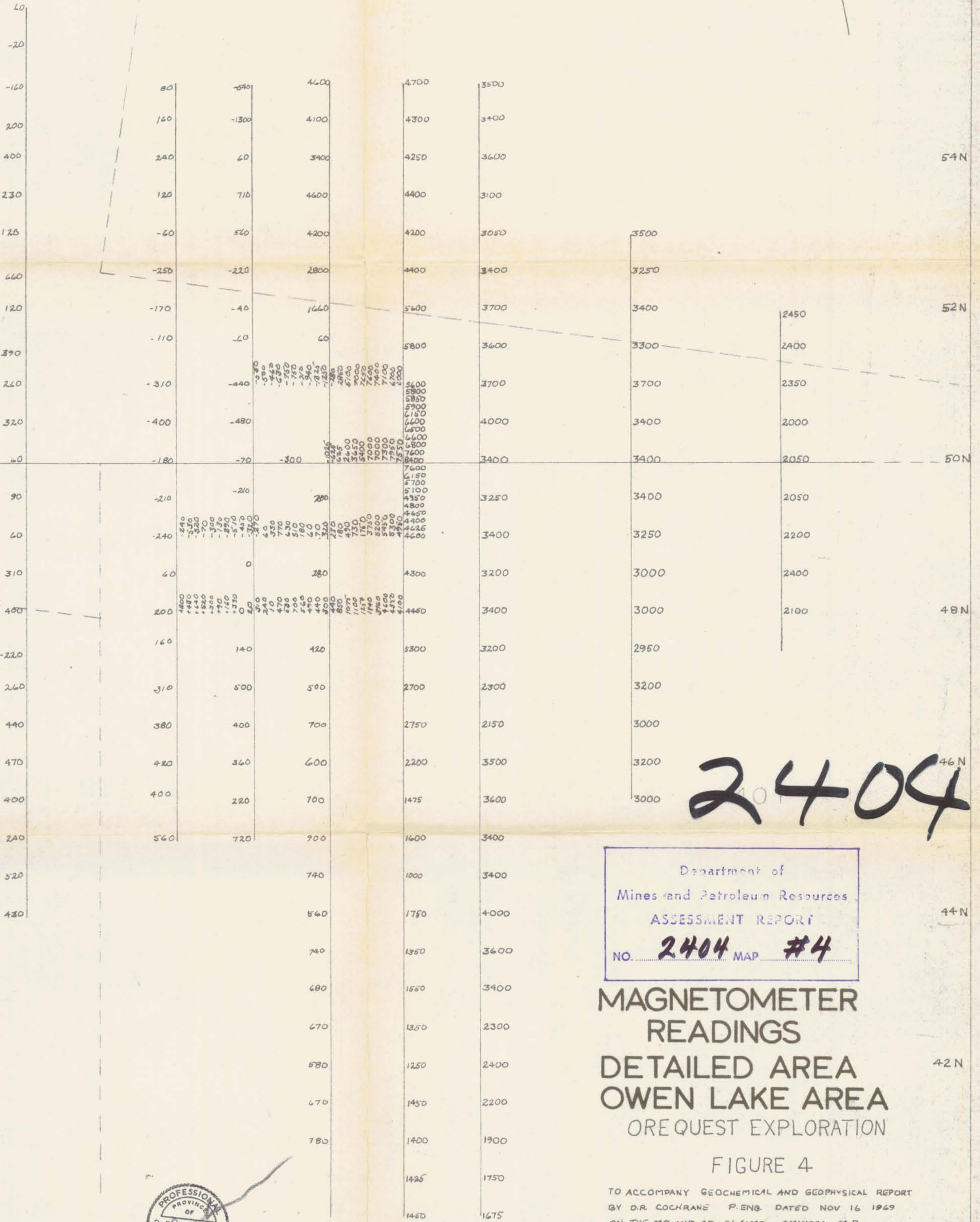


16W 14W 13W 12W 11W 10W 8W 6W

OTHER INTERESTS



CD 2



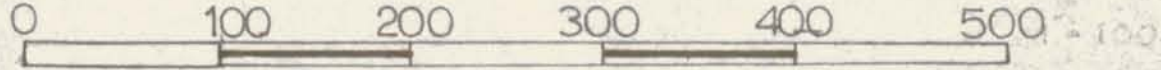
2404

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2404** MAP **#4**

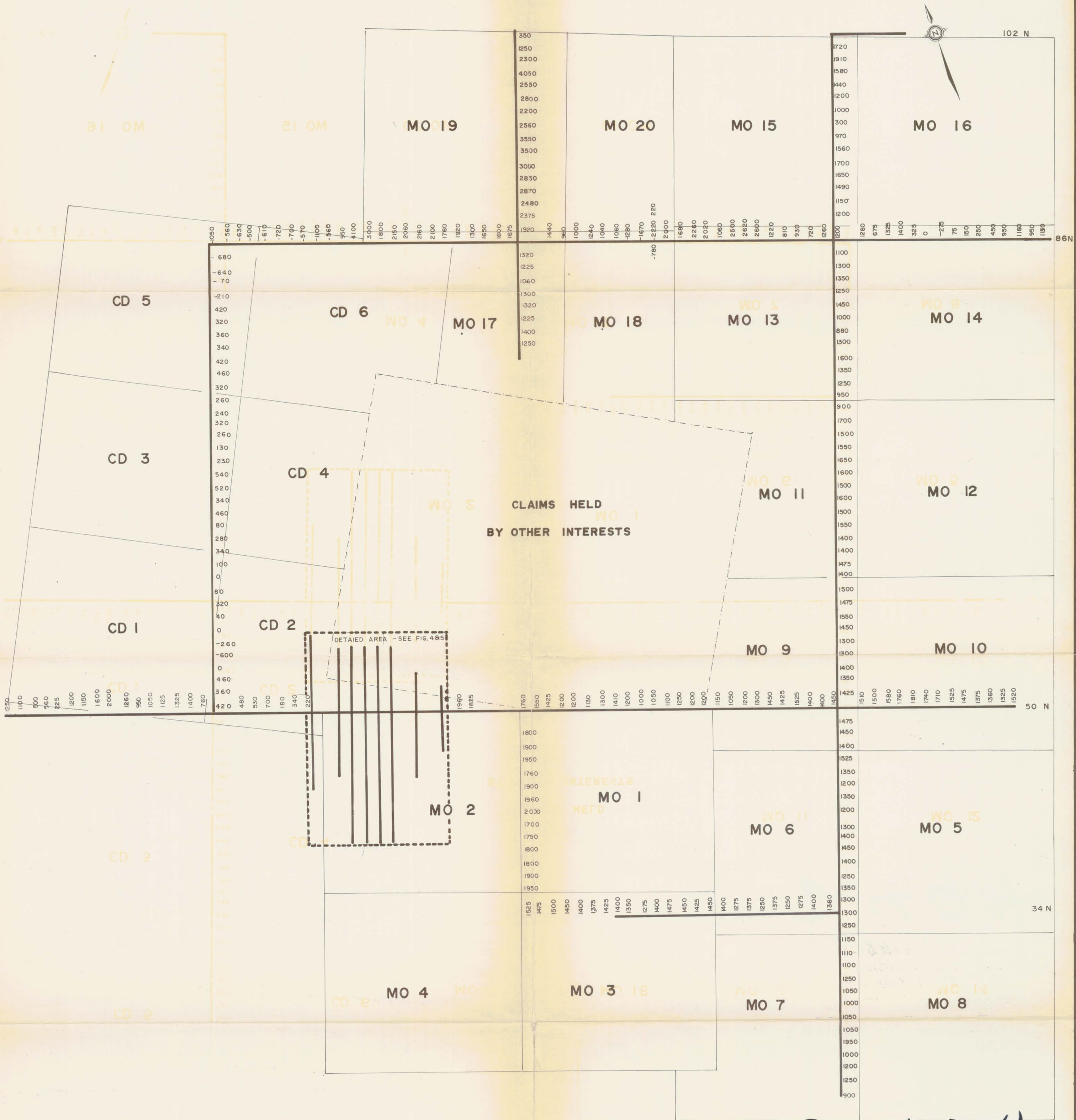
**MAGNETOMETER
READINGS
DETAILED AREA
OWEN LAKE AREA
ORE QUEST EXPLORATION**

FIGURE 4

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
BY D.R. COCHRANE P. ENG. DATED NOV 16 1969
ON THE MD AND CD CLAIMS OMINECA M.D.



1" = 100'



2404
OREQUEST

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 NO. **2404** MAP **#3**

RECONNAISSANCE MAG SURVEY
FIG - 3

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL
 BY D.R. COCHRANE P.ENG. DATED NOV. 16, 1969.
 ON THE MO AND CD CLAIMS, OMINECA M.D.

1" = 400'



40 W 24 W 0+00 24 E 40 E



102 N

86 N

86 N

50 N

50 N



2404

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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2404 MAP #6

FIG-6
OREQUEST
SOIL SAMPLE RESULTS
(P.P.M. Cu.)

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
BY DR. COCHRANE P. ENG. DATED NOV. 16, 1969.
ON THE MO AND CD CLAIMS, OMINECA M.D.

1" = 400'

0 400 800 1600



40 W

24 W

0+00

24 E

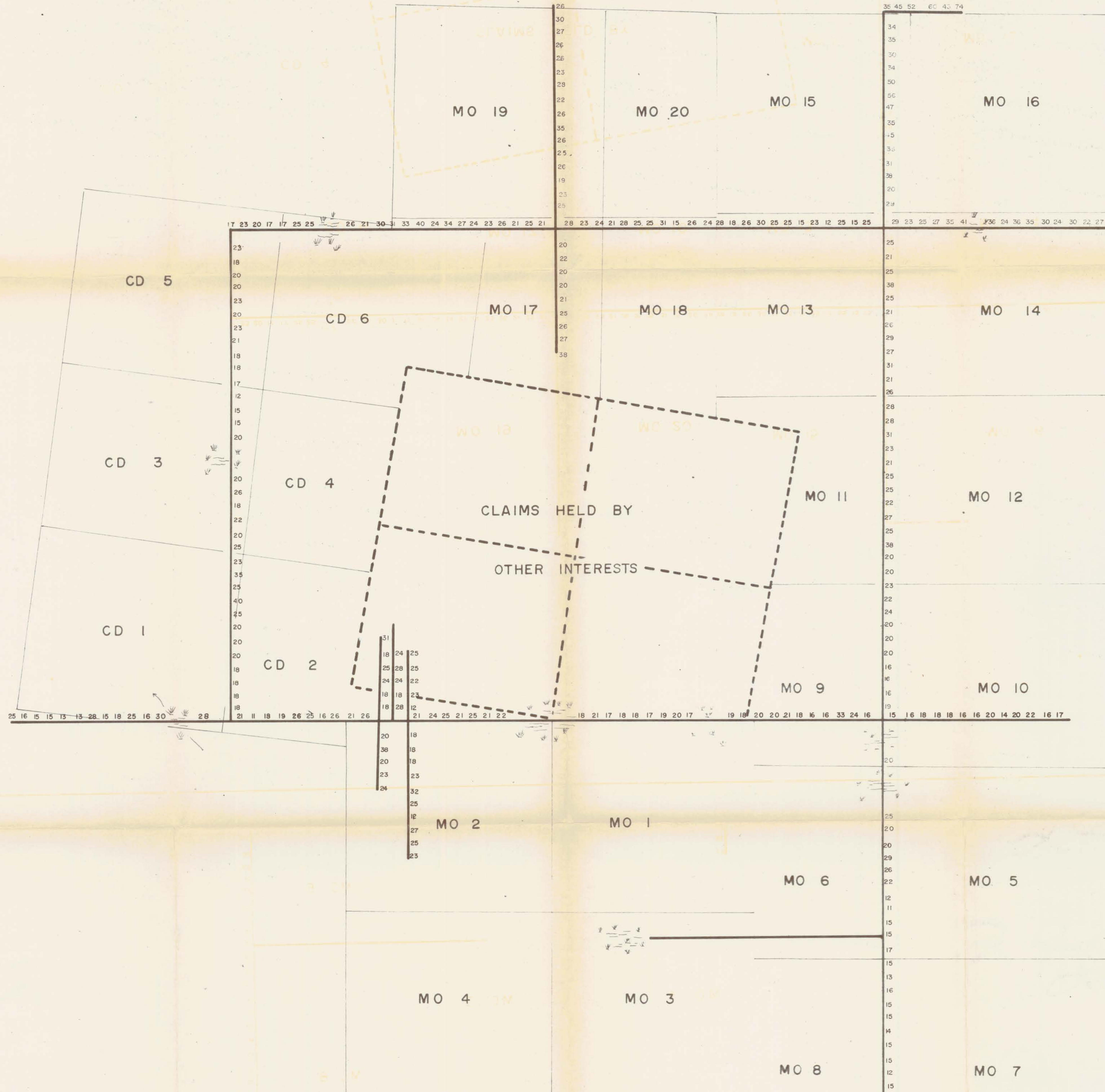
40 E



102 N

86 N

50 N



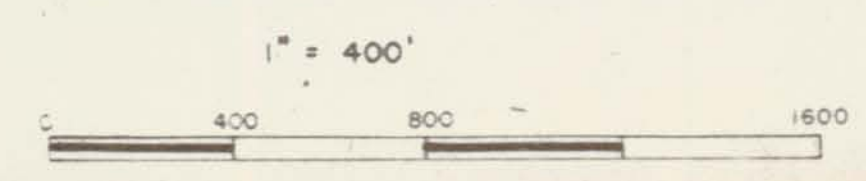
2404

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2404 MAP #7

FIG- 7
OREQUEST
SOIL SAMPLE RESULTS
(P.P.M. Pb.)



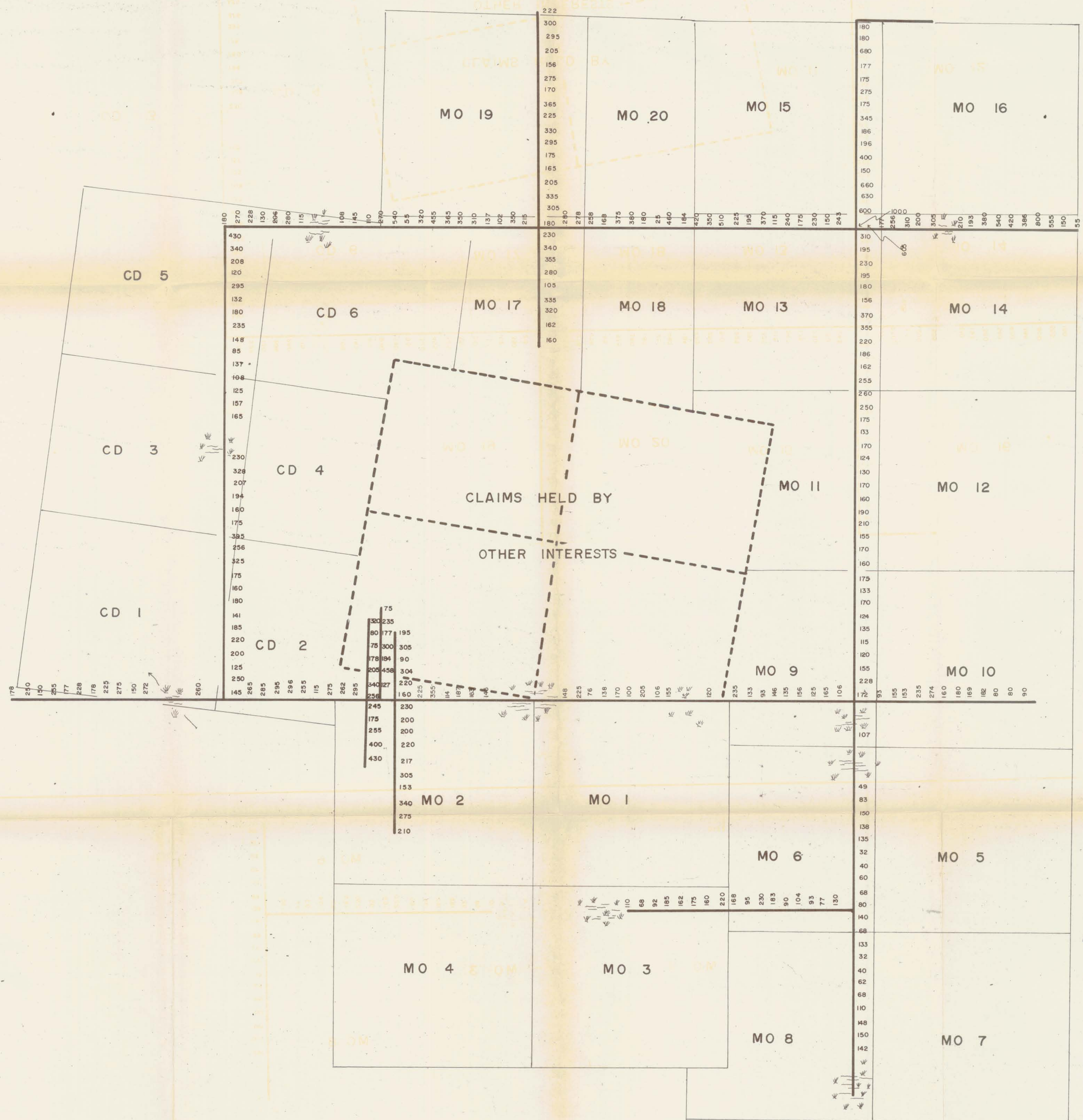
TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
BY DR. COCHRANE P. ENG. DATED NOV. 16, 1969.
ON THE MO AND CD CLAIMS, OMECA M.D.



40 W 24 W 0+00 24 E 40 E



102 N
86 N
50 N



2404

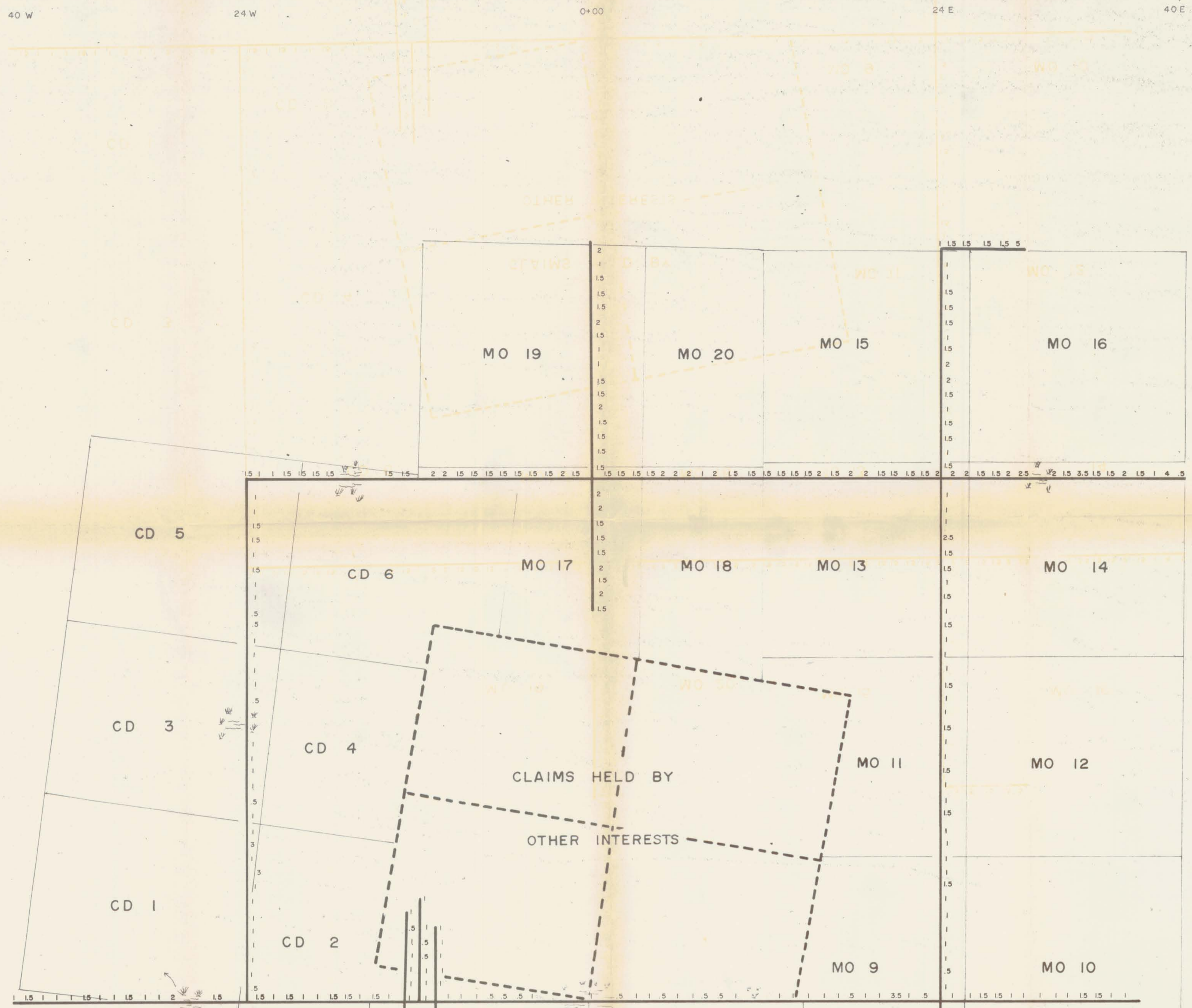
Department of
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ASSESSMENT REPORT
NO. 2404 MAP #8

FIG-8
OREQUEST
SOIL SAMPLE RESULTS
(P.P.M. Zn)



TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
BY DR. COCHRANE P. ENG. DATED NOV. 16, 1969.
ON THE MO AND CD CLAIMS, OMECEA M.D.

1" = 400'
0 400 800 1600



2404

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ASSESSMENT REPORT
NO. 2404 MAP #9

FIG-9
OREQUEST
SOIL SAMPLE RESULTS
(PPM. Ag)

TO ACCOMPANY GEOCHEMICAL AND GEOPHYSICAL REPORT
BY D.R. COCHRANE P. ENG. DATED NOV. 16, 1969.
ON THE MO AND CD CLAIMS, OMINICA M.D.



1" = 400'
0 400 800 1600