

GEOLOGY AND SOIL GEOCHEMISTRY REPORT
ON THE REB 1 - 8 CLAIMS

OMINECA MINING DIVISION

NTS 94 F-1, 94C-16

LATITUDE 57⁰00' N; LONGITUDE 124⁰22'E

OWNER: ESPERANZA EXPLORATIONS LTD.

OPERATOR: ESSO RESOURCES CANADA LIMITED

9848

A.B. Stewart

October 22, 1981

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GEOLOGY AND SOIL GEOCHEMISTRY REPORT
ON THE REB 1 - 8 CLAIMS
OMINECA MINING DIVISION

A INTRODUCTION

1. Location And Access

The Reb claims are located in the northern Rocky Mountains of British Columbia, on the south slope of an 1800 meter high ridge, and drained by various unnamed tributaries of the Ospika River.

The claim block latitude is 57° and the longitude is 124°22'. Access to the property is by fixed wing from Prince George or Mackenzie to the air strip at Ingenika on Williston Lake, then by helicopter 40 km north-east to the Reb fly camp.

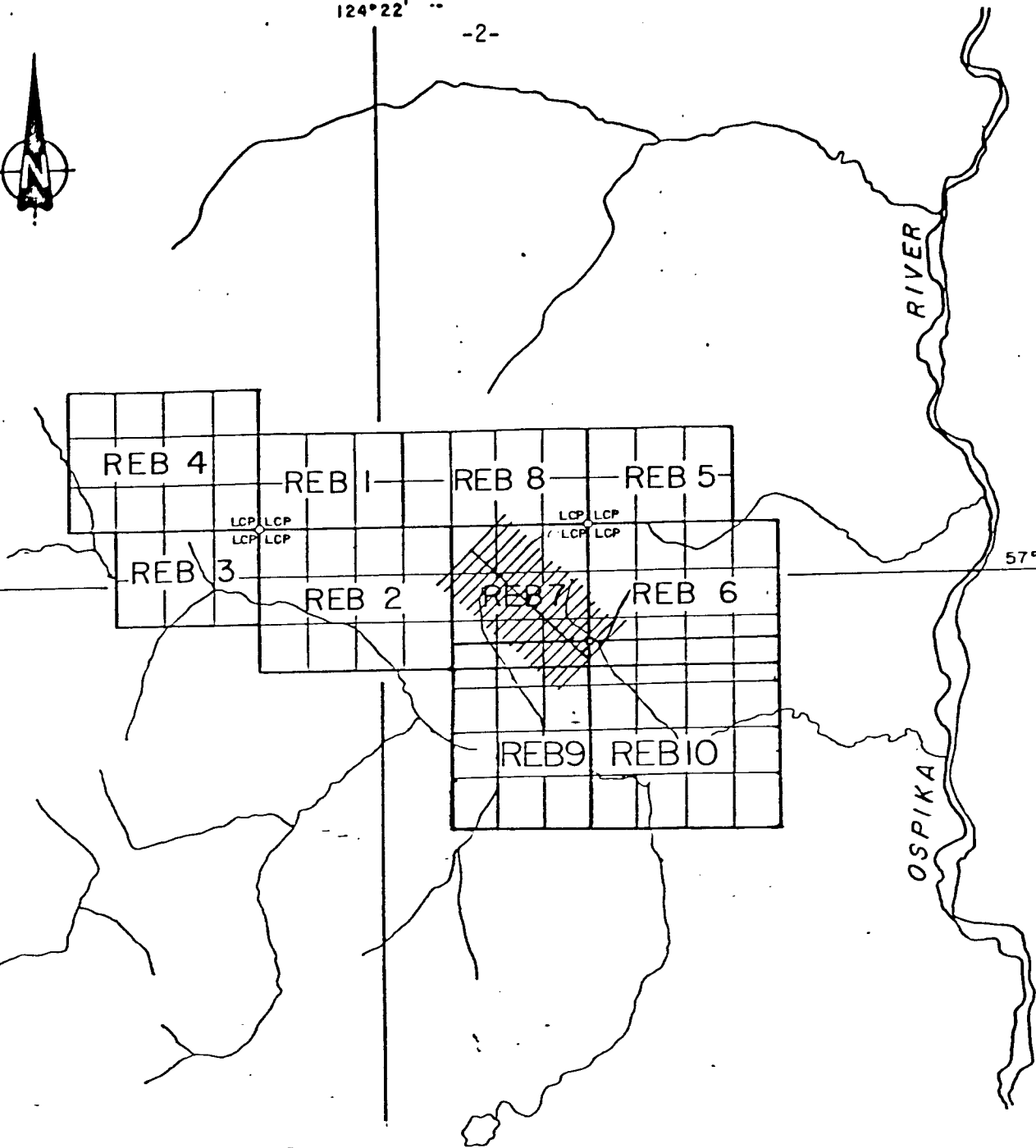
2. Property

<u>Claim Name</u>	<u>No. of Units</u>	<u>Group Name</u>	<u>Expiry Date</u>	<u>Owner</u>
REB 1	6	November	Nov. 16	Esperanza*
REB 2	12	"	" 16	" *
REB 3	6	"	" 16	" *
REB 4	12	"	" 16	" *
REB 5	6	September	Sept.30	" *
REB 6	12	"	" 30	" *
REB 7	9	"	" 30	" *
REB 8	8	"	" 30	" *
REB 9	12	Not grouped	August 31	Esso Resources Canada
REB 10	16	Not grouped	August 31	"

*Under option to Esso Resources Canada Limited.

124°22'

-2-

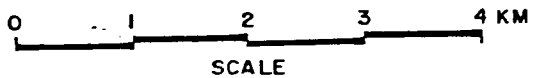


57°00'

OSPIKA RIVER

ESSO MINERALS CANADA

INDEX MAP REB PROSPECT



SCALE

Project No. 2152

Mining Div. Omineca

NTS 94-F-1, C-16

Drawn By: A.S./r.w.r.

Date: Oct. 25, 1981

Mop No.

3. History

The Reb property was discovered by prospectors working for Esperanza Explorations Ltd. during regional reconnaissance in 1979. A gossanous stream was investigated and found to contain a 20 meter thick section of massive pyrite interbedded with black shale exposed in the creek bed. The area was staked and optioned to Esso Resources Canada in 1980. Reconnaissance geology mapping, prospecting and silt sampling were carried out in August 1980.

4. Work Done

A two kilometer base line was cut, and an 18 line km grid established in 1980. A soil sampling program was carried on the grid with a 25 m spacing between samples on lines 100 m apart. The Reb 6 - Reb 8 were also geology mapped on a 1:5000 scale. Reb 1 - Reb 4 were mapped on 1:10,000 scale. A sketch map of geology between Pesika Creek and Akie River was compiled based on one week of reconnaissance mapping in August 1981. Several hand trenches were dug in an attempt to locate the source of various geochemical anomalies, and gossans on the Reb Claims.

B. TECHNICAL DATA AND INTERPRETATION OF RESULTS

1. Geology

A report on the geology of the Reb by A. Stewart dated December 10, 1980 summarizes the economic geology of the prospect. A better understanding of the structure of the property was gained in 1981, and a more detailed stratigraphy was established and mapped out. A detailed description of the stratigraphy follows.

Stratigraphy:

Kechika Group

A section of Cambro-Ordovician Kechika Group has been recognized on the Reb property. The Kechika section is well exposed on the top of the ridge northeast of the claim group. The Kechika group generally faces southwest on the ridge with a steep dip to the bedding. Cleavage dips steeply to the northeast. A minor syncline has been noted in the Kechika group, just east of the fault contact with the Road River Group.

Lithologies mapped in the Kechika Group were all phyllitic, and characteristically contained nodules of dolomite. These nodules are thought to represent boudinaged beds of dolomite. Mudstone, siltstone and shale were noted as the matrix of the nodular rocks. The Kechika section has been

subjected to metamorphism resulting in a phyllitic shine visible on the cleavage surfaces.

Road River Group

An unusual section of Road River Group rocks is locally present on the Reb property. The aggregate thickness of the unit is approximately nine hundred meters, somewhat thicker than other mapped sections of Road River group to the northwest. Typically, the section is approximately six hundred meters thick in the Akie River area and contains thick sandstone and limestone members, and a thin shale unit approximately 100 m - 150 m thick. In contrast the Road River shale is 700 meters thick on the Reb 5 - 8 claims, and no limestone member is present. The shale thins markedly to the northwest.

Two lithologies are present within the shale member of the Road River Group, graphitic shale and chert. The graphitic shale is black, dense and commonly contains graptolites. The chert is dense, thin bedded and occurs just above and below a bedded pyrite occurrence. Quartz veining occurs at several localities in the shale. The veins are irregular, thin and generally conform to the bedding, no sulphides have been found in these veins.

The Road River shale stratigraphically overlies dolomitic sandstone and quartzite. These lithologies are

exposed uphill from the shale along the ridge on the Reb 6 and Reb 7. The sandstone weathers a bright orange brown color with distinctive ribbed weathered surfaces. This ribbed texture on the weathered surface results from numerous quartz and dolomite veinlets. Larger crystalline dolomite-quartz and dolomite-barite veins have also been found in this unit. A minor chalcocite bearing quartz vein was found when a small gossan was trenched in the vicinity of L 1+00 E, 3+00 N. Similar veinlets were also found with malachite staining southeast of L 6+00 E. Minor disseminated pyrite in the unit causes a weak orange color in soils in these areas.

Silurian Siltstone

A blocky siltstone of probable Silurian age unit overlies the Road River group and forms the core of a syncline on the Reb property. The unit is grey-black in color generally though some brown weathering beds were noted. The siltstone unit is somewhat dolomitic. Minor disseminated pyrite was found in this unit.

2. Geochemistry

A 17 kilometer soil sampling program was carried out on the Reb prospect. This soil grid was roughly centered on an anomalous area of Pb geochemistry detected in 1980.

The soils were collected from the B horizon at an average depth of 20 cm.'s. The samples were analyzed at Bondar Clegg Lab. in North Vancouver B.C. They were dried, seived to -80 mesh and dissolved in hot aqua-regia. The analysis was done by the Atomic Absorption method for Pb, Zn, Ag, and Ba.

The sample results were plotted as arithmetic histograms, and a routine statistical analysis was carried out to determine threshold values. This information is shown on the following pages.

Geochemistry Results

Pb

An area of scattered anomalous Pb values occurs at L 2+00 W, L 3+00 W and L 4+00 W from 0+75 N to 1+50 N. This area is partially coincident with a large zone of anomalous Ba. The highest Pb value was 8900 ppm at L 2W 0+75 N. This spot was hand trenched, with the soil profile and bedrock sampled at this point. The bedrock carried no signifigant mineralization. However, the profile sampling confirmed the strong anomaly, and showed decreasing Pb values with depth. This suggests a transported anomaly from somewhere upslope (see Fig. 5). Pb is usually immobile in soil environments, so the source of this

GEOCHEMICAL DATA - STATISTICAL ANALYSIS

<u>VARIABLE</u>	<u>N</u>	<u>MEAN</u>	<u>STANDARD</u> <u>DEVIATION</u>	<u>MINIMUM</u> <u>VALUE</u>	<u>MAXIMUM</u> <u>VALUE</u>	<u>STD_ERROR</u> <u>OF MEAN</u>	<u>SUM</u>	<u>VARIANCE</u>	<u>C.V.</u>
PB	730	46.5192	62.3992	0.0000	8900.0000	2.3095	33959.0000	3893.6656	134.137
ZN	730	122.5055	140.1025	0.0000	6000.0000	5.1854	89429.0000	19628.7222	114.364
AG	730	0.4408	0.6295	0.2000	15.0000	0.0233	321.8000	0.3963	142.812
BA	730	1800.0575	1416.511	312.0000	20000.0000	5.2427	1314426.0000	20065.0447	78.670

<u>VARIABLE</u>	<u>ANOMALOUS</u> <u>THRESHOLD</u>
Pb	108
Zn	262
Ag	1.25
Ba	3216

FREQUENCY BAR CHART

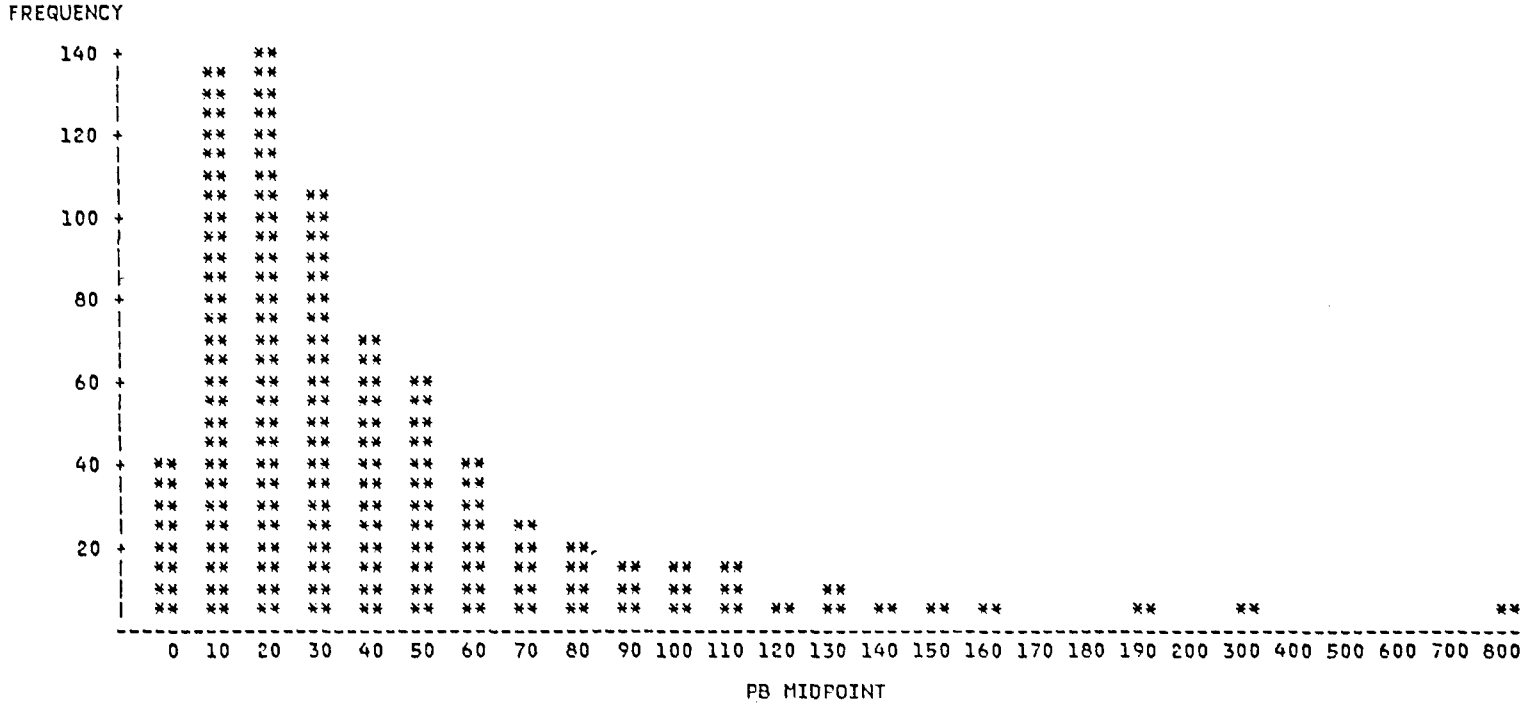


Figure 1

FREQUENCY BAR CHART

FREQUENCY

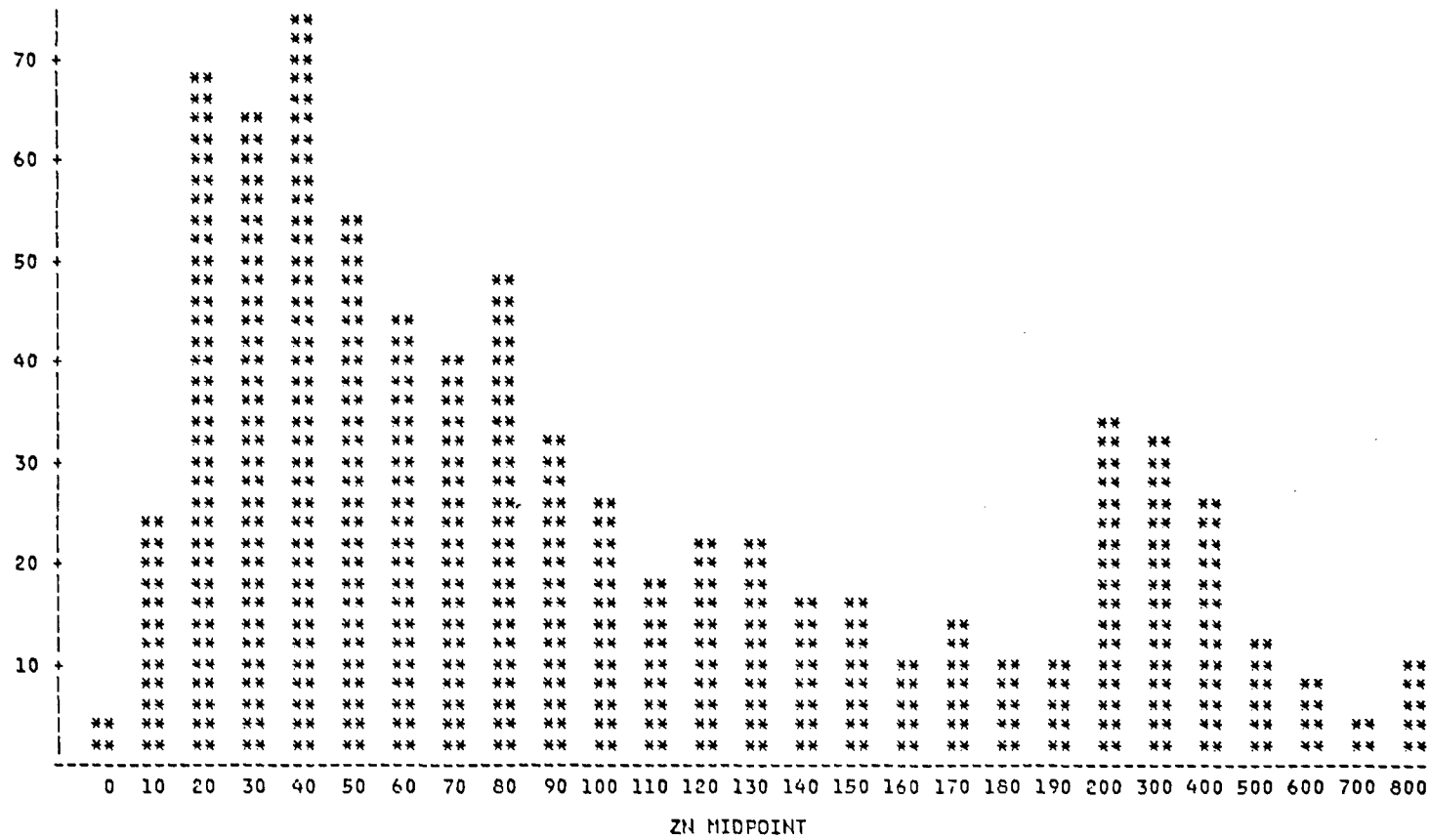


Figure 2

FREQUENCY BAR CHART

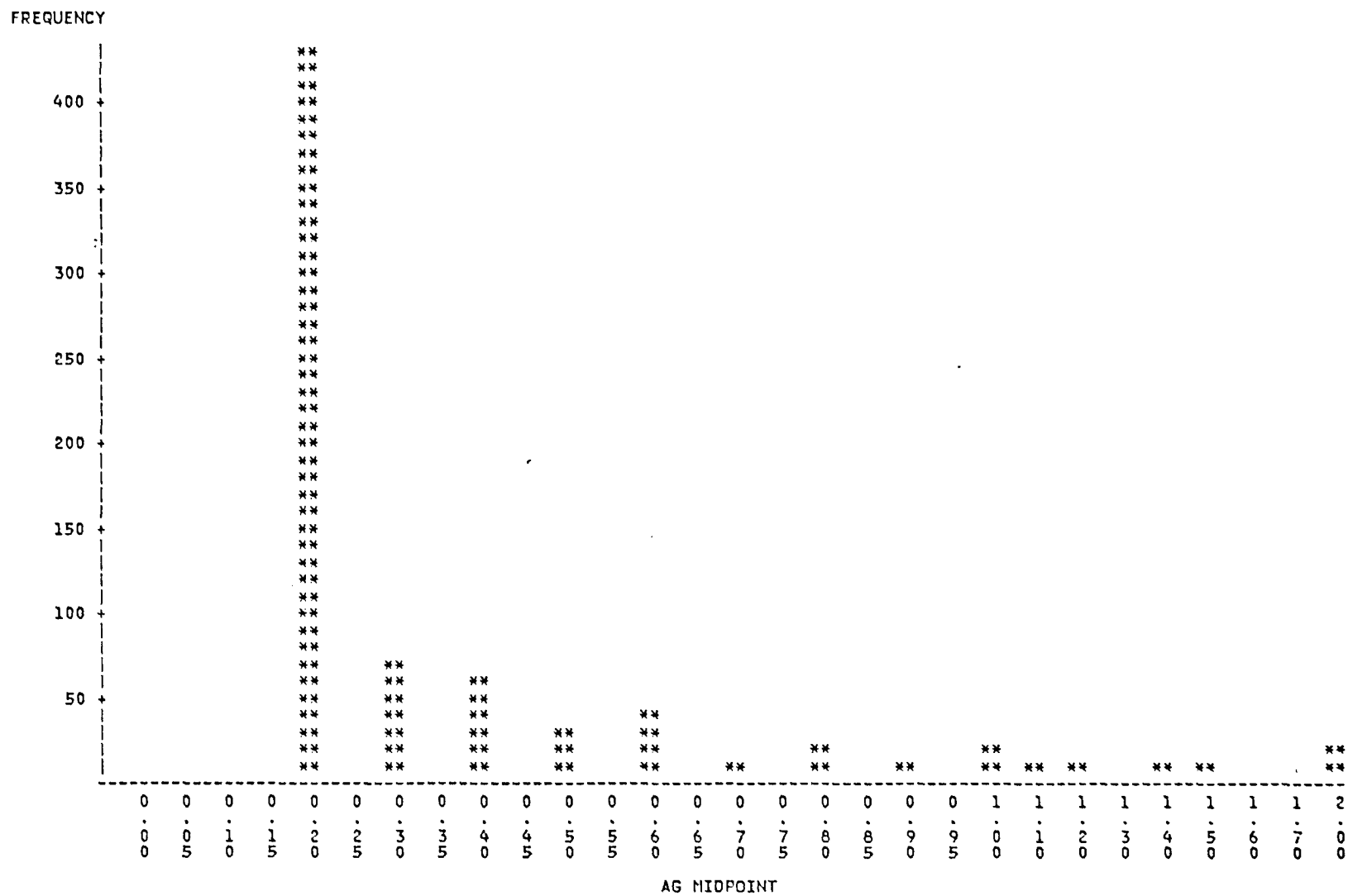


Figure 3

FREQUENCY BAR CHART

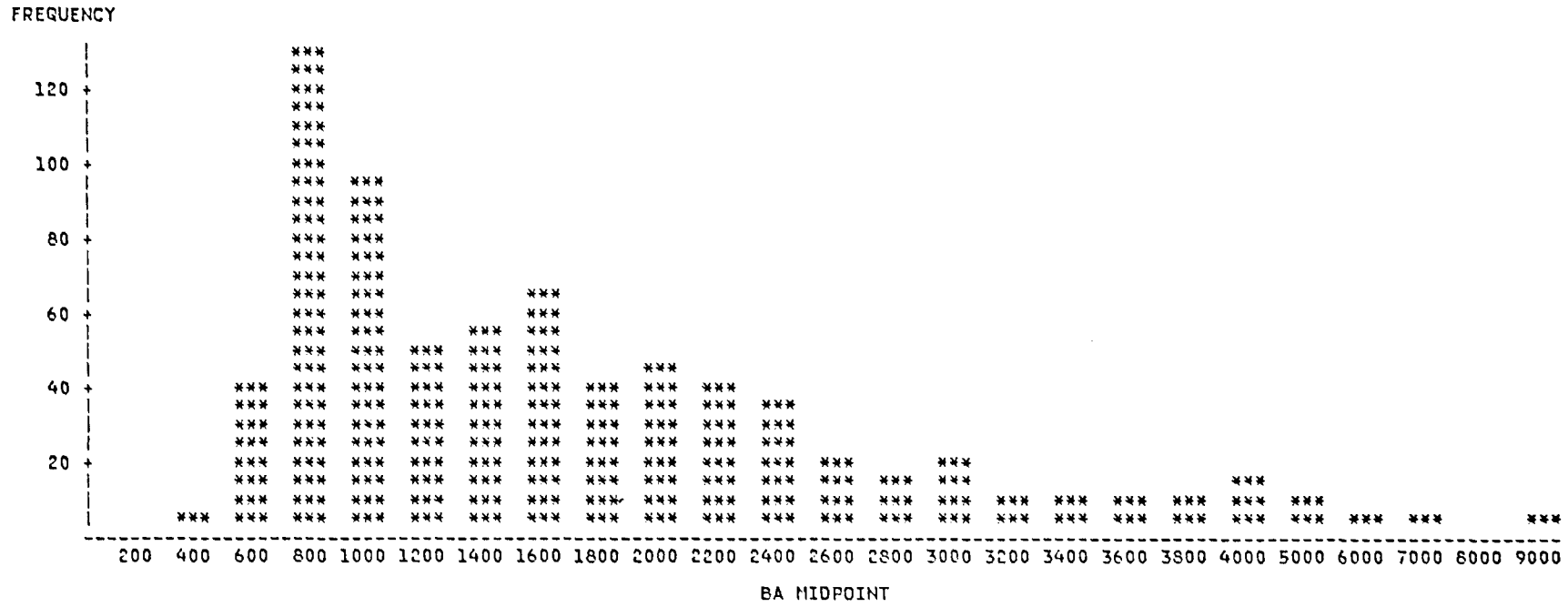


Figure 4

Profile Sampling

Trench #1

L2+00 W

0+75 N

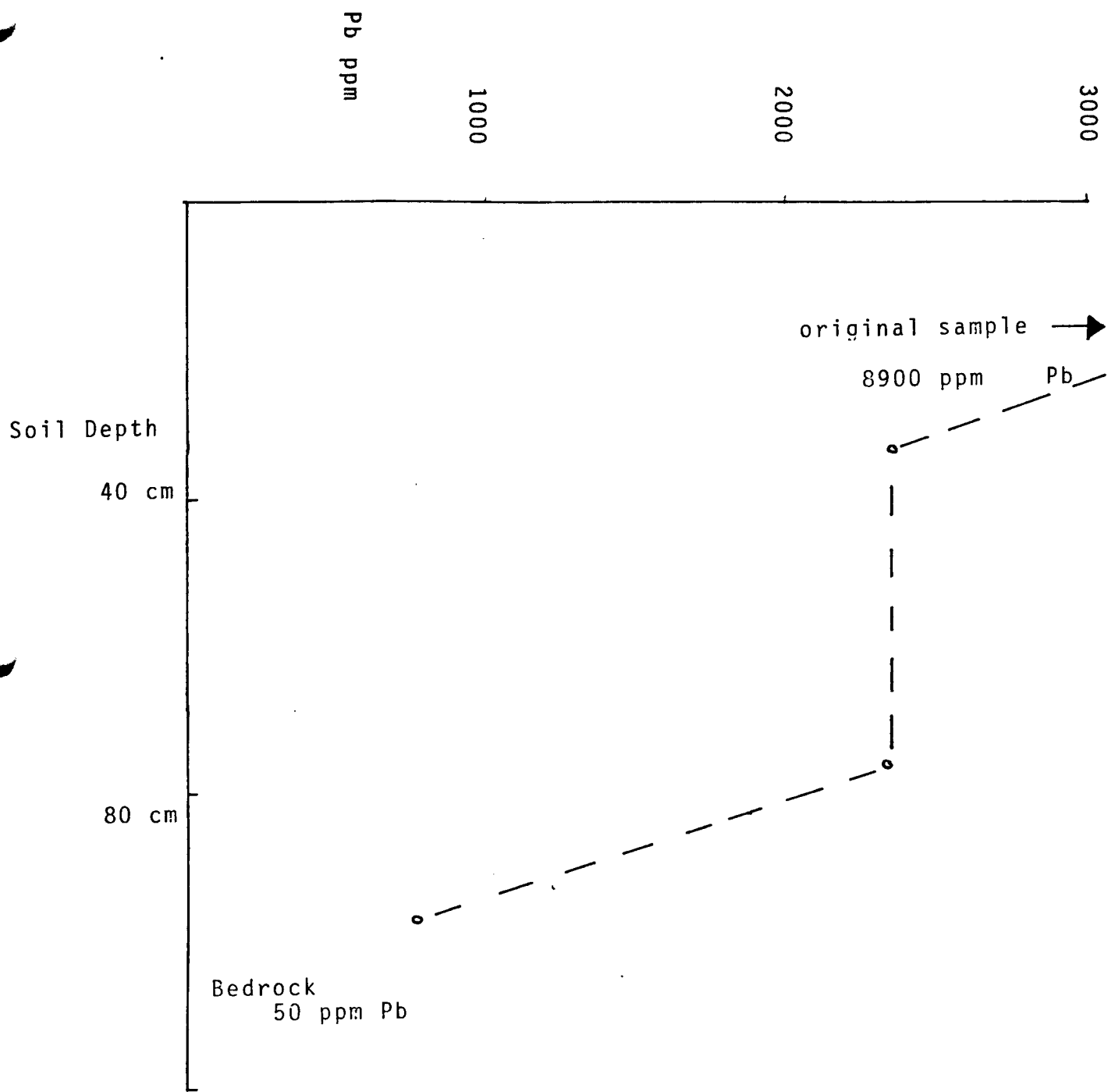


Figure 5

anomaly is likely to be with 25 or 50 meters of this trench.

A second area was trenched at L 3+00 W, 3+50 N. A single soil sample had a Pb value of 1220 ppm here. The profile soil sampling again indicated a transported anomaly, probably upslope from this station (see Fig. 6). The bedrock in the trench was intensely veined with dolomite and quartz veinlets. The lithology was a dense dolomitic sandstone. No sulfides were noted in the abundant float in the area. One sample of rusty barite was found at : 3+00, W 4+00 N and assayed 0.05 % Pb. Therefore the barite veins discussed in the geology section may contain at least traces of Pb mineralization.

Several Pb anomalies remain unchecked, and should be trenched next season including: 1) L 8+00 W, 0+25 S, 2) L 8+00 W, 2+50 N, 3) L 6+00 W, 0+00, 4) L 3+00 W, 0+00.

Many of the anomalous Pb values form a broad, discontinuous zone near the grid base line with a trend which parallels the strike of the underlying shale unit. The bedded pyrite would also trend through this area if it extends to the east.

Other Pb anomalies not related to the base line zone, are from the area of Road River dolomitic sandstone/Kechika phyllite thrust contact on the north side of the grid. This zone is known to contain vein barite (minor Pb), vein chalcocite, and minor disseminated chalcopyrite. These anomalies should be checked out, but with a lower priority.

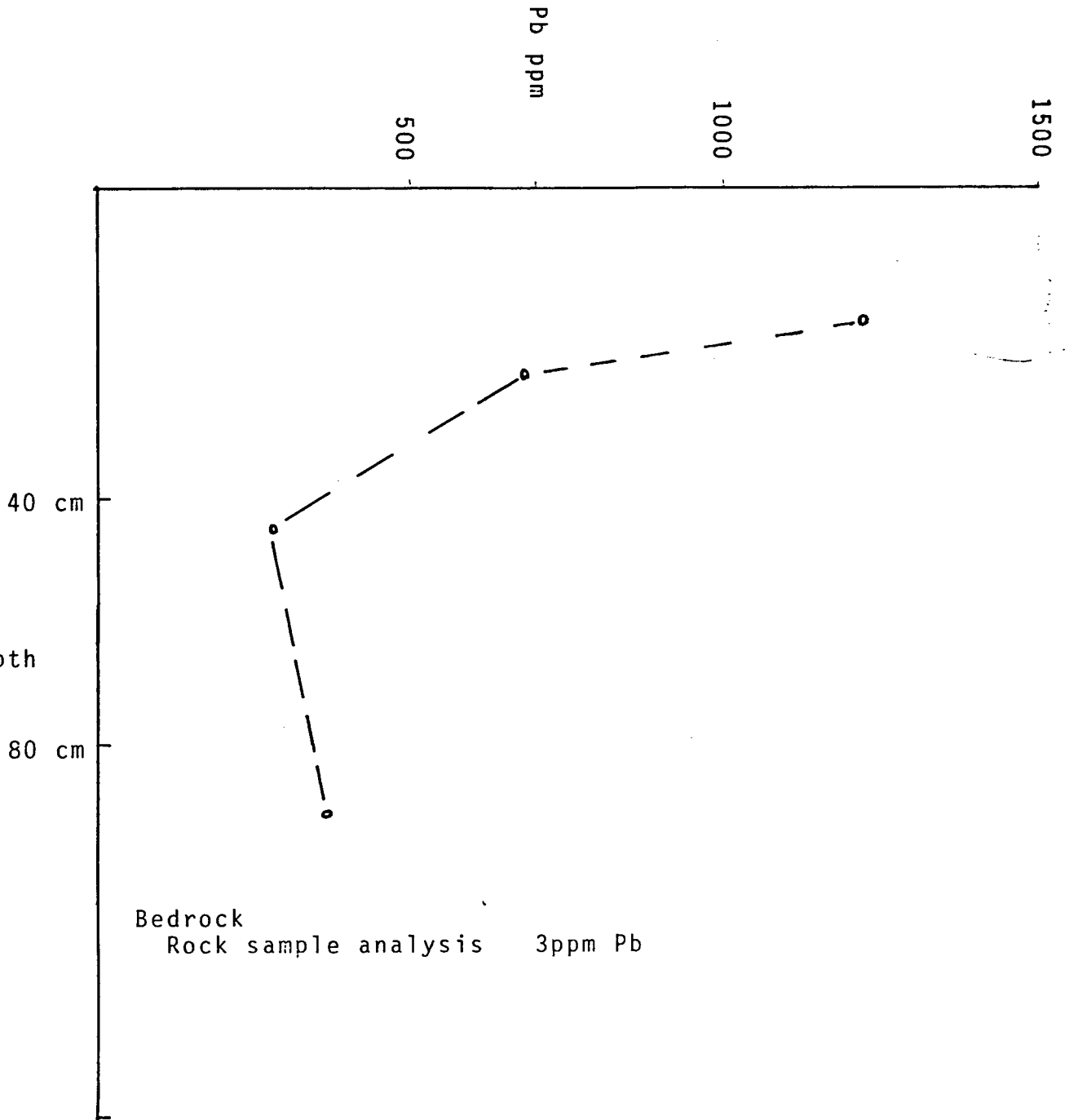


Figure 6

Zn

A large zinc anomaly exists at the south west end of the grid. Most of this zone is on a steep creek valley slope with wet, poorly developed C horizon soils. Minor travertine deposits occur on this slope. The anomaly is probably a "false" one related to Zn concentration by surficial processes.

Similarly most of the other Zn anomalous values come from the lower parts of the creek valleys. The only values recommended for follow up are the anomalous samples near the base line on lines 1+00 E, at 0+25 S. 3+00 E at BL and 4+00 E at BL.

An area of anomalous zinc values was investigated and staked on the south side of Reb creek, (see maps 8, 9, and 10). The Reb 9 and 10 claims cover this area. Two reconnaissance soil lines were carried out on either side of a small travertine-limonite zone with high Zn values found in 1980. The soil lines were placed to see if Zn values carried on outside the travertine. The results showed extremely high Zn values; particularly on L50E which is lower on the hill than the travertine. This entire area should be followed up, though it should be given a low priority since no lead anomaly was found in the soil results.

Ag

Silver anomalies correlate well with the Pb anomalous values. In many cases the silver anomalies occur just upslope from the lead anomalies, possibly indicating less transportation

of the silver. These silver values upslope from Pb values should be trenched.

Ba

Three large zones of Ba anomalies were located on the REB grid. The two zones on the north side of the grid are likely related to vein Ba mineralization in the dolomitic sandstone unit. The third area, which occurs between the base line and 2+00 N on lines 7+00 W, 6+00 W, and 5+00 W remains unexplained and should be followed up.

3. Conclusions and Recommendations

Three significant zones of Pb soil anomalies have been identified in an unusually thick section of Road River shale. A two stage program of followup is recommended. The first stage should be an early season hand trenching and soil profiling program to follow up on the three main Pb anomalies near the base line, and lower priority Pb, Zn, and Ba anomalies as time permits

A second stage program of diamond drilling is recommended, with a minimum of 2 holes, one at L 5+50 W, 0+40 N, and one at L 2+00 W, 1+40 N. Further drilling may be required dependent on the results of stage one. A Hydra-Wink or BBS 1 drill should be used for this program. A camp would be necessary with the most suitable location being the Ospika River, south of the junction with "Reb" creek.



A.B. Stewart

APPENDIX

Statement of Costs

Geochemical Survey

Geochemical Analysis	\$5,700.00
Labor: August 1 to August 9, 1981 24 man days X \$62.50/day	1,500.00
Accommodation: August 1 - August 9, 1981 24 man days X \$50.00/day	1,200.00
Transportation Helicopter - 23 hrs @ \$380.00/hour	8,740.00
Fuel 575 gallons @ \$4.80	2,760.00
Report writing and Preparation	<u>141.00</u>
Subtotal	20,041.00

Geology Survey

Labor: August 10 - 26, 1981 10 man days @ \$165.00/day	1,650.00
30 man days @ \$62.50/day	1,875.00
Accommodation: August 10 - August 26, 1981 40 man days @ \$50.00/day	2,000.00
Transportation Helicopter 17 hrs @ \$380.00/hr	6,460.00
Fuel 425 gallons @ \$4.80 gal.	2,040.00
Report writing and preparation	<u>387.00</u>
Subtotal	<u>14,412.00</u>
Total	\$34,453.00

Alfred Stewart


STATEMENT OF QUALIFICATIONS

I, Alfred Stewart, of North Vancouver, B.C., hereby certify the following qualifications:

a) I obtained a B.Sc. Honours degree in geology from the University of New Brunswick in 1976.

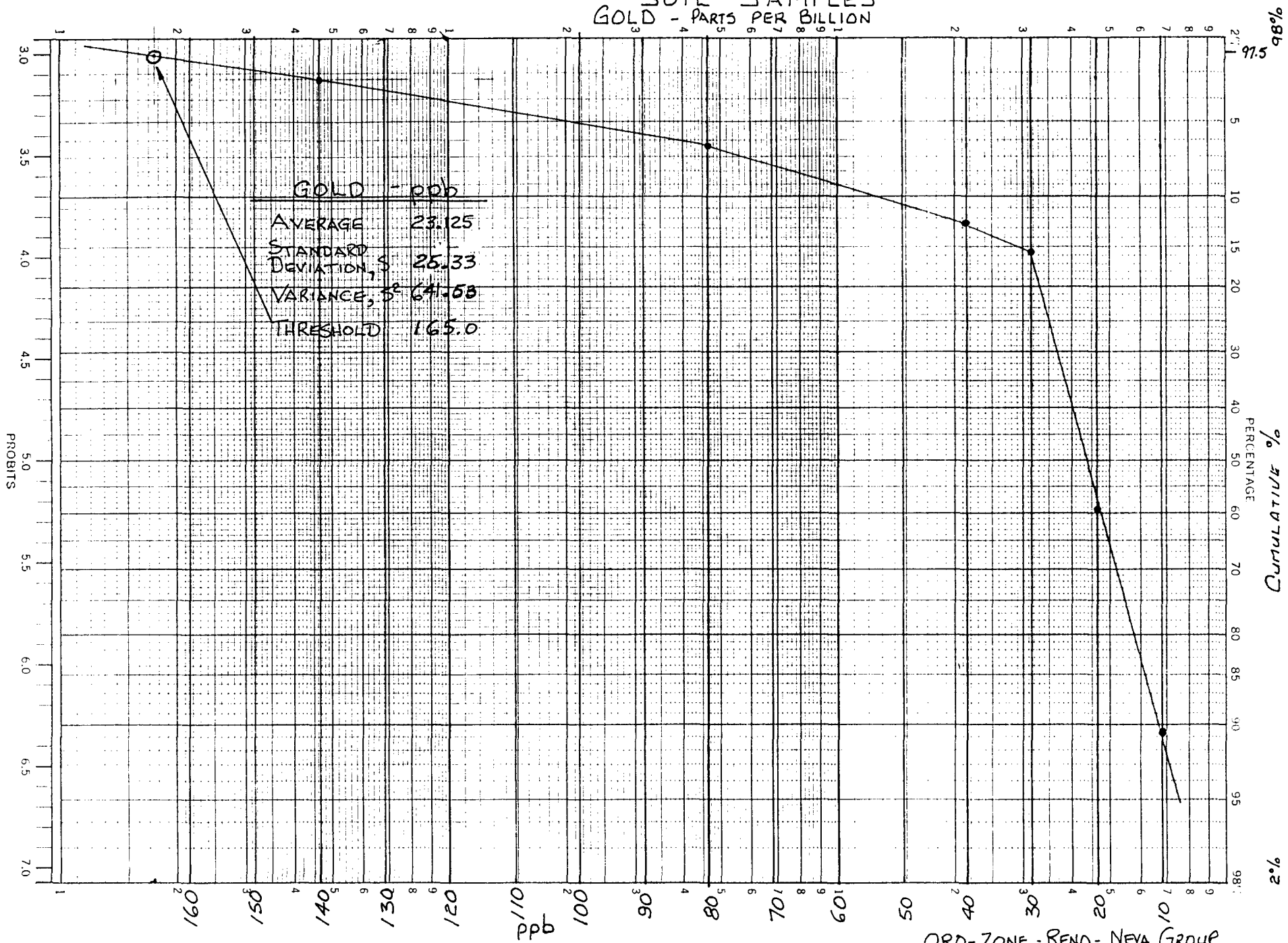
b) I have been practising my profession in Canada for four years.

c) My experience includes the use of geophysical and geochemical exploration techniques in addition to geological experience.



Alfred Stewart
Geologist
Esso Resources Canada Limited

SOIL SAMPLES
GOLD - PARTS PER BILLION

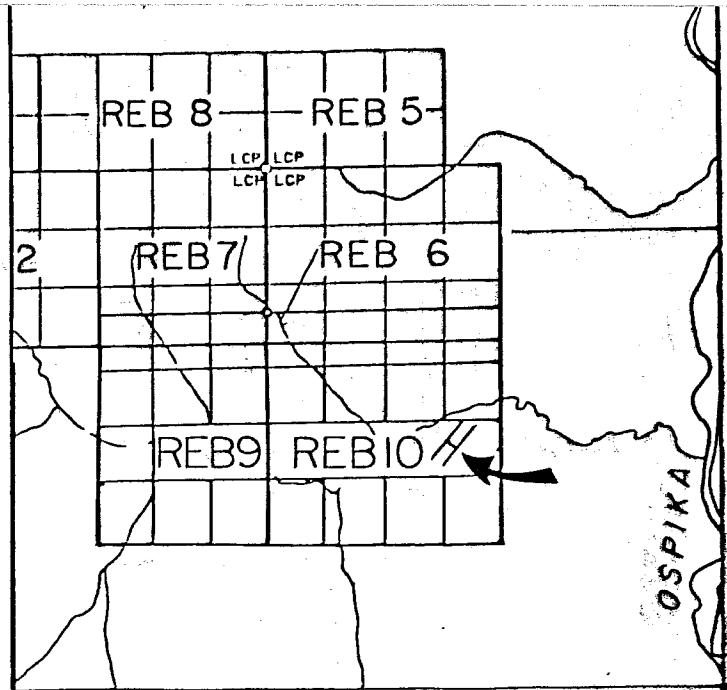


ORD-ZONE-REND-NEVA Group
FREQUENCY CURVE

FIGURE: 5

DRAWN BY: AFB

DATE: SEPT. 22, 1981



1+50 N

0+00

1+50 S

L50E

L51E

9848

0 50 100 150 m

ESSO MINERALS CANADA
ZINC IN SOILS
REB PROSPECT

Project No. 2152

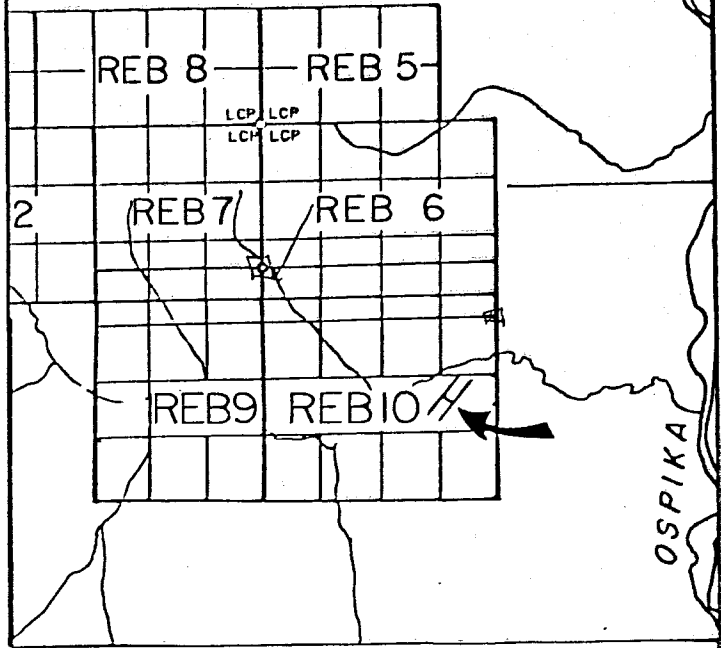
Mining Div. Omineca

NTS 94-F-1, C-16

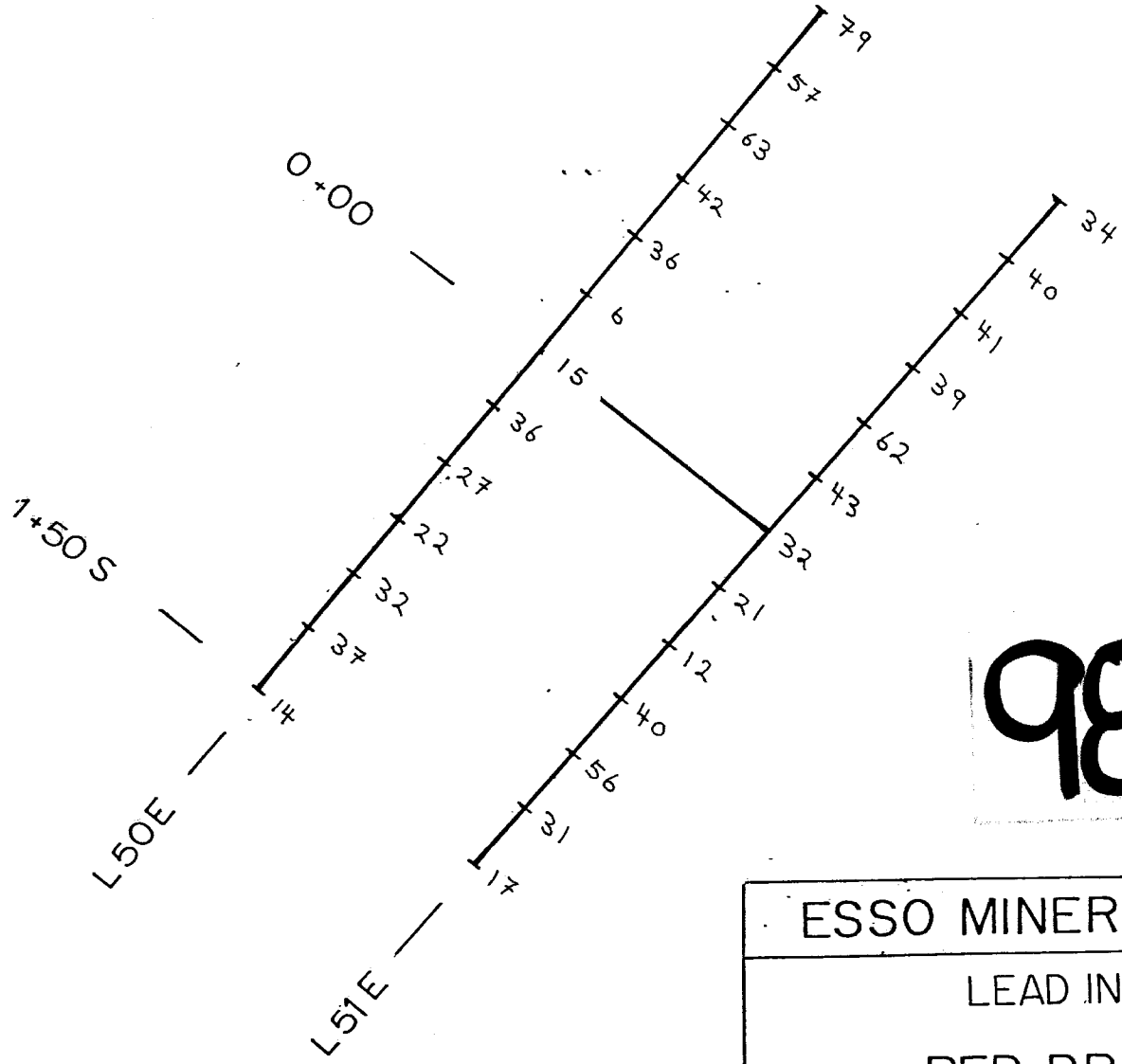
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Date: Oct. 25, 1981

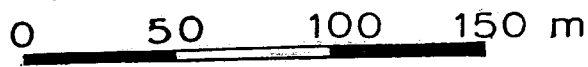
Map No. 9



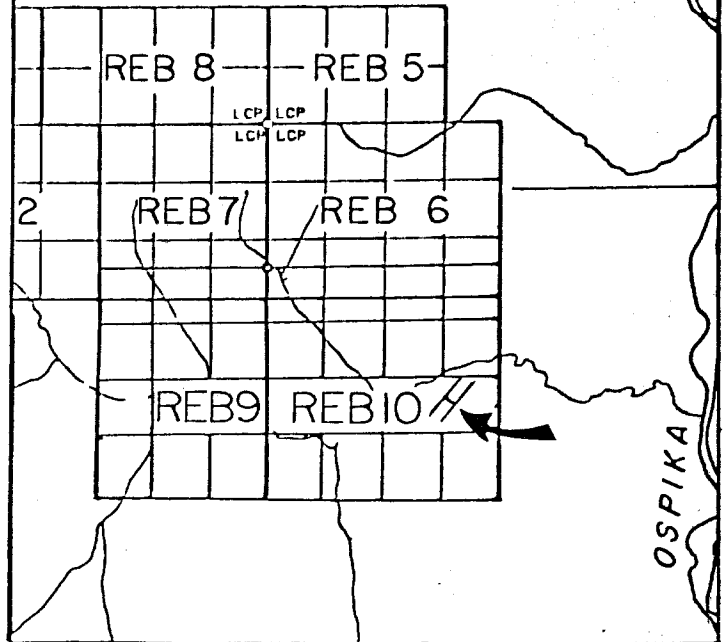
1+50 N —



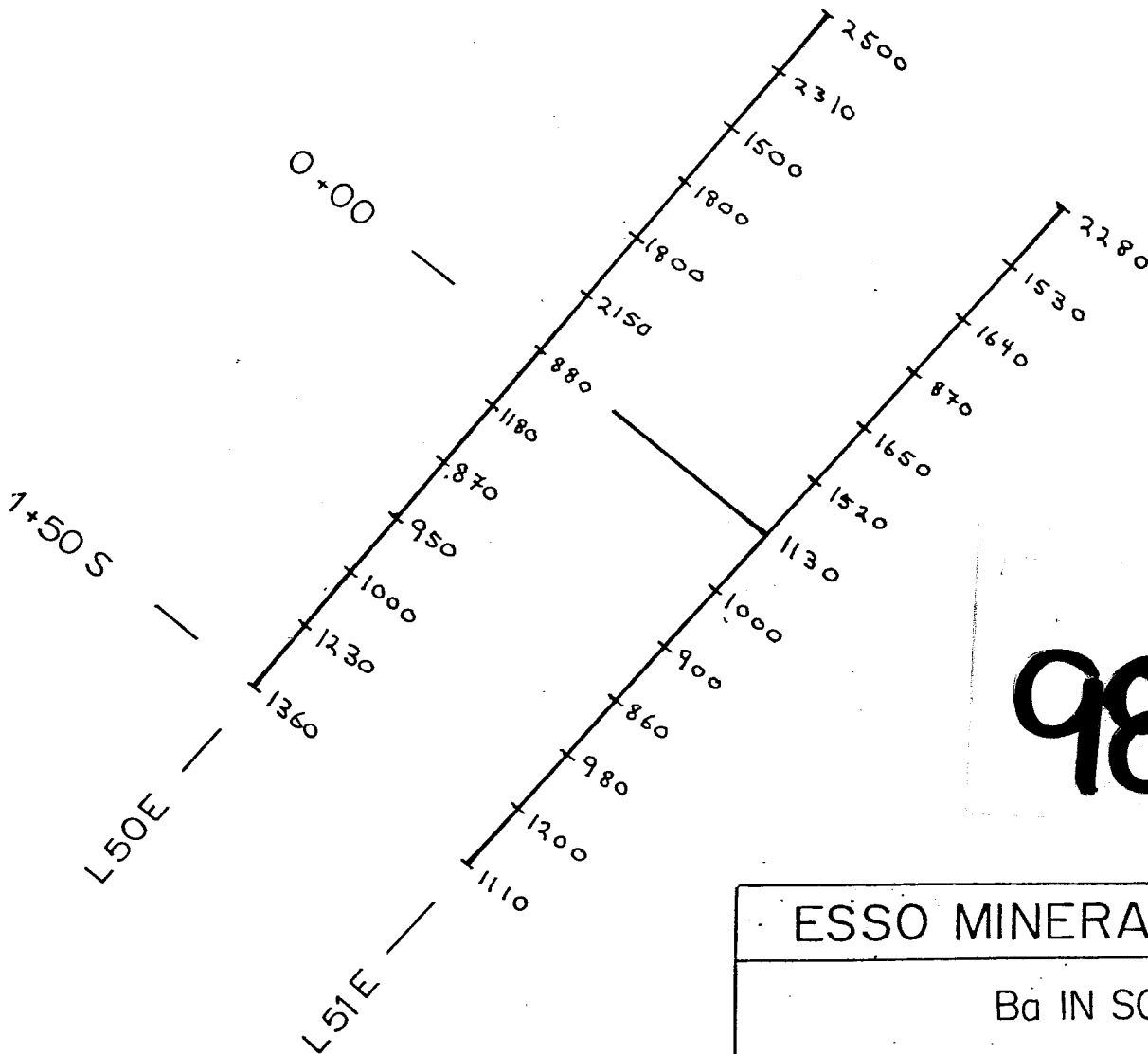
REPORT
9848



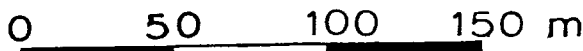
ESSO MINERALS CANADA	
LEAD IN SOILS	
REB PROSPECT	
Project No. 2152	Mining Div. Omineca
NTS 94-F-1, C-16	Drawn By: A.S./r.w.r.
Date: Oct. 25, 1981	Map No. 8



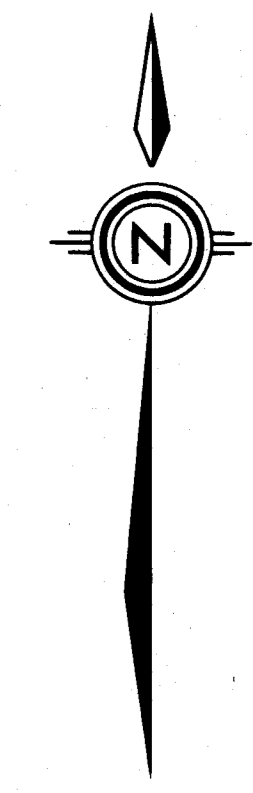
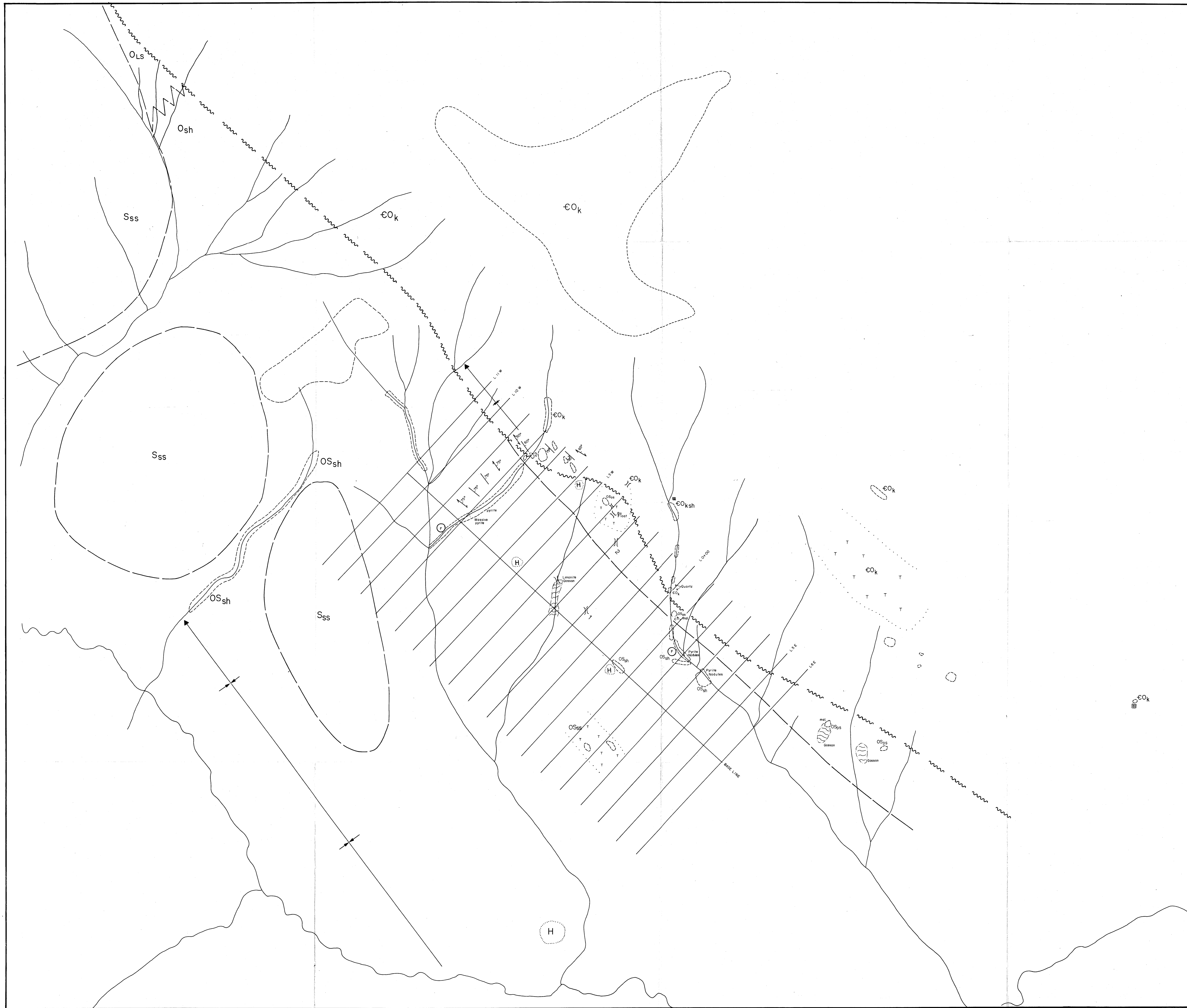
1+50 N



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ESSO MINERALS CANADA	
Ba IN SOILS	
REB PROSPECT	
Project No. 2152	Mining Div. Omineca
NTS 94-F-1, C-16	Drawn By: A.S./r.w.r.
Date: Oct. 25, 1981	Map No. 10



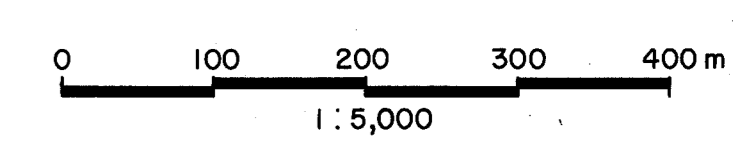
LEGEND

- Sss SILURIAN SILTSTONE - brown siltstone & shale
- OS ROAD RIVER GROUP
- OSsh Black graphitic & graptolitic shale
- OSss Grey siltstone
- OSps Dolomitic sandstone & quartzite
- OS Massive limestone
- KO KECHIKA GROUP - beige & grey nodular phyllitic mudstone, nodular shale and siltstone

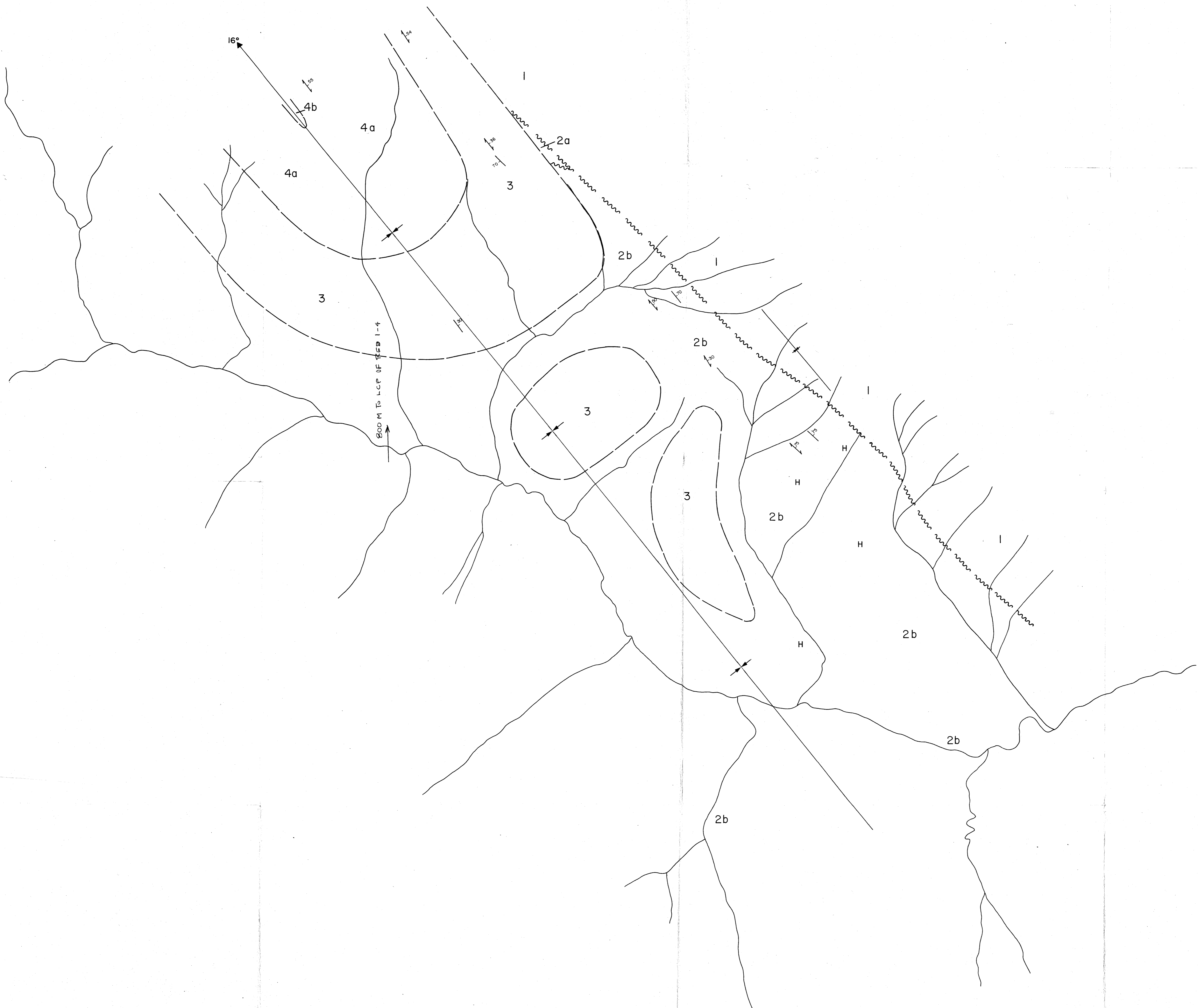
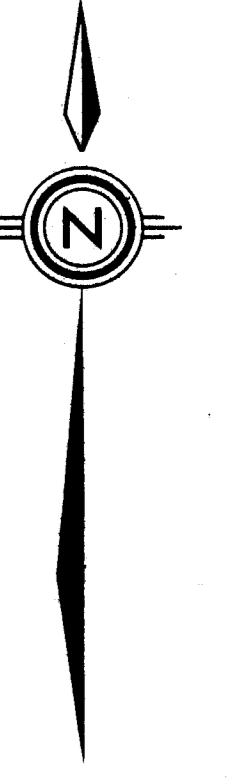
- Outcrop
- Cleavage strike & dip
- Bedding " " "
- Syncline
- Syncline, overturned
- Geological contact
- Fault
- Fossil locality
- Talus
- Helicopter pad
- Trench

- ch Chalcocite
- mal Malachite

9848

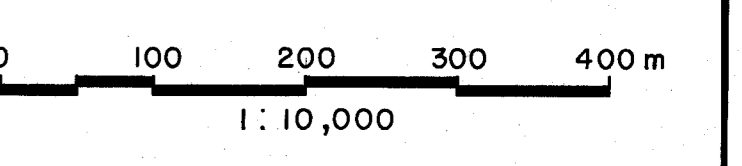


ESSO MINERALS CANADA	
DETAILED PROPERTY GEOLOGY REB PROSPECT	
Project No. 2152	Mining Division Omineca
NTS 94-F-1, C-16	Drawn By: A.S./r.wr.
Date: OCT. 25, 1981	Map No. 1



- LEGEND:**
- 4b DEVONIAN SHALE: blue grey to rusty brown weathering shale.
 - 4a DEVONIAN LIMESTONE: light grey blocky weathering medium to thick bedded limestone; light grey weathering siltstone.
 - 3 SILURIAN SILTSTONE: brown siltstone & silty shale.
 - 2b ROAD RIVER GROUP: black graphitic & graptolitic shale; grey siltstone.
 - 2a ROAD RIVER GROUP: massive limestone.
 - 1 CAMBRIAN, ORDOVICIAN KECHIKA GROUP: beige & grey nodular phyllitic mudstone, nodular shale & siltstone.
- Cleavage strike & dip: Cleavage strike & dip
- Bedding: Bedding " "
- Syncline: Syncline
- Over turned syncline, showing direction & plunge of fold axis: Over turned syncline, showing direction & plunge of fold axis.
- Fault: Fault
- Geological contact, assumed: Geological contact, assumed
- H Helicopter pad

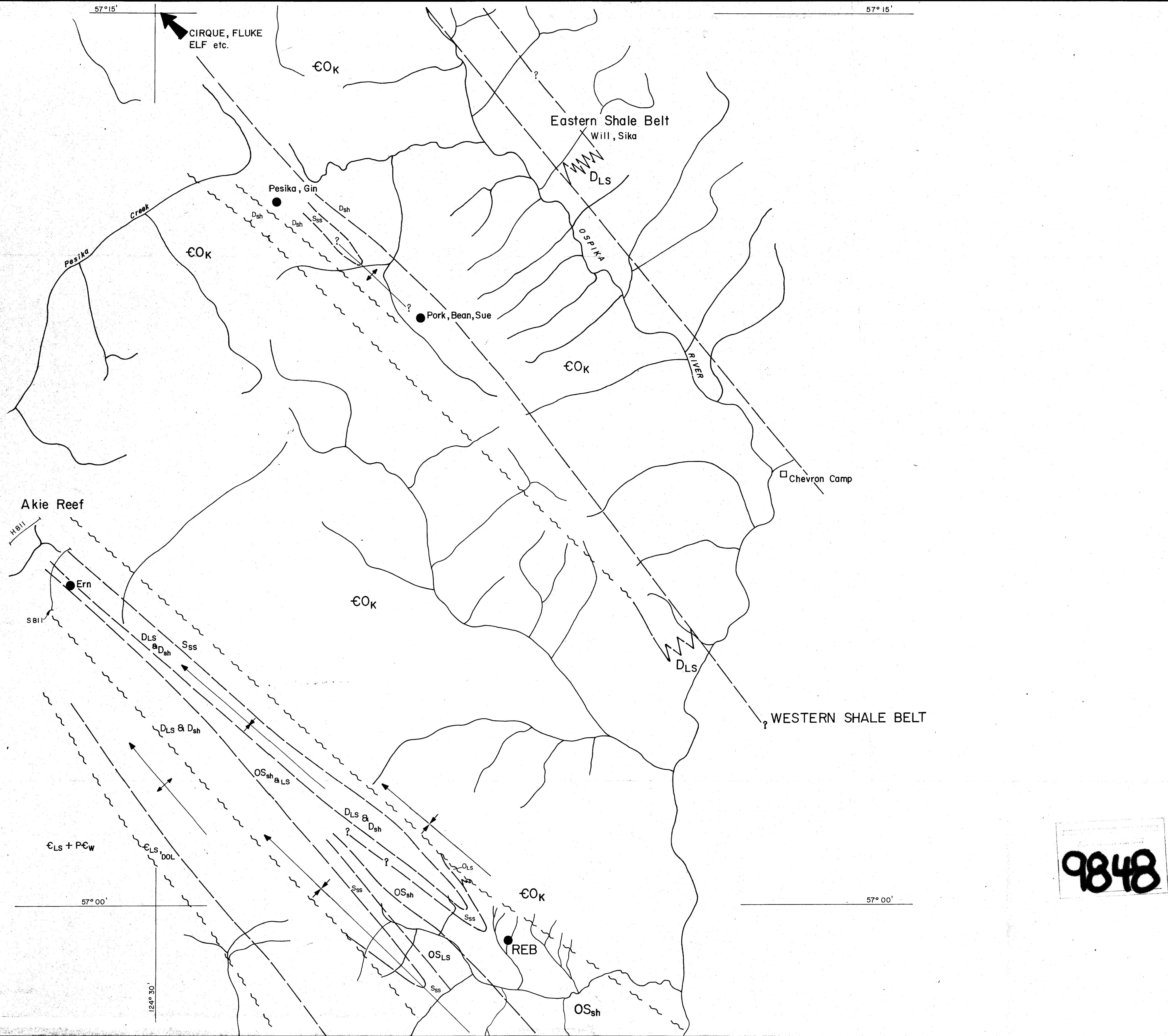
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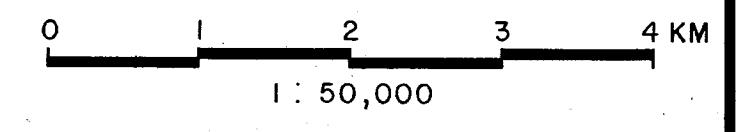
ESSO MINERALS CANADA

GEOLOGY INTERPRETATION MAP
REB PROSPECT

Project No. 2152	Mining Division Omineca
NTS 94-F-1, C-14	Drawn By: A.S./ r.w.r.
Date: Oct. 25, 1981	Map No. 2



- LEGEND:**
- D_{LS,sh} DEVONIAN limestone and shale
 - S_{SS} SILURIAN siltstone
 - O_{Ssh,LS} ROAD RIVER GROUP shale and limestone
 - €O_K KECHIKA GROUP phyllites
 - €_{LS,DOL} ATAN GROUP limestone, dolomite
 - PC_w WINDEMERE GROUP meta sediments
- Geological contact, approximate
- ~ Fault
- ↕ Anticline
- ↘ Syncline
- ↘ Syncline, overturned
- Mineral Property

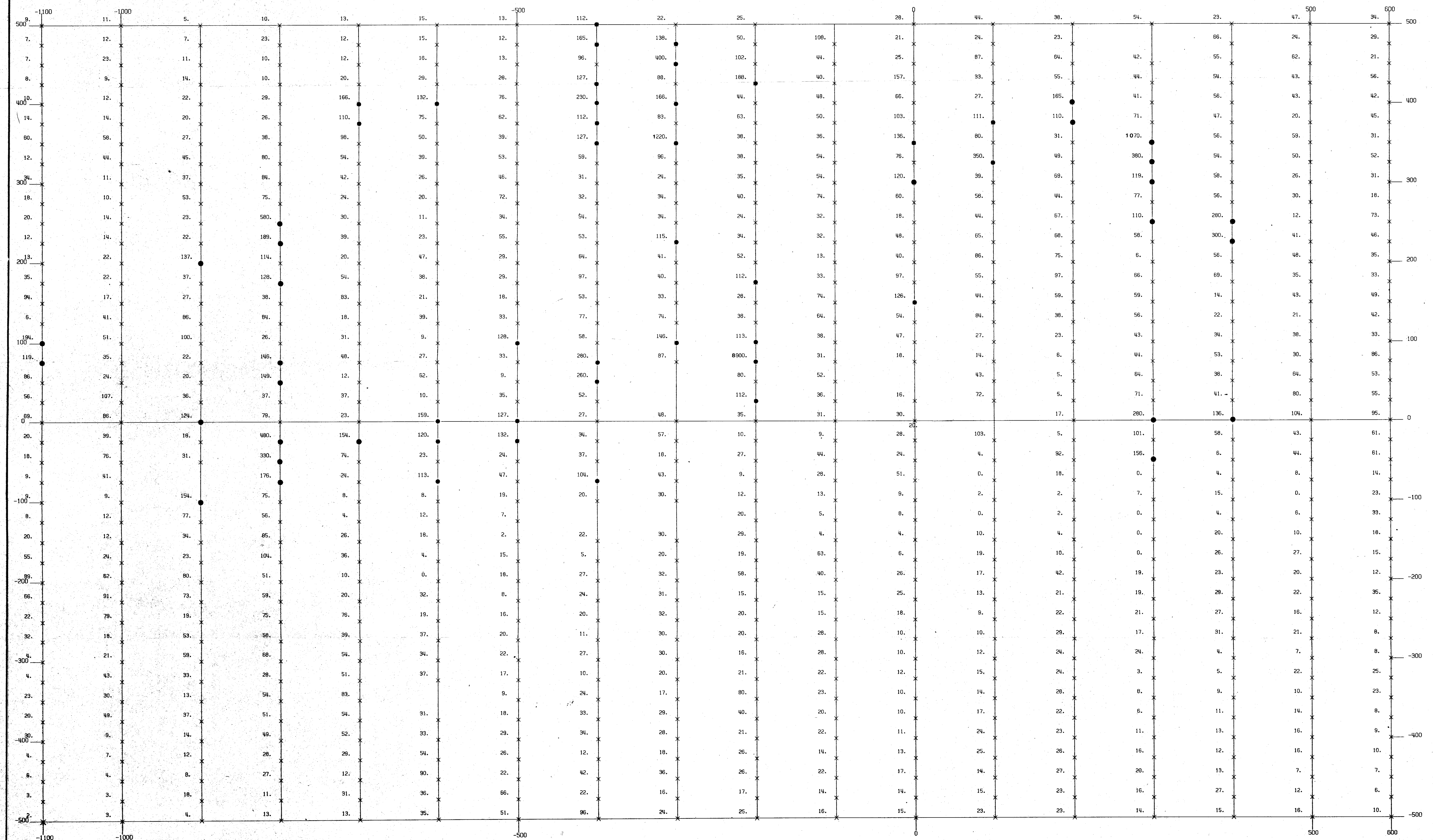
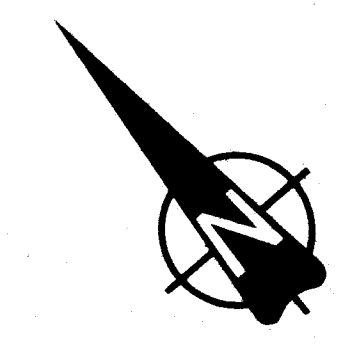


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ESSO MINERALS CANADA

GEOLOGY SKETCH MAP
OSPIKA RIVER AREA

Project No. 2152	Mining Division Omineca
NTS 94-F-1, C-16	Drawn By: AS./r.w.r.
Date: Oct. 25, 1981	Map No. 3



LEAD SOIL GEOCHEMISTRY

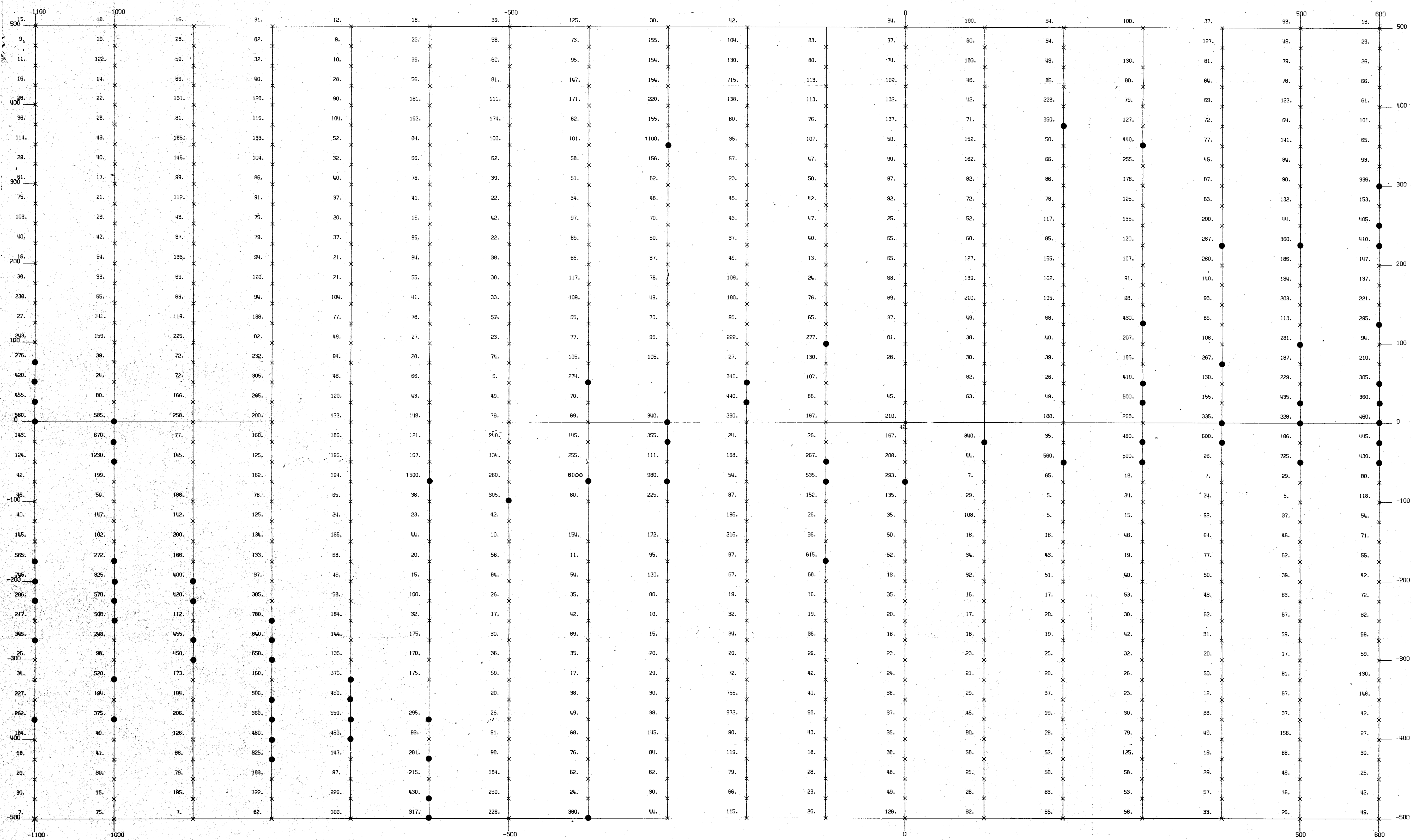
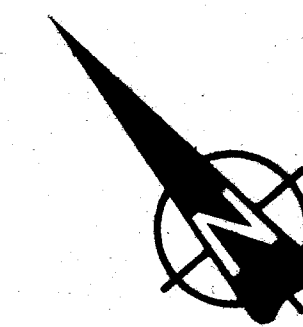
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ESSO MINERALS CANADA

REB PROSPECT

0 50 100M 1:2500

Project No. 2152	Mining Division Omineca
N/S	Drawn By
Date	Map No. WAP 4



ZINC SOIL GEOCHEMISTRY

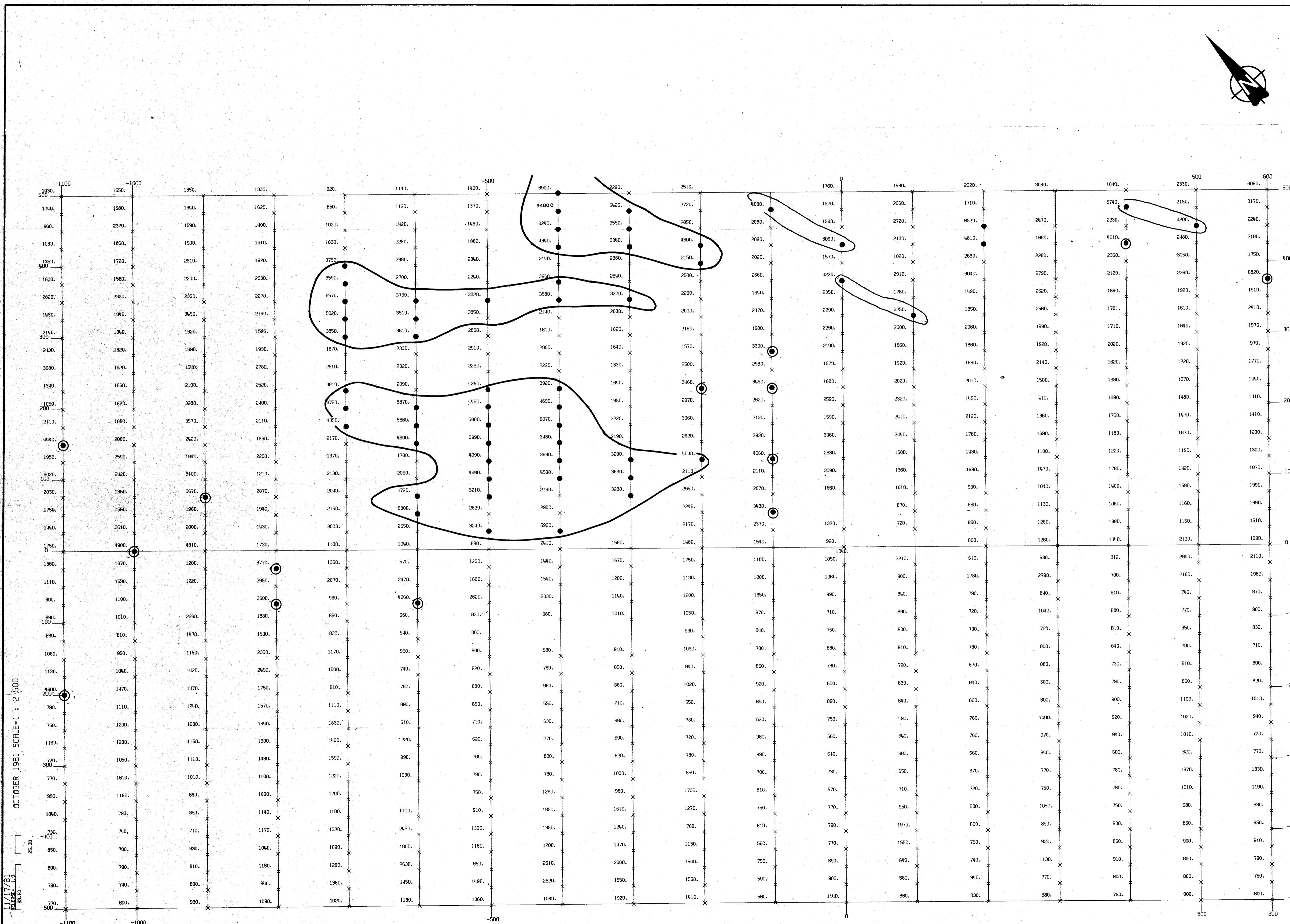
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ESSO MINERALS CANADA

REB PROSPECT

0 50 100M 1:2500

Project No.	2152	Mineral District	Omineca
Site		Drawn By	
Date		Map	MAP 5



11/17/81
OCTOBER 1981 SCALE=1 : 2500
25.00

BARIUM SOIL GEOCHEMISTRY

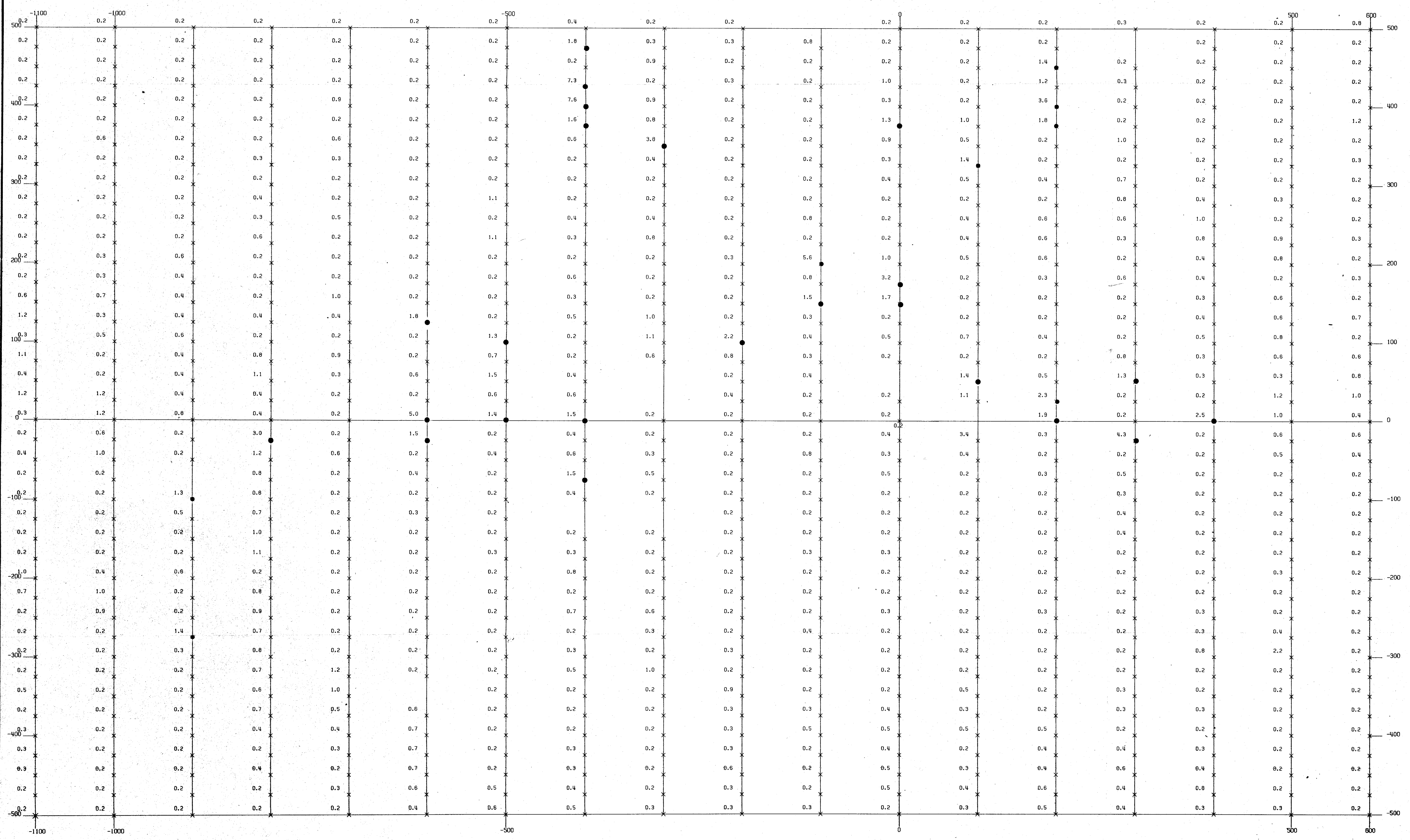
9848

ESSO MINERALS CANADA

REB PROSPECT

0 50 100M 1:2500

Project No. 2152	Mineral Division Omineca
NTS	
Date	MAP 6



SILVER SOIL GEOCHEMISTRY

9848

ESSO MINERALS CANADA

REB PROSPECT

0 50 100M 1:2500

Project No. 2152 Mining Division Omineca

Date MAP 21