THE GEOLOGY, GEOCHEMISTRY, AND GEOPHYSICS OF THE REV CLAIMS, NORTH-CENTRAL BRITISH COLUMBIA (VOLCANOGENIC MASSIVE SULPHIDE)

LIARD MINING DIVISION

NTS 104 I - 2W, 3E, 6E

LONGITUDE 129°01'W LATITUDE 58°14'N

OWNER AND OPERATOR: ESSO RESOURCES CANADA LTD.

M.G. LOMENDA AND W.G. COOPER

NOVEMBER, 1983

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RECOMMENDATIONS

Follow-up is recommended on a few stream sediment heavy mineral anomalies and a rock geochemical anomaly found on the Rev Claims. As this work is of low priority, it could be done in conjunction with other work performed at the Kutcho Deposit.

SUMMARY AND CONCLUSIONS

The Rev Claims were staked in 1982 and 1983 as the area has potential to contain a volcanogenic massive sulphide deposit similar to the Kutcho Cu-Zn-Ag deposit. The claims are located in north-central British Columbia, about 65 km southeast of Dease Lake.

In 1982, pyritic felsic tuffs were located in a thick sequence of Kutcho volcanics eastward of Turnagain Lake. An HLEM survey that was carried out on a grid in this area detected several conductors associated with these tuffs. Subsequently Rev Claims 1-4 were staked.

Rev Claims 5-8 were staked in June and July, 1983 in order to get better coverage of the felsic volcanics. Between June 14 and July 31, 1983, geological mapping, prospecting, geochemistry, and geophysics were done on the claims. Total assessment applied to the claims was $48,439.

The Rev Claims are underlain by the King Salmon Assemblage, an isoclinally folded sequence of Mesozoic sedimentary and volcanic rocks. This assemblege consists of Upper Triassic Kutcho "Formation" felsic to locally mafic volcanics, conformably overlain by Sinwa Formation limestone, conformably overlain by Lower Jurassic Inklin Formation fine grained clastics. The King Salmon Assemblage is thrust over Lower Jurassic clastic rocks of the Takwahoni Formation. Associated with the King Salmon Assemblage is the Cache Creek Group of Mississippian - Permian age.

In 1983, most of the explorations were done in the southwestern part of the claims on a grid over Kutcho pyritic felsic tuffs and associated conductors. This area is underlain by a thin unit of intercalated felsic tuffs, argillite, sandstone, and conglomerate and by a thicker unit consisting mainly of intermediate tuffs. Prospecting indicated that the conductors probably are caused by graphitic sediments and thus are unimportant. No significant mineralization or alteration was found in the Kutcho volcanics underlying the grid.

A small grid was constructed over a minor malachite showing in Rev Claim 7. No important mineralization or alteration were found in two thin wedges of felsic tuffs underlying this grid.

A few Cu and Pb anomalies were detected in soils collected from the grid in the western part of the claims. All of the Cu anomalies occur over intermediate tuffs and argillites; high Pb values were found scattered over the entire Kutcho section. Prospecting of the anomalous areas located only one small malachite showing in the intermediate tuffs thus suggesting that these anomolies are unimportant.

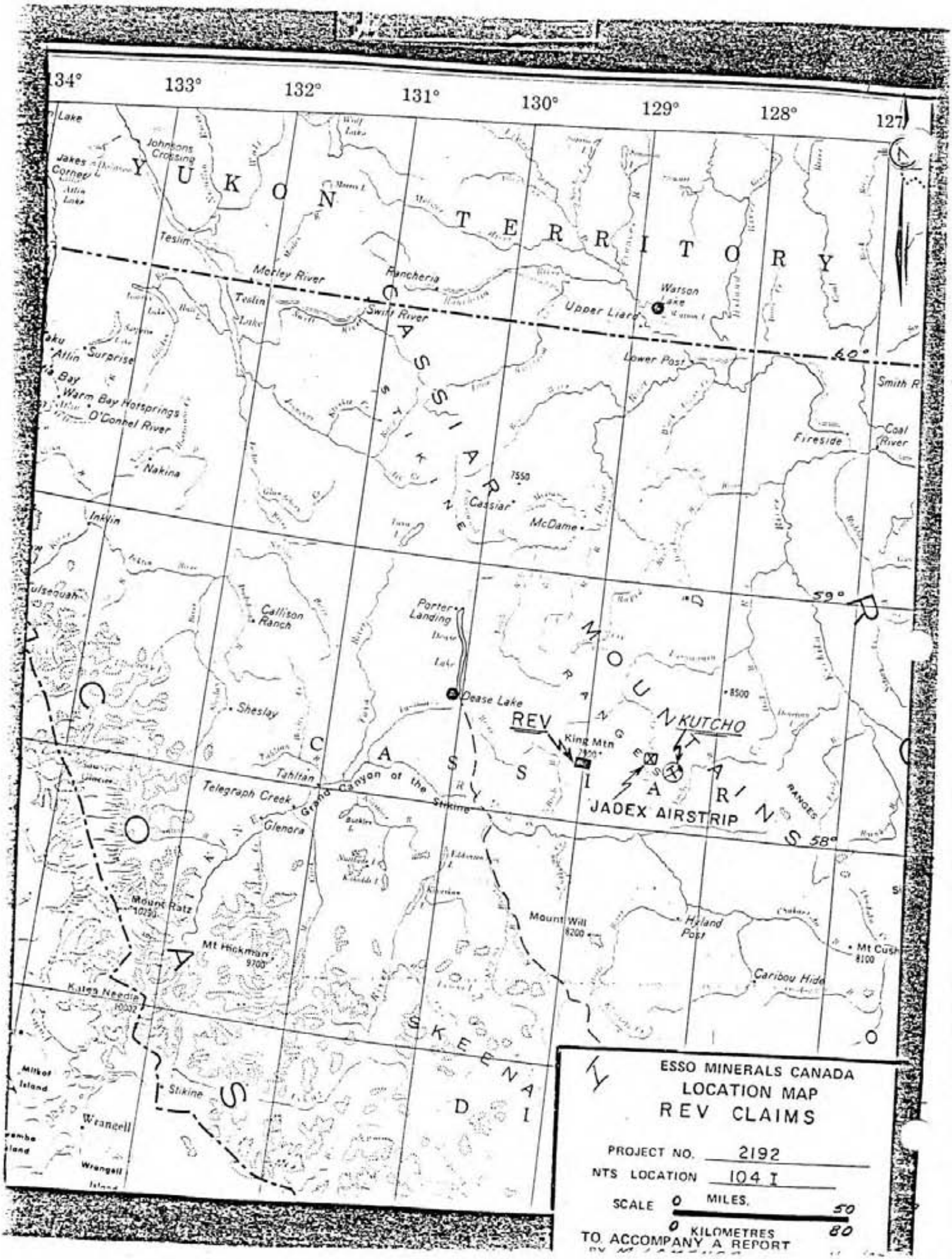
No anomalous soils were found on the Rev 7 Grid in the eastern part of the property.

The rock geochemical samples collected on the property were low in metals. One sample of felsic tuff collected near a conduction in the western part of the main grid was highly enriched in K_2O.

Stream sediment heavy mineral sampling located two creeks in the eastern part of the Rev Claims with high Ag, As, Cu, Mo, Pb, Sb, Zn, and Hg. These anomalies are unexplained although they may represent a high background or mineralization in Kutcho "Formation" argillites.

HLEM, magnetometer, and gravity geophysical surveys were done over the area underlain by the felsic tuffs and conductors. These surveys suggested that the probable source of the conductors is graphite in argillaceous sediments. HLEM and magnetometer surveys carried out over the Rev 7 Grid (malachite showing) failed to locate evidence of massive sulphide mineralization.

The geological, geochemical, and geophysical surveys indicate that the probability of finding an economic massive sulphide ore body on the Rev Claims is remote.



ESSO MINERALS CANADA
LOCATION MAP
REV CLAIMS

PROJECT NO. 2192
NTS LOCATION 104 I
SCALE 0 MILES. 50
0 KILOMETRES 80
TO ACCOMPANY A REPORT

INTRODUCTION

In 1982, Esso Resources Canada Ltd. staked Rev Claims 1-4 as the area was thought to have potential to host a volcanogenic massive sulphide deposit similar to that at Kutcho Creek. The claims are underlain in part by Upper Triassic intermediate tuffs, which contain a pyritic, felsic component.

The Rev Claims are located in the Cassiar Mountains of north-central British Columbia, about 65 km southeast of Dease Lake and 180 km south of Watson Lake (NTS 104 I-2W, 3E, 6E) (Fig. 1). The geographic center of the property is situated at Longitude 129°01'W and Latitude 58°14'N.

Access to the claims is by fixed-wing aircraft from Watson Lake to the Jadex airstrip on Kutcho Creek and then by helicopter 27 km westward to the claims. Alternatively, air transport is available at Dease Lake. The 1983 camp was located at Sumac's Kutcho base camp.

The western part of the Rev Claims are underlain by two rounded, gently sloping ridges that straddle tree line. To the east, the property is underlain by two rugged limestone capped ridges. Elevations on the property range between 1370 m and 1980 m.

HISTORY

In the summer of 1982, W. Fuchter discovered pyritic, felsic volcanics east of Turnagain Lake during reconnaissance of Kutcho volcanics (Marr, 1982 p. 12-15). In order to investigate these rocks a flagged grid was constructed with a 6 km base line and tie lines spaced at 300 m intervals along this base line. The geology under the grid was mapped at a scale of 1:6000 based on a few traverses and airphotograph interpretation. A Scintrex Genie HLEM survey done on the grid located several conductors in Inklin Formation argillite and four conductors in Kutcho volcanics. Those in the latter were discontinuous and were associated with pyritic, felsic tuffs. On this evidence, Rev Claims 1-4 were staked in September, 1982.

PRESENT WORK

The main objectve of the 1983 program was to evaluate the economic potential of the Kutcho rocks beneath the Rev Claims, in particular the pyritic felsic tuffs and conductors located in 1982. Work was done on the claims between June 13 and July 31, 1983 and consisted of geological mapping, prospecting, geochemical surveys, and geophysical surveys. Rev Claim 5 was staked on June 14 in order to get better coverage of the felsic tuffs. Reconnaissance mapping east of Rev 5 led to the discovery of malachite stained felsic tuffs and the subsequent staking of Rev Claims 6 - 8 on July 9. Monies spent on the claims in the above time period, excluding staking, totalled $48,439. A detailed cost statement and the assignment of work done are given in Appendix I.

In order to establish better control for the various surveys, 20.7 km of flagged grid were constructed on the claims. Thirty-one rock, 662 soil, and 23 stream sediment heavy mineral samples were collected. The geophysics, which was interpreted by W.G. Cooper, consisted of 15.1 km of HLEM surveying, 18.5 km of magnetometer surveying, and 2.8 km of gravity surveying. Details of this work are included in ensuing sections.

Fig. 2

ESSO MINERALS CANADA

LOCATION MAP

REV CLAIMS 1-8

PROJECT NO. _____

NTS LOCATION 104 I 3W, 2E

SCALE 0 MILES, 2.5

0 KILOMETRES 4

TO ACCOMPANY A REPORT

BY M. LOMENDA DATED Nov. 1983

A claim map showing the claim boundary is given in figure 2. Details of the claims are listed below.

Claim	Units	Record No.	Date Recorded
Rev 1	12	2537	82-10-06
2	20	2538	82-10-06
3	4	2539	82-10-06
4	20	2540	82-10-06
5	16	2876	83-07-08
6	16	2880	83-07-27
7	20	2881	83-07-27
8	8	2882	83-07-27

GEOLOGY

Geology of the Area

The Rev Claims are underlain by the King Salmon Assemblage, a structural wedge of deformed Mesozoic sedimentary and volcanic rocks bound to the southwest by the King Salmon Fault and to the northeast by the Nahlin Fault (Gabrielse, 1962; Monger and Thorstad, 1978; Gabrielse et al., 1977) (Fig. 3). Closely associated with this sequence is the Mississippian to Permian Cache Creek Group. The King Salmon Assemblage consists of three divisions that grade into one another. These are in ascending order: the Kutcho "Formation", Sinwa Formation, and Inklin Formation (Table 1). This assemblage is isoclinally folded and has a strong penetrative foliation dipping northeast, parallel to the King Salmon Fault. Metamorphism is subgreenschist to greenschist.

TABLE I

Lower Jurassic

Inklin Formation: Intercalated greywacke, dark grey to black shale, siltstone, and phyllite.

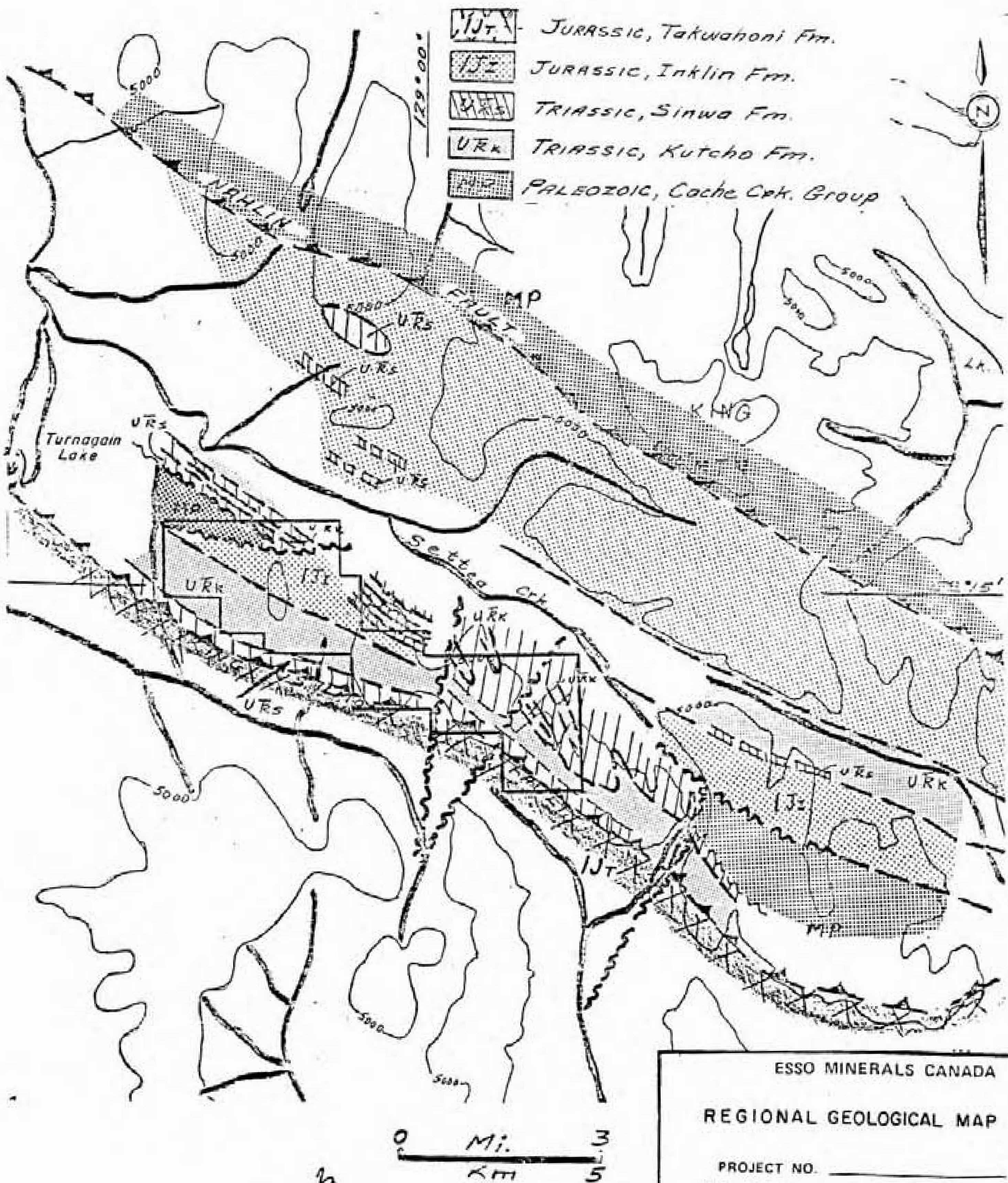


Fig 3

ESSO MINERALS CANADA

REGIONAL GEOLOGICAL MAP

PROJECT NO. ______

NTS LOCATION 104 I 2E,3W.

SCALE 1:125,000 — 0 MILES 3 — 0 KILOMETRES 5

TO ACCOMPANY A REPORT BY M. LOMENDA DATED Nov. /83

Upper Triassic

Sinwa Formation: Dark grey, well foliated, generally crystalline, fetid limestone and minor intercalated conglomerate and argillite.

Kutcho "Formation": Felsic to locally mafic pyroclastic rocks, volcaniclastic rocks, with intercalated sedimentary rocks and subordinate flows and synvolcanic intrusives.

Geology of the Claims

Propecting and mapping of the rocks beneath the Rev Claims and the exploration of Kutcho volcanics eastward of the claims were done using 1:30,000 scale airphotographs. The geology was plotted on a base map, scale 1:15,000, which was constructed from these airphotgraphs (Map 1). The stratigraphy of the claims and surrounding area is summarized in Table 2.

Several structural blocks of Kutcho volcanic and volcaniclastic rocks underlie the claims area. These blocks differ lithologically from each other across, as well as along strike.

In the western part of the claims, Sinwa Formation limestone along the King Salmon Fault is succeeded to the north by Kutcho "Formation" tuffs, and in turn are succeeded by Inklin Formation argillites. About 90 m of intercalated felsic tuffs, argillite, and coarser grained clastic sediments are juxtapositioned against the limestone. The remaining 600-1000 m of volcanics consist of intermediate tuffs and breccias with minor felsic and sedimentary components. Eastward along strike, the tuffs and clastics positioned against the limestone grade into mainly argillite, which thickens at the expense of the intermediate tuff unit.

In the northwestern part of the claims, wedges of green, sericitic, chloritic tuffs are in contact with slices of Sinwa limestone. Eastward across a fault and onto the next ridge, the Kutcho sequence is composed of siliceous, sericitic ash and lapilli tuffs, and green felsic to intermediate tuffs. South of Settea Lake, minor malachite are rare sphalerite(?) were found in light grey siliceous tuffs and in green felsic to intermediate tuffs.

East of the claims, a distinctive wedge of Kutcho volcanics contains black siliceous tuff, black chert, and black siliceous argillite. Eastward of Settea Lake, the most northerly belt of Kutcho volcanics in the area consists of intermediate to mafic tuffs and breccias with minor intercalations of argillite, greywacke, and felsic tuffs.

Interpretation of the structure in the area is made difficult by the absence of fossils, marker beds, and indicators of bedding tops. However, the rocks underlying the Rev Claims probably are isoclinally folded and thrust faulted. Evidence for this possibility are listed as follows:

a) Foliations dip 55-80° northeasterly, roughly parallel with the underlying thrust surface, the King Salmon Fault.

b) Where observed, bedding parallels foliation.

c) Rock units are complexly repeated in a series of subparallel slices.

d) In the eastern part of the property, finger-shaped masses of Kutcho volcanics appear to occupy the cores of tight folds.

Rocks in the claims area are lineated with kink bands, elongated minerals, and the intersection of planes. These plunge 30-60° to the north and northwest.

Two north-south striking faults transect the claims area. It is unlikely, however, that the displacements on these faults are great.

TABLE 2 - Rock Units Underlying The Rev Claims

Map Unit	
	Lower Jurassic
$1J_t$	Takwahoni Formation: Dark brown to dark grey, very fine to fine grained greywacke; dark grey, silty shale and clayey siltstone; minor grit and conglomerate with black chert pebbles; recessive.

lJ_I Inklin Formation: Dark grey, silty argillite; dark brown, clayey siltstone and very fine grained greywacke; recessive.

Upper Triassic

uT_S Sinwa Formation: Medium to dark grey, recrystallized limestone with white calcite bands parallel with bedding; locally fine grained and finely laminated; locally brecciated; minor fine grained, sugary dolomite; resistant.

uT_K Kutcho "Formation": Medium to dark green, pyritic, epidote-carbonate-chlorite altered intermediate ash and lapilli crystal tuffs and breccias; locally with feldspar and hornblende phenocrysts; light green to light grey, siliceous, sericitic ash and lapilli tuffs, quartz eye tuffs; light grey to green felsic to intermediate tuffs; purple, hematite altered felsic to intermediate tuffs; argillite with minor lenses of felsic tuff and greywacke; black, very siliceous tuffs, black chert, and siliceous argillite; minor arkose and conglomerate; recessive.

Mississippian - Permian

MP Cache Creek Group: Dark brown, grey, and green, carbonate and serpentine altered ultramafic intrusives (peridotites?), highly weathered; mafic flows and intrusives; black argillite; slightly resistant.

Main Grid

Most of the work done in 1982 was centered in the western part of the claims over the pyritic felsic tuffs and conductors located in 1982. Flagged tie lines, spaced 100 m apart, were added to parts of the 1982 grid for better control. These lines were added between 15E and 15W and between 20W and 28W (Maps 2A, B, C).

The Kutcho volcanics underlying the Main Grid area are divided into two major units - a felsic tuff-clastic unit and an intermediate tuff unit. These rocks, which may be overturned, dip 55-75° northeasterly, parallel to the foliation. Outcrop in the grid area is poor and at many locations consists of frost-heaved boulders or talus. The geology and results of prospecting the grid area are described in the following sections.

Felsic Tuff - Clastic Unit

The area of prime interest is underlain by 70-100 m of complexly intercalated and intertongued felsic tuffs, argillite, sandstones, and conglomerates. In places, these lithologies thicken or thin, and change facies in distances of less than 100 m. Argillite is dark grey to black, recessive, and locally contains greywacke, soft graphitic shale, and black graphitic limestone. Lenses of coarser grained clastics in the unit consist of arkose, quartzose grit, and conglomerate. The later is poorly sorted and contains scattered rounded pebbles of felsic tuff, quartz, and intermediate tuff; and minor thin beds and angular clasts of argillite.

Felsic pyroclastic subunits range in thickness from 0 to 50 m and consist of dust to lapilli tuffs with minor bomb size fragments. Quartz phenocrysts are visible in many of these pyroclastics. The tuffs contain 1-5% of fine to medium grained disseminated pyrite and minor pyrrhotite. Locally, horizons of disseminated fine grained magnetite can be found. Some of the tuffs are weakly to moderately altered to siliceous sericite schists and calcareous sericite schists.

In places it is difficult to distinguish between clastic and pyroclastic rocks. Examples of this are pyritic, quartz-sericite schists; granular, pyritic, very siliceous, quartzo-feldspathic rocks; and sericitic, grit-like rocks.

HLEM Conductors

Prospecting of the felsic tuff-clastic unit has indicated that the conductors probably are graphitic zones within the argillites. A few of these conductors were more difficult to interpret. In the eastern half of the grid at about Line 6E, a slightly pyritic, quartz-eye felsic tuff coincides in part with a conductor axis. In addition, R. Britten in 1982 reported a trace of chalcopyrite from tuffs in this area. However, the thickness of this tuff, alteration, and gravity geophysics downgrades the economic potential of the tuff. Megascopically the tuff appears relatively unaltered; geochemically it is K_2O depleted. Thin sections from this tuff examined by Britten in 1982 indicate albite-quartz-pyrite-carbonate alteration rather than the sericitic type characteristic of the Kutcho Deposit.

The eastermost conductor partly underlies argillite and tuffaceous rocks on Line 9E (Map 2C). However, as this conductor underlies only argillite on Line 8E and has no gravity response, it is concluded to be graphite.

A few old trenches were found in the western part of the grid at about 24+50W 6+50N (Map 2A). These had been excavated 40 or 50 years ago into pyritic felsic tuffs and argillite. One of these trenches has exposed graphitic shale and graphitic limestone close to one of the conductors.

Intermediate Tuff Unit

Green intermediate volcanics comprise most of the Kutcho sequence in this western part of the claims. These volcanics consist mainly of ash and lapilli crystal tuffs with minor breccias and dust tuffs. Breccia textures usually are obscure suggesting that the breccia component of these volcanics may be of more importance. The intermediate volcanics contain feldspar and hornblende phenocrysts in a matrix of chlorite, feldspar, and lithic debris. Hornblende phenocrysts usually are replaced by discoid grains of chlorite or actinolite; feldspar is altered to light green epidote or clinozoicite, and calcite.

Intercalations of green to purple, hematite altered ash tuffs probably are of felsic to intermediate composition. Light colored, siliceous ash and lapilli tuffs, argillite and greywacke, and thin limestone beds are minor components in the intermediate tuff unit.

One small showing of malachite was found in green felsic to intermediate tuffs (Map 2A). No other mineralization or significant alteration was found in the intermediate tuffs.

Rev 7 Grid

A flagged grid was established over a thin wedge of malachite stained volcanics south of Settea Lake (Maps 1 and 3). A base line was constructed, bearing 337°, for a distance of 800 m. Tie lines, 200 or 400m long, were spaced at 100 m intervals along the base line. Geological mapping, soil sampling, a magnetometer survey, and an HLEM survey were done on this grid.

Two slices of Kutcho felsic tuff and two slices Sinwa limestone crop out under the grid. Bedding, which parallels foliation, is vertical or dips steeply northeast. The mineralized volcanics are about 25 m thick and consist of light grey, fine grained, siliceous, quartz-eye sericite schist. Weak malachite staining, minor pyrite, and rare brown sphalerite(?) were found on fractures in this schistose tuff.

Talus of unmineralized felsic tuff occur at the eastern end of the grid. Minor malachite was found in other Kutcho felsic volcanics outside of the grid area.

GEOCHEMISTRY

A number of geochemical surveys were done on the claims. These were soil sampling on the Main Grid and Rev 7 Grid, rock sampling on routine traverses, and stream sediment heavy mineral sampling.

Soil Geochemistry

Main Grid

Soil and seep samples were collected at 494 sites over selected parts of the Main Grid. Most of the soils were from the 'A' or 'C'-horizon due to the poor soil development in this area. The samples were sent to Min-En Labs where they were analyzed by the ICP method for Ag, As, B, Co, Cu, Mn, Mo, Pb, Sb, Zn and by Atomic Absorption for Hg. (Appendix II). The concentrations of Cu, Pb, Zn, and Ag were plotted on Maps 4A, 4B, and 4C.

The frequency distribution of Cu was plotted on Figure 4. Cu concentrations greater than 100 ppm were assumed to be anomalous.

A number of Cu anomalies and small anomalous area were outlined over the intermediate tuffs; a few high Cu soils were found associated wth argillites. In places, anomalies are aligned parallel to stratigrpahy suggesting Cu-bearing units. No sulphides or significant alteration was found in boulders and sparce outcrop in the anomalous areas. One small showing of malachite was located in green felsic to intermediate tuffs near 25W, 8N (Map 4A).

Scattered, weakly anomalous Pb (20-55ppm) occurs in the grid area. None of these anomalies coincide with high Cu soils. No Pb mineralization was found on the claims.

Rev 7 Grid

Soil samples were collected from 168 sites over the Rev 7 Grid. These were analyzed in the same manner as the soils collected from the Main Grid (Appendix III).

Cu and Zn were plotted on Map 5. No anomalous metals were detected.

Rock Geochemistry

Thirty-nine rock geochemical samples were collected on the Rev Claims and immediate area (Maps 1; 2A, B, C; 5). These samples included representative lithologies, felsic tuffs proximal to the conductors, and altered felsic tuffs. The samples were sent to Min-En Labs where they were analyzed for 13 elements by the ICP method (Appendix II). Pertinent data is plotted on Table 3.

The Kutcho massive sulphide ore body is enveloped by a hydrothermal alteration halo characterized by the enrichment of K_2O and depletion of Na_2O. This alteration zone extends 500 m beyond the edge of the ore body, at least 290 m below in the footwall rocks, and 180 m above in the hanging wall (written comm. D. Bridge). The $Na_2O/Na_2O + K_2O$ ratios from the Rev samples are relatively Na_2O enriched (Table 3). A single sample (8390), however, has a ratio of 0.39 and thus is K_2O enriched relative to the Kutcho deposit. The sample was collected from a sericitic, pyritic, felsic ash tuff located about 20 m south of HLEM and mag. anomalies (Map 2A) Although the conductor axis is underlain by graphitic sediments, the area underlain by this sample should be resampled if other work is done in the area.

Metal content in the Rev samples are low. However, anomalous Cu is found in a few samples collected at or near a few small malachite showings (8400, 8402, 8404, 8405).

Table 3: Rock Geochemistry (ppm)

Sample No.	Ag	As	Cu	Mo	Pb	Zn	$\frac{Na_2O}{Na_2O+k_2O}$	Lithology
3L-8376	1.0	0	17	2	0	34	0.92	Grit, fels tuff?
8377	0.9	0	10	3	0	0	1.00	Fels. tuff
8378	1.0	0	15	6	0	0	1.00	Fels. tuff
8379	0.6	0	105	5	0	41	0.90	Fels. int. tuff - breccia
8380	0.6	0	46	5	0	31	0.96	Int. tuff
8381	0.3	0	29	5	0	34	0.83	Fels. int. tuff
8382	0.2	0	21	6	0	44	1.00	Fels. tuff, ss?
8383	0.6	0	21	6	0	0	1.00	Fels. tuff
8384	1.0	0	11	4	0	58	0.91	Int. Lapilli tuff
8385	1.2	0	13	3	0	41	0.57	Int. tuff, hem.
8386	0.3	0	120	3	0	38	0.78	Int. lapilli tuff
8387	0.4	0	41	5	0	38	0.83	Int. lapilli tuff
8388	0.0	0	2	4	0	30	0.85	Fels. tuff -breccia
8389	0.0	0	20	4	0	34	0.70	Fels. tuff, silt?
8390	0.1	0	31	6	31	56	0.39	Fels. lapilli tuff
8391	0.2	0	20	5	0	40	0.79	Fels. tuff
8392	0.0	0	23	6	0	37	0.75	Fels. tuff - grit?
8393	0.0	0	13	3	9	21	0.78	Fels. tuff
8394	1.8	0	19	5	3	16	0.99	Fels. lapilli tuff
8395	1.0	0	19	9	28	58	0.83	Fels. tuff
8396	1.5	18	30	8	33	39	0.88	Fels. lapilli tuff
8397	1.3	0	20	2	13	24	0.79	Fels. tuff
8398	0.0	0	40	2	0	44	0.83	Int. tuff
8399	0.0	0	25	0	0	35	0.86	Fels. tuff
8400	0.0	0	136	9	4	78	0.98	Fels. lapilli tuff
8401	0.0	0	14	1	0	74	0.83	Fels. tuff
8402	0.0	0	705	1	0	40	0.88	Fels. tuff, malachite
8403	0.3	0	88	0	0	38	0.77	Fels. tuff
8404	0.0	0	154	14	57	77	0.93	Fels. tuff, malachite
8405	0.0	0	196	0	0	40	0.96	Fels. tuff
8406	0.0	0	58	0	0	26	0.97	Fels.-int tuff

Heavy Mineral

Twenty-three stream sediment heavy mineral samples were collected from four creeks draining the Rev Claims and immediate area. One Kraft paper sample bag of alluvium was collected at each sample site. The heavy mineral separates in the -10 to +20 mesh, -20 to +40 mesh, and -40 mesh size fractions were analyzed for Ag, As, B, Co, Cu, Mn, Mo, Pb, Sb, Zn by the ICP method and for Hg by Atomic Absorption (Appendix II). The Cu-Pb-Zn-Ag concentrations from the -40 mesh size fractions were plotted on Map 5.

Many of the samples from the two easternmost creeks contain "possibly anomalous" to "anomalous" Ag, As, Co, Cu, Mo, Pb, Sb, Zn, and Hg in some or all of the size fractions. The -40 mesh results from these two creeks are listed in Table 4. Kutcho "Formation" argillite, greywacke, and volcanics and Sinwa Formation limestone underlie the area drained by these creeks. Minor showings of malachite were found in felsic tuffs in this area. Ths most anomalous sample, H633 (10.3 ppm Ag, 504 ppm As, 571 ppm Cu, 106 ppm Mo), is sourced from a small area underlain mainly by argillite. Although the high metal concentrations remain unexplained, they may be caused by weak mineralization or a high background in the argillite. These numbers are high relative to sampling done on the Kutcho Property.

Table 4 - Heavy mineral data from eastern part of claims, -40 mesh (ppm except Hg)

	Ag	As	Co	Cu	Mo	Pb	Sb	Zn	Hg(ppb)
H629	2.7	252	89	179	46	121	24	254	95
H630	3.9	793	74	196	43	104	20	285	85
H631	4.2	264	80	203	50	90	18	338	145
H632	4.0	259	81	199	51	113	25	326	75
H633	10.3	504	121	571	106	232	61	692	538
H634	1.7	239	104	172	40	124	28	222	110
H635	2.8	302	112	175	47	127	35	235	97
H636	2.0	156	48	93	25	61	17	153	---
H637	3.2	330	94	200	53	111	37	304	130
H638	3.0	288	129	158	51	118	29	228	65
H639	3.4	345	108	205	57	155	30	319	22

GEOPHYSICS

Introduction

This report covers the geophysical surveys over 3 of the 4 conductors located in 1982 (no work was done on the 4th conductor), and the malachite showing. The purpose of the HLEM survey was to detail the conductors outlined in 1982, and see if there was any conductors associated with the malachite showing. Magnetometer surveying was carried out to support geological mapping, and the gravity method was used to assess the EM conductors.

Survey Methods and Results

All of the surveying was carried out on flagged grid lines, put in using a compass and hip chain.

HLEM

The HLEM survey was carried out with a Scintrex SE-88 Genie EM system, using a coil spacing of 100 m and transmitting frequency ratios of 3037.5 Hz/112.5 Hz, 1012.5 Hz/112.5 Hz and 337.5 Hz/112.5 Hz. A description of the system is in Appendix III. In addition, detailed HLEM surveying using a coil spacing of 50 m was carried out over two lines. The readings were plotted in profile form and are presented on the following maps:

Map 6 - HLEM - Lines 20W to 26W (100 m)
Map 7 - HLEM - Lines 14W to 0 (100 m)
Map 8 - HLEM - Lines 0 to 10E (100 m)
Map 9 - HLEM - Malachite Showing (100 m)
Map 10 - HLEM - Lines 3+00E, 3+75E (50 m)

Magnetometer

The magnetometer surveying was carried out using an EDA PPM 350 proton precession magnetometer. A description of the unit is in the Appendix. The readings were corrected for diurnal variations of the earth's magnetic field, then plotted and contoured, and are presented on the following maps:

Map 11 - MAG - Lines 20W to 26W
Map 12 - MAG - Lines 14W to 0
Map 13 - MAG - Lines 0 to 10E
Map 14 - MAG - Malachite Showing

Gravity

The gravity surveying was carried out using a La Coste - Romberg model G gravity meter. Elevations along the survey lines were obtained with a GDD electronic level. Descriptions of both these units are in the Appendix. The data was corrected to latitude 58°, 15', and a value of 2.67 g/cm^3 was used in the elevation correction. The elevation for a station on each line was taken from NTS sheet 104I, then the relative elevation for stations along the line were obtained using the electronic level.

The gravity data was plotted in profile form and a second order regional was removed. The results are presented on the following maps:

Map 15 - Gravity - Line 23W
Map 16 - Gravity - Line 4W
Map 17 - Gravity - Line 2W
Map 18 - Gravity - Line 5E
Map 19 - Gravity - Line 7E

Discussion of Results

Lines 20W to 26W (Maps 6, 11, 15)

The 1982 HLEM survey indicated a single conductor in this area. Results from the 1983 HLEM survey confirm this. The interpretation of this conductor (labelled 3 or map 1) is as follows:

Strike Length:	600 m
Dip:	60°N
Depth:	25 m
Quality	Fair

The magnetic survey shows six weak anomalies (100 gammas). These are labelled A to F on Map 11. The anomalies are interpreted to be caused by dike-like features, reflecting bands of slightly higher magnetic susceptibility within the tuff units. Anomalies A and B appear to be coincident with the HLEM conductor, however, because the conductor is a continuous feature and the mag anomalies are not, the conductor is not the source of the mag anomalies.

The gravity data shows no response to the HLEM conductor (map 15).

Graphitic sediments have been mapped along the conductor axis and are the cause of the HLEM conductor.

Lines 14W to 10E (Maps 7, 8, 10, 12, 17 to 19)

The 1982 HLEM survey indicated 2 conductors in this area. Results from the 1983 survey show that these conductors are actually 6 en echelon conductors. These are labelled 1a-1c and 2a-2c, on maps 7 and 8. The interpretation of these conductors is as follows:

Conductor	Strike Length	Dip	Depth	Quality
1a	300 m	60°N	10 m	Fair
1b	350 m	45°N	10 m	Fair
1c	250 m	60°N	15 m	Fair
2a	200 m	60°N	30 m	Fair
2b	500 m	60°N	15 m	Fair
2c	300 m	60°N	50 m	Fair

The magnetic survey shows 16 weak anomalies. These are labelled G to V on maps 12 and 13. None of the anomalies are associated with the HLEM conductors. Similarly, as in the area around lines 20W to 26W, these are interpreted to be caused by bands of slightly higher magnetic susceptibility within the tuff units.

The results from the gravity survey carried out over conductors 2b, 1a and 1b (maps 16 to 19) show no anomalous response to the conductors.

The cause of the HLEM conductors is graphitic sediments.

Malachite Showing (Maps 9, 14)

No conductors were outlined by the HLEM survey. The magnetic survey shows two anomalies. These are labelled W and X on map 4. The source of these features is unknown.

Conclusions

The magnetometer survey has outlined bands of slightly higher magnetic susceptibility within the tuff units on the main grid. The HLEM survey was successful in detailing the conductors outlined by the 1982 survey. However all the conductors are caused by graphitic sediments. Hence, there is not gravity response to them.

Based on the geophysics, the Rev Claims should be dropped.

CONCLUSIONS

1. The probability of finding an economic massive sulphide beneath the Rev Claims is remote.

2. The HLEM conductors located in the Main Grid area probably are graphite in Kutcho "Formation" argillites.

3. Most of the Cu anomalies in soils collected over the Main Grid probably are caused by higher Cu concentrations in particular horizons in the intermediate tuff unit. These Cu concentrations and judged to be economically unimportant.

4. The occurrence of graphitic sediments beneath a conductor in the western part of the Main Grid, downgrades the importance of a single K_2O enriched felsic tuff sample collected near this conductor.

5. Stream sediment heavy mineral anomalies from creeks underlying Rev 7 are unexplained but may be caused by weak mineralization or a high metal background in Kutcho "Formation" argillites.

6. Geological, geochemical, and geophysical surveys carried out on the Rev 7 Grid (malachite showing) failed to detect significant mineralization or alteration.

7. The geophysical surveys did not outline any massive sulphides.

REFERENCES CITED

Gabrielse, H., 1962, Cry Lake, British Columbia:
GSC Map 29-1962

Gabrielse, H. Anderson, R.G., Leaming, S.F., Mansy, J.L., Monger, J.W.H., Thorstad, L., and Tipper, H.W., 1977
Geology of Cry Lake (104I) Maps - Area, British Columbia: GSC of 610

Marr, J. and Fuchter, W.H., 1983,
1982 Volcanogenic Reconnaissance of British Columbia:
Confidential EMC Rept.

Monger, J.W.H. and Thorstad, L., 1978, Lower Mesozoic Stratigrpahy,
Cry Lake and Spatsizi Map - Areas, British Columbia:
GSC, Current research, Part A, Paper 78-1A, p. 21-24

APPENDIX I

LIST OF PERSONNEL, EXPENDITURES,

AND THE ASSIGNMENT OF

WORK DONE

COST STATEMENT

The Rev 1-8 claims have been grouped in propostion to the amount of work done on the individual claims. Group Rev 83A consist of Rev 1-6 for 88 of the 116 rev units with 75% of the work done on these claims. Group Rev 83B consists of Rev 7-8 for 28 of the 116 Rev units with 25% of the work done on these claims.

The work was done between June 13 to July 31, 1983. Assessment is only claimed for work done after the staking of Rev 5 to 8 in 1983.

D. Bridge - geologist -	Field -	5 days @ #236	$1180
-	Report-	3 days @ $236	$ 708
M.Lomenda - geologist -	Field -	22 days @ $206	$4532
-	Report-	10 days @ $206	$2060
M. Jerma - geologist -	Field -	12 days @ $106	$1272
D. Berthelsen - assistant -	Field-	12 days @ $ 90	$1080
D. Moore - assistant -	Field-	12 days @ $ 79	$ 948
Z. Dobozynski - geophysicist -	Field	5 days @ $250	$1250
G. Cooper - geophysicist -	Field -	5 days @ $175	$ 875
-	Report-	3 days @ $175	$ 525
J. Hunt - geophysicist -	Field-	4 days @ $130	$ 520
D. Perrin - assistant -	Field-	4 days @ $100	$ 400

Air transportation, 9 men, proportion *of* trip (Vancouver or Toronto to Watson Lake and Kutcho camp) related to Rev project: $3600--

Camp Costs for accomodation and meals and services *of* cook-First aid attendent at Kutcho camp:

Field crews, 81 man-days at $50.00	$4050
Helicopter crew, 30 man-days at $50.00	$1500

Helicopter (500D including fuel) for field crew movement between Rev Claims and Kutcho camp, excluding staking and work off the claims, June 13 - July 31, 1983: 29.3 hr @ #590 $15822

Geochemistry

656 soils and silts @ $11.35	$7445.60
32 rocks @ $21.00	$ 672.00

Total

Total for Rev 1 - 6 (75%)	$36329.70
Total for Rev 7 - 8 (25%)	$12109.90

APPENDIX II

GEOCHEMICAL REPORTS

JUL 11 1983 RECD

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

~~E. Aird~~

ANALYTICAL REPORT

2122

Project ..... Kutcho 2122 + 2192 ..... Date of report ..... July 9/83.

File No. ..... 3-434 ..... Date samples received ..... June 28/83.

Samples submitted by: ..... D. Bridge

Company: ..... Esso Minerals

Report on: ..... 382 soils ..... Geochem samples

..... (ICP R) 99 ..... Assay samples

Copies sent to:

1. Esso Minerals, Vancouver, B.C.
2. Esso Minerals, Watson Lake, Yukon.
3.

Samples: Sieved to mesh ..... -80 soil ..... Ground to mesh ..... -100 assay

Prepared samples stored ☒ discarded ☐

rejects assay stored ☒ discarded ☒ soil

Methods of analysis: ICP-S Analysis. Hg-Flameless A.A., ICP-R analysis
Assays Cu, Pb, Zn, Ag-acid digestion-chemical analysis.
Au-fire assay.

Remarks:

2122 -01-63 'J' ; 115-251 Kutcho 2 ; 252-951 Pyro

2122 - 64-114 (Rev #2) 2192 -01 to 126 Rev #3

SPECIALISTS IN MINERAL ENVIRONMENTS

...T No: HUTCH? 2122/REV. 3192 705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2 FILE No: T-4348/87-8

ATTN: D. [illegible] (604)980-5814 OR (604)988-4524 DATE: JULY 9, 1987

REPORT VALUES IN PPM	AS	AG	B	CD	CU	MN	MO	PB	SB	ZN	HG-PPB
237	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	[illegible]	6	[illegible]	50
238	0	[illegible]	9	19	27	765	[illegible]	21	3	153	60
239	0	0	20	12	27	333	7	12	5	194	110
240	0	0	16	10	20	270	4	10	4	111	60
241	0	0	15	12	27	394	5	19	6	103	40
242	0	0	21	14	31	355	4	0	0	83	60
243	0	0	17	14	32	570	7	19	6	119	80
244	0	0	10	13	24	367	4	11	0	48	50
245	0	0	11	12	27	313	3	4	0	48	80
246	0	0	12	10	21	240	2	0	0	45	150
247	0	0	15	16	65	561	3	0	0	137	130
248	0	0	13	11	25	342	2	4	0	56	60
249	0	0	16	15	27	409	3	3	0	67	60
250	0	0	28	13	236	661	7	16	3	253	150
251	0	0	11	12	22	250	1	0	0	49	120
2122-64	.1	0	16	20	76	1020	10	36	0	135	70
2122-65	.2	0	13	16	29	2090	7	21	0	109	160
2122-66	.1	0	15	20	86	584	8	30	0	96	110
2122-67	.1	0	18	23	76	828	7	10	0	91	140
2122-68	0	0	14	13	54	603	7	14	0	92	50
2122-69	.8	0	13	15	83	662	5	17	0	69	60
2122-70	0	0	10	14	19	569	9	13	0	78	40
2122-71	0	0	14	15	37	1190	9	32	0	101	90
2122-72	0	0	15	15	46	747	6	5	0	110	70
2122-73	0	0	18	19	50	865	10	20	0	94	140
2122-74	0	0	12	17	36	397	11	29	1	71	80
2122-75	0	0	18	20	23	940	7	0	0	109	60
2122-76	0	0	14	19	39	1140	7	21	0	214	50
2122-77	0	0	16	22	57	624	10	40	6	129	40
2122-78	0	0	9	9	37	697	5	23	2	140	20
2122-79	0	0	14	13	141	873	7	11	0	137	110
2122-80	0	0	13	16	130	659	8	21	0	102	100
2122-81	.2	0	19	19	730	1030	7	0	0	83	170
2122-82	.2	0	10	11	94	734	4	4	0	61	150
2122-83	0	0	11	15	30	325	8	5	0	124	60
2122-84	0	0	8	11	24	597	6	6	0	73	150
2122-85	0	0	16	18	67	533	8	12	0	86	110
2122-86	.5	8	15	28	87	759	15	55	2	47	80
2122-87	0	24	14	17	83	317	12	31	0	82	150
2122-88	0	0	19	19	37	472	9	32	0	184	60
2122-89	.3	0	21	15	16	1470	9	30	0	259	100
2122-90	.6	0	20	14	36	1700	11	45	0	170	140
2122-91	0	0	23	22	52	1260	9	0	0	215	150
2122-92	0	0	13	15	34	826	11	38	1	151	30
2122-93	0	0	15	16	52	351	10	47	2	103	140

REV

COMPANY: ESSO MINERALS | MIN-EN LABS ICP REPORT | (ACT:GEOC) PAGE 1 OF 1

PROJECT No: REV. 2192 | 705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2 | FILE No: 7-434[illegible]

ATTENTION: D. [illegible] | (604)980-5814 OR (604)988-4524 | DATE: JULY 5, [illegible]

(VALUES IN PPM)	4 AG	AS	B	CD	1 CU	MN	MO	2 PB	SB	3 ZN	HG-PPB
2122-94	0	0	25	17	32	[illegible]	11	18	0	[illegible]	[illegible]
2122-95	0	0	15	36	60	1240	15	45	5	172	100
2122-96	.5	0	10	21	62	459	12	27	0	66	250
2122-97	0	0	12	13	16	308	8	0	0	67	120
2122-98	0	0	17	19	81	929	10	21	0	158	140
2122-99	0	0	7	13	14	228	5	0	0	44	110
2122-100	0	0	17	16	112	856	6	15	0	125	190
2122-101	0	0	16	13	157	1090	6	15	0	153	150
2122-102	0	0	9	17	26	497	3	0	0	57	60
2122-103	0	0	16	11	66	800	7	2	0	82	160
2122-104	.1	0	17	16	143	738	8	15	0	155	140
2122-105	0	0	21	13	57	280	9	20	0	85	260
2122-106	.8	0	13	14	162	1140	7	8	0	42	350
2122-107	.6	0	12	8	73	398	5	19	0	73	500
2122-108	0	0	12	17	24	515	7	9	0	75	70
2122-109	0	0	16	13	27	297	4	3	0	68	160
2122-110	0	0	14	11	18	215	7	0	0	42	170
2122-111	0	0	10	15	42	521	7	22	0	78	70
2122-112	0	0	3	4	13	75	4	10	0	27	120
2122-113	0	0	10	15	30	449	8	25	0	93	80
2122-114	0	0	9	11	24	273	6	21	0	82	110
2192-116	0	0	22	17	10	355	6	0	0	104	90
2192-117	0	0	17	21	11	607	6	0	0	128	160
2192-118	0	0	21	18	10	369	7	0	0	102	60
2192-119	0	0	17	17	13	640	5	0	0	107	100
2192-120	0	0	17	14	37	836	8	13	0	135	30
2192-121	0	0	20	18	45	1200	8	0	0	155	150
2192-122	0	0	21	22	13	622	9	0	0	141	100
2192-123	0	0	19	16	21	446	7	16	0	115	150
2192-124	0	0	19	19	21	394	9	6	0	156	140
2192-125	0	0	13	16	11	596	8	10	0	173	50
2192-126	0	0	20	18	11	418	10	0	0	180	30
2192-127	0	0	20	19	32	391	10	20	0	67	60
2192-128	.6	1	10	7	46	325	4	15	1	81	270
2192-129	.7	0	26	32	76	1550	13	25	0	169	40
2192-130	0	0	17	31	95	548	22	58	0	39	70
2192-131	.3	0	16	14	17	451	19	0	0	61	90
2192-132	.1	0	16	15	17	405	12	5	0	116	100
2192-133	1.0	0	12	11	55	1890	12	27	0	150	170
2192-134	0	0	11	16	15	368	9	7	0	94	70
2192-135	0	0	12	19	12	571	9	0	0	163	150
2192-136	.7	0	12	2	175	66	3	10	0	42	420
2192-01	0	0	7	10	15	266	8	16	0	67	90
2192-02	.2	0	7	11	34	826	8	20	1	148	290
2192-03	0	0	17	17	18	429	6	0	0	82	80
2192-04	0	0	18	17	31	480	6	0	0	93	140
2192-05	0	0	12	14	28	360	8	3	0	79	60
2192-06	0	0	5	7	17	167	6	20	0	47	120
2192-07	0	0	9	13	33	1080	10	21	0	58	30
2192-08	0	0	10	12	26	315	8	11	0	102	60
2192-09	0	0	22	20	27	519	10	0	0	72	100
2192-10	0	0	20	17	121	746	12	21	0	137	100
2192-11	0	0	10	11	22	334	9	16	0	75	90
2192-12	.1	0	13	15	20	708	7	0	0	102	110
2192-13	0	0	14	17	56	611	10	16	0	93	120
2192-14	.1	0	10	12	30	642	6	19	0	121	160
2192-15	.4	0	20	22	82	964	8	3	0	97	10
2192-16	0	0	18	18	46	863	8	6	0	162	40
2192-17	.5	0	7	13	24	738	4	0	0	65	30
2192-18	.9	0	10	11	315	1120	6	11	0	68	320

REV

COMPANY: ESSO MINERALS
PROJECT No: REV 2122
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-4345/P11+12
DATE: JULY 9, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-19	0	0	17	16	37	564	7	0	0	108	70
2192-20	0	0	12	16	27	507	7	7	0	80	80
2192-21	0	0	13	12	116	1050	6	14	0	93	110
2192-22	0	0	14	12	39	770	8	8	0	102	150
2192-23	0	0	16	13	36	607	9	20	0	142	170
2192-24	0	0	15	11	24	859	7	7	0	136	130
2192-25	0	0	18	20	31	1170	7	1	0	107	100
2192-26	0	0	11	12	18	303	6	0	0	94	60
2192-27	0	0	13	16	37	430	9	22	0	69	10
2192-28	.5	1	5	11	66	843	5	19	2	71	160
2192-29	.3	28	7	13	54	541	11	33	6	89	70
2192-30	.5	0	15	18	54	1520	13	22	0	188	50
2192-31	0	0	13	16	16	430	7	11	0	81	240
2192-32	0	0	12	18	25	1350	7	30	0	133	150
2192-33	.3	0	20	18	51	1490	6	13	0	102	160
2192-34	0	0	19	19	34	863	9	26	0	117	240
2192-35	0	0	23	24	40	1000	8	0	0	74	140
2192-36	0	0	13	20	41	980	13	19	0	297	110
2192-37	0	0	10	18	29	469	9	16	0	83	80
2192-38	0	0	15	22	40	935	9	16	0	72	70
2192-39	0	0	13	20	25	973	8	13	0	135	130
2192-40	0	0	12	19	30	415	8	7	0	149	40
2192-41	0	0	20	19	67	1200	8	4	0	188	80
2192-42	0	0	20	18	56	937	7	0	0	131	60
2192-43	.4	0	11	11	256	961	5	11	0	114	250
2192-44	.3	0	20	21	36	693	7	0	0	114	150
2192-45	.7	0	14	16	165	499	6	13	0	152	290
2192-46	.2	0	11	18	20	420	3	0	0	94	70
2192-47	.4	0	10	25	42	1900	8	33	1	280	50
2192-48	1.0	0	14	12	511	1380	8	13	0	75	220
2192-49	0	0	10	8	15	329	4	1	0	38	160
2192-50	0	0	17	17	24	454	4	0	0	55	120
2192-51	0	0	24	16	28	699	9	11	0	81	120
2192-52	0	0	20	20	49	769	12	28	0	228	270
2192-53	0	0	20	42	102	1450	20	65	10	306	40
2192-54	0	0	21	25	69	1020	14	38	0	253	10
2192-55	0	0	20	22	39	839	10	14	0	120	210
2192-56	0	0	25	19	41	669	10	12	0	145	150
2192-57	0	0	20	24	57	652	10	11	0	151	120
2192-58	0	0	20	20	42	590	11	6	0	121	140
2192-59	0	0	26	37	102	1550	20	58	4	289	130
2192-60	0	0	20	19	39	759	11	17	0	105	20
2192-61	0	0	18	18	34	741	11	23	0	87	5
2192-62	0	0	14	18	26	738	8	14	0	65	5
2192-63	0	0	15	17	28	690	10	20	0	70	270
2192-64	.7	0	12	12	26	3250	6	18	0	96	60
2192-65	.1	0	19	16	38	588	7	9	0	129	80
2192-66	0	0	25	18	35	1380	6	0	0	374	140
2192-67	.4	0	16	11	182	1180	6	8	0	73	70
2192-68	0	0	16	15	23	336	3	0	0	82	120
2192-69	0	0	15	16	30	451	6	0	0	113	90
2192-70	0	0	9	13	21	853	7	13	0	107	70
2192-71	0	0	11	16	25	801	6	6	0	131	110
2192-72	.4	0	13	16	36	2320	7	23	0	79	290
2192-73	.5	0	11	15	217	793	6	9	0	104	80
2192-74	.3	0	14	13	194	604	7	7	0	115	100
2192-75	0	0	18	18	25	498	6	0	0	118	130
2192-76	.8	0	4	6	37	769	3	6	0	16	70
2192-77	.9	0	12	6	496	193	3	7	0	40	420
2192-78	.6	0	13	2	143	52	4	0	0	34	200

MY: ESSO MINERALS
JECT No: REV 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE No: 3-434S/P13+14
DATE: JULY 9, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-79	.9	0	13	3	94	186	7	6	0	54	90
2192-80	0	0	2	5	18	91	0	0	0	22	30
2192-81	0	0	11	15	20	462	5	0	0	139	60
2192-82	0	0	9	13	35	395	8	26	0	120	45
2192-83	0	0	20	17	13	494	6	0	0	104	40
2192-84	0	0	12	17	12	380	5	0	0	151	20
2192-85	0	0	8	13	10	287	3	0	0	87	5
2192-86	0	0	5	9	10	233	5	0	0	106	40
2192-87	0	0	11	14	14	409	7	8	0	86	50
2192-88	0	0	15	19	15	898	6	0	0	190	30
2192-89	0	0	23	17	20	1270	7	0	0	132	80
2192-90	0	0	11	12	17	178	5	0	0	73	50
2192-91	0	0	17	16	25	419	7	12	0	103	20
2192-92	0	0	21	25	17	663	5	0	0	104	40
2192-93	0	0	19	19	43	520	7	25	0	69	20
2192-94	0	0	24	22	33	370	8	21	0	84	40
2192-95	.1	0	18	20	13	607	5	0	0	122	60
2192-96	0	0	24	19	11	446	7	0	0	78	50
2192-97	.1	0	19	20	11	381	4	0	0	96	70
2192-98	0	0	20	16	32	467	8	24	0	82	60
2192-99	.2	0	13	21	11	488	5	0	0	92	70
2192-100	0	0	13	14	14	273	6	0	0	116	40
2192-101	0	0	15	18	16	477	8	0	0	102	50
2192-102	0	0	25	18	26	454	8	0	0	106	60
2192-103	0	0	32	24	19	472	8	0	0	106	70
2192-104	0	0	32	25	24	558	7	0	0	82	50
2192-105	.8	0	19	14	147	908	5	0	0	94	90
2192-106	.2	0	17	18	14	264	4	0	0	63	30
2192-107	0	0	22	24	29	659	9	0	0	155	30
2192-108	0	0	22	24	21	848	7	0	0	131	50
2192109	0	0	23	20	18	496	7	0	0	74	30
2192110	0	0	25	23	17	573	4	0	0	112	60
2192111	0	0	25	26	14	523	4	0	0	103	70
2192112	0	0	19	20	15	330	1	0	0	57	80
2192113	0	0	17	18	19	462	8	0	0	105	60
2192114	0	0	22	23	20	599	4	0	0	69	110
2192115	0	0	22	18	12	452	4	0	0	71	60

COMPANY: ESSO MINERALS
PROJECT No: REV 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:8E03) PAGE 1 OF 2
FILE No: 3-434/P5
DATE: JULY 9, 1983

(REPORT VALUES IN PPM)	AG	AS	CU	MO	PB	SB	ZN	BA	FE2O3	NA2O	SR	K2O
3L8376	1.0	0	17	2	0	0	34	444	30600	50000	280	4530
3L8377	.9	0	10	3	0	0	0	138	52100	80500	30	0
3L8378	1.0	0	15	6	0	0	0	150	52100	72100	158	0
3L8379	.6	0	105	5	0	0	41	414	117000	27500	862	3220
3L8380	.6	0	46	5	0	0	31	334	127000	26900	602	1000
3L8381	.3	0	29	5	0	0	34	1360	241000	98700	2050	20300
3L8382	.2	0	21	6	0	0	44	345	89000	49100	562	0
3L8383	.6	0	21	6	0	0	0	147	64900	78400	25	0
3L8384	1.0	0	11	4	0	0	58	853	247000	85600	1050	8330
3L8385	1.2	0	13	3	0	0	41	613	70900	21900	200	16300
3L8386	.3	0	120	3	0	0	38	468	120000	31700	462	9020
3L8387	.4	0	41	5	0	0	38	300	125000	32100	352	6580
3L8388	0	0	21	4	0	0	30	726	49000	51300	432	9220
3L8389	0	0	20	4	0	0	34	1240	64400	41400	392	17900
3L8390	.1	0	31	6	31	0	56	1160	73700	15700	230	24700
3L8391	.2	0	20	5	0	0	40	988	78200	36600	402	12200
3L8392	0	0	23	6	0	0	37	735	57400	41900	280	11000
3L8393	0	0	13	3	9	0	21	571	44500	37300	143	12400

COMPANY: ESSO MINERALS
PROJECT NO: REV 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:6E03) PAGE 2 OF 2
FILE No: 3-434/P5
DATE: JULY 9, 1983

(REPORT VALUES IN PPM)	RB
3L8376	34
3L8377	42
3L8378	29
3L8379	10
3L8380	6
3L8381	72
3L8382	54
3L8383	21
3L8384	83
3L8385	14
3L8386	11
3L8387	23
3L8388	77
3L8389	50
3L8390	108
3L8391	23
3L8392	25
3L8393	33

COMPANY: ESSO MINERALS
PROJECT No: REV 2152/KUTCHO 2102
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:8E23) PAGE 1 OF 2
FILE No: 3-4209
DATE: JULY [illegible], 1993

(VALUES IN PPM)	AG	AS	CU	MO	PB	SB	ZN	BA	FE2O3	K2O	NA2O	RB
3L ZL-8394	1.8	0	19	5	3	0	16	11	20200	900	113000	15
ZL-8395	1.0	0	19	9	23	0	58	437	40500	8800	41600	19
ZL-8396	1.5	18	30	8	33	0	39	494	19500	6800	49600	14
ZL-8397	1.3	0	20	2	13	0	24	654	6990	11100	42800	39
~~ZD-8513~~	1.1	373	1750	46	164	50	56	14	626000	2700	6470	26
ZD-8514	1.2	302	319	48	83	39	59	3	486000	0	665	2
ZD-8515	1.5	317	159	49	81	41	39	42	440000	0	5200	2
ZD-8516	1.1	468	129	87	110	64	70	23	701000	0	5010	3
ZD-8517	.1	254	395	38	83	37	45	71	385000	3500	12400	4

REV

COMPANY: ESSO MINERALS
PROJECT No: REV 2152/KUTCHO 2102
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:8E23) PAGE 2 OF 2
FILE No: 3-4209
DATE: JULY [illegible], 1993

(REPORT VALUES IN PPM)	SR
ZL-8394	70
ZL-8395	130
ZL-8396	97
ZL-8397	43
ZD-8513	158
ZD-8514	84
ZD-8515	99
ZD-8516	166
ZD-8517	197

COMPANY: ESSO MINERALS
PROJECT NO: FEV 2192
ATTENTION: D BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:GEO3) PAGE 1 OF 2
FILE NO: [illegible]
DATE: [illegible]

(REPORT VALUES IN PPM)	AS	AG	CU	MO	PB	SB	ZN	BA	FE203	K20	NA20	RB
[illegible]	[illegible]	77	77	15	25	11	67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	28	79	7	19	5	2	647	58100	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5	25	3	6	0	9	670	45400	5000	19100	14
3L-8398 (8398)	0	0	40	2	0	0	44	254	79200	5100	24600	[illegible]
3L-8399 (3L-8399)	0	0	25	0	0	0	35	316	87000	5900	34800	[illegible]
3L-8400	0	0	136	9	39	4	78	114	77800	1000	44600	[illegible]
3L-8401	0	0	14	1	4	0	74	322	16200	11200	54200	5
3L-8402	0	0	705	1	0	0	40	207	39600	5900	43200	3
3L-8403	.3	0	88	0	0	0	38	396	65300	9900	33200	11
3L-8404	0	0	154	14	57	8	77	110	92000	1900	26100	[illegible]
3L-8405	0	0	196	0	0	0	40	130	109000	1000	29100	[illegible]
3L-8406	.1	0	58	0	0	0	26	102	116000	800	27800	3
8776	.6	0	23	0	0	0	30	159	64100	2000	37900	5
8777	.2	0	33	0	0	0	56	199	56000	5800	43100	21
8778	0	0	4	1	0	0	48	195	31100	5000	43100	25
8779	0	0	30	0	0	0	21	153	90000	600	20900	17
8780	.4	0	29	0	0	0	43	150	77700	1000	41800	26
8781	.3	0	73	1	0	0	39	213	74500	3600	33600	23
8782	1.8	79	33	9	82	17	56	107	59000	2200	16000	18
8783	.6	0	59	0	0	0	17	134	78600	900	17300	46
8784	.6	0	30	0	0	0	14	150	63300	0	24000	3
8785	0	0	49	0	0	0	36	138	77900	0	30300	16
8786	0	0	36	0	0	0	61	253	74600	5900	28800	13
8787	0	0	10	0	0	0	65	172	51000	1100	32200	2
8788	0	0	43	0	0	0	23	133	61100	200	19900	2
8789	.1	0	1	5	25	3	109	162	33100	200	38800	3

COMPANY: ESSO MINERALS
PROJECT NO: FEV 2192
ATTENTION: D BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:GEO3) PAGE 2 OF 2
FILE NO: [illegible]
DATE: JULY [illegible]

(REPORT VALUES IN PPM)	SR
[illegible]	79
[illegible]	234
[illegible]	647
3L-8398	197
3L-8399	240
3L-8400	118
3L-8401	13
3L-8402	185
3L-8403	411
3L-8404	170
3L-8405	34
3L-8406	30
8776	82
8777	143
8778	79

JUL 25 1983 RECD

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

2192 c. 500

ANALYTICAL REPORT

Project ..... Rev 2192 ..... Date of report ..... July 23/83.

File No. ..... 3-520 ..... Date samples received ..... July 11/83.

Samples submitted by: ..... D.Bridge

Company: ..... Esso Minerals

Report on: ..... 32 HM ..... Geochem samples

..... Assay samples

Copies sent to:

1. Esso Minerals, Vancouver, B.C.
2. Esso Minerals, Watson Lake, Yukon
3.

Samples: Sieved to mesh ..... Ground to mesh .....

Prepared samples stored ☒ discarded ☐ HM

rejects stored ☐ discarded ☐

Methods of analysis: HM-Specific gravity flotation and routine geochem analysis.

Remarks: H137-H171 ; S 148-150

SPECIALISTS IN MINERAL ENVIRONMENTS

COMPANY: ESSO MINERALS
PROJECT No: REV-2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-520HM/P1+2
DATE: JULY 23, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
H-137	0	0	12	26	20	687	5	8	0	31	60
H-138	0	0	10	26	19	565	2	0	0	29	40
H-139	0	0	13	25	21	720	2	0	0	23	50
H-140	0	0	15	23	18	680	2	0	0	19	30
H-141	0	0	5	19	17	910	4	9	0	42	40
H-142	0	0	8	15	10	794	3	3	0	32	40
H-143	0	14	32	77	157	972	22	41	3	194	70
H-144	.1	0	31	74	139	995	19	30	0	163	90
H-145	.2	0	26	69	118	945	19	32	0	151	50
H-146	0	0	25	67	125	839	15	5	0	139	90
H-147	0	0	23	65	131	929	18	13	0	152	60
H-151	0	0	11	36	32	511	0	0	0	7	30
H-152	0	0	13	37	44	520	0	0	0	10	10
H-153	0	0	15	44	32	1080	0	0	0	26	20
H-154	0	0	11	33	28	468	0	0	0	13	40
H-155	0	0	11	34	30	505	0	0	0	15	30
H-156	.2	0	11	31	23	478	0	0	0	54	5
H-157	0	0	16	38	33	518	0	0	0	5	60
H-158	0	0	15	37	32	527	0	0	0	5	20
H-159	0	0	14	36	35	510	0	0	0	8	20
H-160	0	0	14	39	45	467	5	0	0	48	20
H-161	0	0	10	36	44	464	6	0	0	46	20
H-162	0	0	11	37	52	574	5	0	0	47	10
H-163	0	0	12	36	47	470	2	0	0	33	5
H-164	0	0	13	41	50	494	3	0	0	39	20
H-165	0	0	12	39	41	457	0	0	0	25	10
H-166	0	0	14	43	44	526	0	0	0	26	30
H-167	0	0	24	73	230	832	15	5	0	171	40
H-168	0	24	21	78	244	991	17	43	1	185	55
H-169	0	0	26	72	135	794	4	0	0	133	50
H-170	1.0	0	16	64	129	764	10	0	0	189	40
H-171	.9	0	12	56	107	676	10	0	0	155	70

COMP: Esso Minerals

PROJECT No.: Rev 2192

ATTENTION: D. Bridge

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

Non Mag Heavy Mineral

Fi. No. 3-520

DATE: July 23 1983.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Total Mag wt gm	Total non mag wt gm	Float wt. gm
H 137													3.86	17.44	400
138													4.32	19.76	400
139													4.38	20.18	400
140													4.38	17.86	400
141													4.18	9.90	400
142													4.16	16.62	400
143													3.46	8.34	400
144													4.64	12.78	400
145													3.20	12.86	400
146													2.62	12.84	400
147													1.68	8.58	400
151													32.24	49.26	400
152													10.94	31.14	400
153													1.06	25.24	400
154													14.40	32.34	400
155													18.60	46.78	400
156													7.52	47.12	400
157													33.58	69.98	400
158													14.22	38.56	400
159													22.88	50.72	400
160													4.22	12.96	400
161													5.88	19.40	400
162													5.54	19.20	400
163													6.14	27.40	400
164													4.10	21.28	400
165													33.34	25.98	400
166													4.64	40.50	400
167													0.80	12.98	400
168													0.90	14.70	500
H 169													1.36	30.74	400

CERTIFIED BY:

COMP. Esso Minerals

PROJECT No.: Rev 2192

ATTENTION: D. Bridge

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

Non Mag Heavy Mineral

Fi. No. 3-320

DATE: July 23 1983.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Total Mag wt gm	Total non mag wt gm	Floated wt, gm
H 170													1.40	34.72	.400
H 171													1.14	30.80	.400

JUL 25 1983 RECD

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

2192.C.500

ANALYTICAL REPORT

Project ..... Rev 2192 ..... Date of report ..... July 22/83.

File No. ..... 3-520 ..... Date samples received ..... July 11/83.

Samples submitted by: ..... D.Bridge

Company: ..... Esso Minerals

Report on: ..... 26 rocks (assay prep) 3 silt ..... Geochem samples

.....

..... 3 ..... Assay samples

.....

Copies sent to:

1. ..... Esso Minerals Canada, Vancouver, B.C.
2. ..... Esso Minerals Canada, Watson Lake, Yukon.
3. .....

Samples: Sieved to mesh ..... -80 silt ..... Ground to mesh ..... -100

Prepared samples stored ☒ discarded ☐

rejects stored ☒ discarded ☒ silt

Methods of analysis: ..... ICP-R Analysis. Assay Ag-Acid digestion-chemical analysis. Au-fire assay. Geochem ICP-S, Hg-Flameless, A.A.

Remarks: .....

.....

.....

SPECIALISTS IN MINERAL ENVIRONMENTS

COMPANY: ESSO MINERALS
PROJECT No: REV 2192
ATTENTION: D BRIDGE

MIN-EN LABS ICP REPORT
,05 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1Z
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 2
FILE No: 3-520R*
DATE: JULY 21, 1983

Rev.

(REPORT VALUES IN PPM)	AG	AS	CU	MO	PB	SB	ZN	BA	FE2O3	K2O	NA2O	RB
3D-8520	0	73	73	19	26	11	67	211	107000	900	3990	3
3D-8521	0	35	79	7	19	5	2	847	58100	44600	9150	210
3D-8522	0	5	25	3	6	0	0	670	45400	9000	19400	14
3L-8398	0	0	40	2	0	0	44	254	79200	5100	24600	10
3L-8399	0	0	25	0	0	0	35	316	87000	5700	34800	12
3L-8400	0	0	136	9	39	4	78	114	77800	1000	44600	13
3L-8401	0	0	14	1	4	0	74	322	16200	11200	54200	9
3L-8402	0	0	705	1	0	0	40	207	39600	5900	43200	3
3L-8403	.3	0	88	0	0	0	38	396	65300	9900	33200	10
3L-8404	0	0	154	14	57	8	77	110	92000	1900	26100	2
3L-8405	0	0	196	0	0	0	40	130	109000	1000	24100	4
3L-8406	.1	0	58	0	0	0	26	102	116000	800	27800	3
8776	.6	0	23	0	0	0	30	159	64100	2000	37900	9
8777	.2	0	33	0	0	0	56	199	96000	5800	43100	21
8778	0	0	4	1	0	0	48	195	31100	5000	43100	25
8779	0	0	30	0	0	0	21	158	90000	600	20900	17
8780	.4	0	29	0	0	0	43	150	77700	1000	41800	26
8781	.3	0	73	1	0	0	39	213	74500	3600	33600	23
8782	1.8	79	33	9	82	17	56	107	59000	2200	16000	18
8783	.6	0	59	0	0	0	17	134	78600	900	17300	46
8784	.6	0	30	0	0	0	14	150	63300	0	24000	3
8785	0	0	49	0	0	0	36	138	77900	0	30300	16
8786	0	0	36	0	0	0	61	253	74400	5900	28800	15
8787	0	0	10	0	0	0	65	172	51000	1100	32200	2
8788	0	0	43	0	0	0	23	133	61100	200	19800	2
8789	.1	0	1	5	25	3	109	162	33100	200	38800	3

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(REPORT VALUES IN PPM)	SR
3D-8520	49
3D-8521	234
3D-8522	647
3L-8398	197
3L-8399	240
3L-8400	118
3L-8401	13
3L-8402	185
3L-8403	411
3L-8404	170
3L-8405	34
3L-8406	30
8776	82
8777	143
8778	79
8779	267
8780	60
8781	67
8782	128
8783	98
8784	98
8785	78
8786	165
8787	69
8788	143
8789	37

Rev

COMPANY: ESSO MINERALS
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-5205
DATE: JULY 18, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
S-148	.1	0	9	23	70	601	9	10	0	121	50
S-149	.6	0	15	25	105	593	9	0	0	242	60
S-150	.4	0	9	22	138	378	8	4	0	80	90

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

~~E. Aiad~~

2192.C.500

ANALYTICAL REPORT

Project 2192 Date of report July 22/83.

File No. 3-558 Date samples received July 15/83.

Samples submitted by: D. Bridge

Company: Esso Minerals

Report on: 147 soils Geochem samples

..... Assay samples

Copies sent to:

1. Esso Minerals Canada, Vancouver, B.C.
2. Esso Minerals Canada, Watson Lake, Yukon.
3.

Samples: Sieved to mesh -80 Ground to mesh .....

Prepared samples stored ☒ discarded ☐

rejects stored ☐ discarded ☒

Methods of analysis: ICP-S Analysis, Hg-Fluorometric.

Remarks: 8192 - 172 to 318

SPECIALISTS IN MINERAL ENVIRONMENTS

COMPANY: ESSO MINERALS
PROJECT No: 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
5 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)990-5914 OR (604)988-4524

(ACT:SE03) PAGE 1 OF 1
FILE No: J-5585/P1+2
DATE: JULY 21, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-173	0	0	7	21	36	715	10	21	0	77	40
2192-174	0	0	12	19	47	641	9	30	0	107	60
2192-175	0	0	22	24	79	844	13	33	0	197	80
2192-176	0	0	8	16	21	556	6	8	0	107	50
2192-177	0	0	16	21	32	559	9	20	0	105	70
2192-179	0	0	14	21	20	1000	7	7	0	104	60
2192-179	0	0	18	22	26	695	10	4	0	70	50
2192-180	0	0	18	19	13	462	11	3	0	68	40
2192-181	0	0	11	17	30	858	9	15	0	67	60
2192-182	0	0	10	22	26	1500	11	18	0	143	50
2192-183	0	0	12	19	54	895	10	40	0	149	90
2192-184	0	0	12	16	16	648	10	0	0	55	70
2192-185	0	0	13	21	45	613	12	39	0	134	10
2192-186	0	0	14	32	33	1200	13	26	0	83	30
2192-187	0	0	17	22	25	675	11	0	0	73	60
2192-188	0	0	20	28	23	755	11	0	0	86	50
2192-189	0	0	15	19	19	485	9	0	0	62	40
2192-190	0	0	20	23	23	648	13	5	0	97	60
2192-191	0	0	20	26	18	1360	8	0	0	162	80
2192-192	0	0	23	29	27	881	10	0	0	121	40
2192-193	0	0	11	20	29	405	10	17	0	78	90
2192-194	0	0	24	29	89	1110	12	18	0	226	70
2192-195	0	0	26	30	29	890	11	0	0	182	110
2192-196	0	0	13	23	36	630	12	29	0	66	30
2192-197	0	0	17	18	36	1340	13	20	0	254	70
2192-198	0	0	22	23	35	746	16	37	4	80	30
2192-199	0	0	20	28	18	809	13	0	0	88	40
2192-200	0	0	22	22	22	1740	12	0	0	99	70
2192-201	0	0	13	24	24	753	8	0	0	48	20
2192-202	0	0	14	22	35	432	11	19	0	106	10
2192-203	0	0	22	21	29	486	15	3	1	149	70
2192-204	0	0	13	25	21	1180	13	0	0	55	50
2192-205	0	0	19	27	49	995	12	37	0	107	40
2192-206	0	0	13	23	23	513	13	0	0	41	140
2192-207	0	0	18	19	32	522	15	31	4	89	70
2192-208	0	0	27	29	85	924	14	7	0	183	50
2192-209	0	0	20	25	34	970	11	12	0	107	120
2192-210	0	0	26	23	33	1110	11	0	0	146	80
2192-211	0	0	16	23	30	871	10	6	0	99	90
2192-212	0	0	16	20	21	669	10	12	0	80	80
2192-213	0	0	13	24	27	926	10	24	0	103	60
2192-214	0	0	10	22	16	363	5	0	0	44	100
2192-215	0	0	25	22	18	508	11	0	0	42	110
2192-216	0	0	16	25	24	1090	11	12	0	132	90
2192-217	.3	0	7	12	13	220	7	0	0	45	100
2192-218	0	0	26	20	111	624	16	63	6	113	120
2192-219	0	0	26	24	26	818	13	0	0	73	80
2192-220	0	0	29	30	23	772	16	0	0	91	40
2192-221	0	0	20	20	20	385	14	0	0	57	50
2192-222	0	0	23	25	33	1310	15	25	0	127	40
2192-223	0	0	24	24	35	1420	15	9	0	84	90
2192-224	0	0	18	24	28	1170	13	20	0	183	50
2192-225	0	0	17	26	17	710	16	0	0	107	60
2192-226	0	0	17	26	46	1240	16	29	0	138	40
2192-227	0	0	20	22	34	591	17	36	10	92	70
2192-228	0	0	25	29	26	855	15	0	0	150	60
2192-229	0	0	32	35	43	975	16	0	0	114	40
2192-230	0	0	25	31	47	1070	17	35	0	214	70
2192-231	0	0	19	20	32	357	18	27	2	66	80
2192-232	0	0	31	29	24	524	15	10	0	52	110

COMPANY: ESSO MINERALS
PROJECT No: 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
[illegible]5 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:SED3) PAGE 1 OF 1
FILE No: 3-5585/P3+4
DATE: JULY 22, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CD	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-233	0	0	33	26	23	719	14	7	0	58	120
2192-234	0	0	16	21	45	477	11	9	0	97	110
2192-235	0	0	23	25	36	1290	11	18	0	122	100
2192-236	0	0	15	16	18	316	7	0	0	62	130
2192-237	0	0	23	29	41	1670	14	23	0	115	40
2192-238	0	0	15	16	26	519	7	0	0	133	20
2192-239	0	0	15	20	28	708	11	19	0	41	90
2192-240	.1	0	15	24	24	1650	11	1	0	167	30
2192-241	0	0	8	19	22	719	7	0	0	172	20
2192-242	0	0	11	16	14	523	9	0	0	117	70
2192-243	0	0	13	20	20	485	6	0	0	54	80
2192-244	0	0	33	28	21	606	12	0	0	70	60
2192-245	0	0	15	17	25	429	13	19	0	49	50
2192-246	0	0	22	21	37	1150	11	19	0	124	70
2192-247	0	0	16	17	17	381	9	0	0	47	60
2192-248	.3	0	14	15	22	781	10	14	0	140	50
2192-249	.1	0	13	24	46	944	10	26	0	75	10
2192-250	0	0	6	6	13	96	4	11	0	23	40
2192-251	.3	0	18	17	73	1240	13	25	4	82	230
2192-252	0	0	17	16	25	747	12	24	1	92	30
2192-253	0	0	22	20	37	908	12	29	0	145	60
2192-254	0	1	15	16	36	298	12	33	5	89	30
2192-255	.8	0	19	25	27	1030	15	30	0	71	70
2192-256	0	0	50	36	64	1850	25	40	9	122	190
2192-257	0	0	32	24	41	835	16	23	5	88	120
2192-258	0	0	17	15	14	283	9	0	0	43	160
2192-259	0	0	19	19	17	1130	10	14	0	182	110
2192-260	.3	0	7	18	16	402	7	0	0	28	150
2192-261	0	0	9	20	20	493	10	0	0	54	80
2192-262	.4	0	16	21	16	442	11	0	0	61	100
2192-263	0	0	23	23	21	982	10	0	0	113	60
2192-264	0	0	18	16	60	1250	7	7	0	71	150
2192-265	0	0	16	15	27	402	5	0	0	49	140
2192-266	0	0	19	17	26	828	9	0	0	113	120
2192-267	0	0	6	12	13	494	5	0	0	56	160
2192-268	0	0	26	17	14	488	13	0	0	73	100
2192-269	0	0	26	21	22	1820	10	0	0	138	110
2192-270	0	0	29	28	37	2820	12	3	0	138	60
2192-271	0	0	25	22	39	511	13	8	0	75	70
2192-272	0	0	25	26	51	1300	10	15	0	135	40
2192-273	0	0	23	28	53	1830	14	16	0	121	80
2192-274	0	0	25	29	53	1860	14	11	2	123	1500
2192-275	0	0	14	29	33	1020	12	20	0	85	50
2192-276	0	0	26	29	26	1060	10	0	0	85	70
2192-277	0	0	23	26	41	1010	12	21	0	114	30
2192-278	0	0	34	35	72	1810	15	13	0	219	100
2192-279	0	0	17	24	33	684	9	0	0	110	40
2192-280	0	0	13	24	22	585	5	0	0	67	50
2192-281	0	0	42	30	67	716	17	0	0	164	70
2192-282	0	0	29	23	53	440	11	17	0	128	90
2192-283	0	0	42	28	74	681	19	30	0	181	80
2192-284	0	0	13	15	22	258	7	0	0	45	40
2192-285	0	0	20	24	42	473	14	11	0	102	30
2192-286	0	0	23	23	23	577	8	0	0	137	60
2192-287	0	0	15	20	21	651	7	0	0	121	20
2192-288	0	0	18	20	27	446	10	8	0	117	30
2192-289	0	0	20	17	28	351	7	0	0	103	80
2192-290	0	0	25	24	31	716	12	2	0	231	50
2192-291	0	0	21	23	29	787	10	8	0	120	60
2192-292	0	0	17	21	28	740	9	10	0	124	40

: ESSO MINERALS
PROJECT No: 2192
ATTENTION: D. BRIDGE

MIN-EN LABS ICP REPORT
05 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

FILE No: 3-5565/PS
DATE: JULY 21, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-293	0	0	15	20	28	1000	6	0	0	152	40
2192-294	0	0	28	27	61	1120	12	4	0	148	70
2192-295	0	0	23	22	48	875	12	7	0	163	80
2192-296	0	0	20	19	30	570	8	5	0	167	140
2192-297	0	0	23	25	40	994	10	0	0	243	70
2192-298	0	0	31	24	41	855	15	17	0	220	90
2192-299	0	0	26	22	49	772	12	26	1	189	110
2192-300	0	0	17	19	28	281	10	17	0	125	30
2192-301	0	0	14	19	44	378	11	31	0	121	50
2192-302	0	0	14	22	57	375	14	30	0	126	40
2192-303	0	0	38	20	55	847	12	16	0	189	130
2192-304	0	0	21	21	24	764	10	0	0	172	30
2192-305	.1	0	29	31	43	1130	8	0	0	169	40
2192-306	.2	0	28	25	71	1450	10	18	0	275	70
2192-307	0	0	14	29	34	743	7	0	0	119	50
2192-308	0	0	19	23	17	707	9	0	0	59	20
2192-309	0	0	18	27	59	950	11	15	0	97	120
2192-310	0	0	34	29	82	1130	13	33	0	119	10
2192-311	0	0	30	26	46	685	12	3	0	172	40
2192-312	.2	0	7	24	14	887	0	0	0	146	10
2192-313	0	0	15	21	22	2950	9	0	0	35	20
2192-314	0	0	8	18	16	504	6	0	0	30	190
2192-315	0	0	15	19	65	378	8	12	0	63	40
2192-316	0	0	11	17	19	312	6	0	0	84	120
2192-317	0	0	20	20	19	1260	10	0	0	161	70
2192-318	0	0	27	28	68	895	10	0	0	173	70
2192-172	0	0	21	22	34	920	7	10	0	70	90

AUG 19 1983

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

E. Aird
2192

ANALYTICAL REPORT

Project REV 2192 Date of report Aug. 18/83

File No. 3-674 Date samples received Aug. 2/83

Samples submitted by: Dane Bridge

Company: Esso Minerals Canada

Report on: 309 soils Geochem samples

Assay samples

Copies sent to:

1. Esso Minerals, Vancouver, B.C.
2. Esso Minerals, Stewart, B.C.
3.

Samples: Sieved to mesh -80 Ground to mesh

Prepared samples stored ☒ discarded ☐

rejects stored ☒ discarded ☐

Methods of analysis: Esso ICP-S and Hg.

Remarks:

SPECIALISTS IN MINERAL ENVIRONMENTS

COMPANY: ESSO MINERALS
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-674S/P1+2
DATE: AUGUST 11, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-319	0	0	14	10	28	289	6	4	0	74	70
2192-320	0	0	26	16	72	1620	8	16	4	184	270
2192-321	0	0	22	14	36	840	4	0	0	118	80
2192-322	0	0	23	16	62	756	5	1	0	103	70
2192-323	0	0	24	17	94	777	5	4	0	139	120
2192-324	0	0	21	18	246	983	7	10	0	80	180
2192-325	0	0	30	21	33	718	4	0	0	121	60
2192-326	0	0	19	13	55	728	4	0	0	122	80
2192-327	0	0	27	24	33	771	8	19	5	51	90
2192-328	0	0	22	16	82	673	7	11	0	98	110
2192-329	0	0	21	19	36	645	5	0	0	34	120
2192-330	0	0	22	14	96	324	6	0	0	141	160
2192-331	0	0	33	23	21	531	4	0	0	81	70
2192-332	0	0	28	18	19	373	7	0	0	65	80
2192-333	0	0	17	12	43	940	4	7	1	165	65
2192-334	0	0	24	18	90	838	7	3	0	117	80
2192-335	0	0	25	16	98	864	7	3	2	147	60
2192-336	0	0	28	17	22	414	4	0	0	101	75
2192-337	0	0	28	18	33	420	9	19	6	118	40
2192-338	0	0	32	19	22	954	3	0	0	71	120
2192-339	0	0	5	3	14	146	2	0	0	20	100
2192-340	0	0	22	14	21	243	4	0	0	107	80
2192-341	0	0	20	21	21	2060	5	0	0	60	70
2192-342	0	0	35	20	23	1190	4	0	0	42	130
2192-343	0	0	18	11	25	565	5	0	0	28	150
2192-344	0	0	31	22	14	656	3	0	0	94	110
2192-345	0	0	34	23	65	1150	3	0	0	160	80
2192-346	0	0	23	18	16	532	5	0	0	88	120
2192-347	.7	0	13	6	67	981	2	3	3	28	160
2192-348	0	0	18	11	40	291	4	0	0	64	140
2192-349	0	0	29	27	44	4730	9	0	0	675	80
2192-350	0	0	29	23	131	954	3	0	0	125	150
2192-351	0	0	12	13	10	316	3	0	0	88	70
2192-352	0	0	28	16	25	455	8	0	0	95	35
2192-353	0	0	16	9	19	782	7	17	10	153	100
2192-354	0	0	35	18	42	1120	10	5	8	181	75
2192-355	0	0	29	16	57	831	7	18	9	189	150
2192-356	0	0	25	16	78	851	9	0	1	105	120
2192-357	0	0	23	15	22	604	9	0	0	167	105
2192-358	0	0	35	21	75	1030	6	0	0	220	90
2192-359	0	0	26	15	26	765	8	0	0	77	75
2192-360	0	0	21	12	17	341	7	0	0	47	150
2192-361	0	0	21	11	18	457	7	0	0	44	80
2192-362	0	0	33	15	187	719	7	0	0	63	175
2192-363	0	0	18	11	21	438	5	0	0	72	140
2192-364	0	0	26	18	26	778	4	0	0	60	125
2192-365	0	0	27	16	32	785	4	0	0	84	80
2192-366	0	0	36	20	74	1100	7	0	0	276	100
2192-367	0	0	30	20	228	883	7	0	0	106	95
2192-368	0	0	16	11	19	319	4	0	0	56	130
2192-369	0	0	32	18	32	688	9	0	3	119	165
2192-370	0	0	24	13	16	484	6	0	0	79	115
2192-371	0	0	25	16	25	532	6	0	0	97	90
2192-372	0	0	24	15	20	438	4	0	0	102	180
2192-373	0	0	29	15	22	655	4	0	0	107	160
2192-374	0	0	31	18	25	407	8	0	0	73	95
2192-375	0	0	20	16	15	476	7	0	0	131	110
2192-376	0	0	27	15	38	478	4	0	0	69	85
2192-377	0	0	37	23	36	1240	3	0	0	109	120
2192-378	0	0	29	20	29	826	9	0	0	97	90

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
. WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GEO3) PAGE 1 OF 1
FILE No: 3-6748/P3+4
DATE: AUGUST 16, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-379	0	0	27	18	64	877	4	0	0	94	140
2192-380	0	0	22	12	139	459	2	0	0	62	115
2192-381	0	0	27	16	63	873	4	0	0	150	130
2192-382	0	0	31	18	20	476	10	0	0	85	150
2192-383	0	0	32	16	178	1210	8	0	9	152	200
2192-384	0	0	29	16	64	589	7	0	0	102	140
2192-385	0	0	27	19	82	1390	6	0	0	182	125
2192-386	0	0	33	16	236	1120	7	0	2	68	140
2192-387	0	0	27	18	68	992	5	0	0	128	100
2192-388	0	0	33	19	54	457	11	21	11	204	160
2192-389	0	0	22	11	20	890	8	7	3	135	150
2192-390	0	0	23	15	30	881	6	0	0	114	95
2192-391	0	0	24	19	17	1040	7	0	0	64	110
2192-392	0	0	22	17	14	513	7	0	0	55	120
2192-393	0	0	20	14	18	383	6	0	0	53	50
2192-394	.3	0	31	16	176	878	11	20	11	96	180
2192-395	0	0	25	20	29	1550	6	0	0	140	130
2192-396	.2	0	24	13	97	3280	6	6	5	93	145
2192-397	0	0	18	9	58	865	4	0	2	113	130
2192-398	.5	0	11	4	150	374	2	2	1	18	105
2192-399	0	0	25	9	345	488	5	0	4	76	220
2192-400	0	0	16	6	60	538	7	0	1	74	150
2192-401	0	0	22	13	92	804	10	4	2	77	150
2192-402	0	0	22	12	98	531	5	0	2	118	110
2192-403	0	0	22	13	67	1010	5	0	1	117	90
2192-404	.7	0	10	6	88	684	2	0	0	30	150
2192-405	0	0	27	19	380	750	5	0	0	85	95
2192-406	0	0	28	17	21	677	4	0	0	117	60
2192-407	0	0	26	15	24	643	5	0	0	105	150
2192-408	0	0	27	18	22	1000	7	0	0	114	170
2192-409	0	0	24	16	33	583	5	0	0	81	80
2192-410	0	0	24	14	33	537	6	0	0	92	110
2192-411	0	0	27	15	23	418	6	0	0	59	140
2192-412	0	0	25	12	34	313	5	0	0	80	70
2192-413	0	0	35	19	131	646	9	11	9	131	150
2192-414	0	0	25	16	71	630	7	0	0	128	105
2192-415	0	0	28	17	89	453	4	0	0	77	70
2192-416	0	0	20	10	115	433	4	2	4	112	115
2192-417	0	0	33	17	161	514	7	0	1	105	130
2192-418	0	0	32	20	60	648	10	0	0	100	80
2192-419	0	0	25	17	86	601	8	0	0	124	70
2192-420	0	0	26	13	107	606	6	0	2	170	130
2192-421	0	0	25	15	72	725	7	0	1	111	60
2192-422	0	0	29	16	90	1130	8	0	2	234	140
2192-423	0	0	31	19	145	882	9	7	8	204	70
2192-424	0	0	17	16	20	566	4	0	0	104	80
2192-425	0	0	16	11	13	301	3	0	0	68	80
2192-426	0	0	22	14	18	364	5	0	0	93	90
2192-427	0	0	24	12	34	416	6	0	3	97	170
2192-428	0	0	17	11	17	285	5	3	0	46	110
2192-429	0	0	26	17	24	1060	6	0	0	116	70
2192-430	0	0	16	7	18	191	4	0	0	41	90
2192-431	0	0	15	10	17	213	4	0	0	43	110
2192-432	0	0	34	17	87	874	6	2	6	217	120
2192-433	0	0	19	9	36	325	4	0	0	114	120
2192-434	0	0	27	13	121	584	5	0	0	157	130
2192-435	0	0	30	14	109	723	6	0	4	170	80
2192-436	0	0	31	17	166	688	7	0	3	143	135
2192-437	0	0	22	15	31	391	8	1	0	92	70
2192-438	0	0	30	15	142	855	10	0	4	89	160

COMPANY: ESSO MINERALS
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
3 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-6745/P5+6
DATE: AUGUST 11, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-439	0	0	29	15	166	792	8	0	0	180	150
2192-440	0	0	28	16	131	843	6	0	0	180	130
2192-441	0	0	28	15	82	772	9	0	2	176	150
2192-442	0	0	23	17	30	566	6	0	0	107	100
2192-443	0	0	29	18	37	815	7	2	2	146	140
2192-444	0	0	22	13	28	488	5	0	0	108	85
2192-445	0	0	21	14	24	450	5	0	0	106	160
2192-446	0	0	23	13	38	295	6	0	0	94	80
2192-447	0	0	26	15	49	815	4	0	0	126	170
2192-448	0	0	25	13	50	696	4	0	0	127	180
2192-449	0	0	35	17	72	501	10	0	0	115	120
2192-450	0	0	33	20	105	749	5	0	0	114	250
2192-451	0	0	26	15	106	761	5	8	3	149	190
2192-452	0	0	29	17	81	927	4	0	0	148	110
2192-453	0	0	30	19	61	1230	4	0	0	202	120
2192-454	0	0	29	14	62	1050	7	0	0	93	120
2192-455	0	0	27	17	31	766	5	0	0	77	170
2192-456	0	0	25	16	52	653	7	0	0	95	145
2192-457	0	0	25	17	33	949	7	0	0	108	150
2192-458	0	0	29	16	81	823	8	0	0	156	140
2192-459	0	0	28	14	170	873	6	0	0	151	190
2192-460	0	0	25	12	15	241	3	0	0	37	120
2192-461	0	0	24	15	24	490	5	0	0	80	110
2192-462	0	0	28	12	30	446	7	0	0	164	225
2192-463	0	0	19	12	17	254	2	0	0	90	180
2192-464	0	0	15	9	14	375	2	0	0	65	70
2192-465	0	0	29	13	59	700	6	0	0	109	105
2192-466	0	0	32	16	65	659	6	0	1	93	200
2192-467	0	0	23	15	45	1000	5	0	0	99	220
2192-468	0	0	24	14	19	600	4	0	0	71	130
2192-469	0	0	26	17	54	804	5	0	0	101	90
2192-470	0	0	30	16	45	832	3	0	0	98	150
2192-471	0	0	25	15	36	841	2	0	0	150	100
2192-472	0	0	25	17	18	534	4	0	0	128	130
2192-473	0	0	20	13	66	2090	13	3	0	91	180
2192-474	0	0	28	15	23	593	7	0	0	61	120
2192-475	0	0	32	17	133	601	9	0	0	101	110
2192-476	0	0	32	13	192	337	9	0	2	157	190
2192-477	0	0	32	16	53	723	7	0	0	98	190
2192-478	0	0	26	14	80	791	3	1	3	108	210
2192-479	0	0	26	14	43	643	1	0	0	50	110
2192-480	0	0	28	21	111	531	3	0	0	57	150
2192-481	0	0	25	22	93	1070	6	4	0	82	95
2192-482	0	0	33	21	64	1020	5	0	0	185	70
2192-483	0	0	28	19	31	734	2	0	0	107	90
2192-484	0	0	28	22	59	1030	6	5	0	88	70
2192-485	0	0	32	20	87	755	3	0	0	63	170
2192-486	0	0	30	21	28	1170	1	0	0	77	90
2192-487	0	0	29	23	43	966	6	14	0	111	200
2192-488	0	0	25	14	68	982	3	0	0	125	160
2192-489	0	0	21	20	28	842	7	0	0	119	150
2192-490	0	0	24	17	37	841	4	0	0	73	130
2192-491	0	0	23	18	96	558	5	0	0	63	170
2192-492	0	0	21	21	29	1230	6	0	0	94	80
2192-493	0	0	28	19	103	837	4	0	0	77	120
2192-494	0	0	24	17	50	2250	6	0	2	76	220
2192-495	0	0	21	18	19	561	9	0	0	65	120
2192-496	0	0	20	19	29	463	7	0	0	84	140
2192-497	0	0	26	19	51	826	6	0	0	102	130
2192-499	0	0	27	30	45	630	5	0	0	52	40

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:SE03) PAGE 1 OF 1
FILE No: 3-6745/P7+8
DATE: AUGUST 18, 1993

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-499	0	0	12	11	27	224	6	0	0	58	95
2192-500	0	0	19	13	38	1120	3	0	0	130	50
2192-501	0	0	14	9	17	611	4	0	0	55	80
2192-502	0	0	19	8	58	596	5	0	0	53	110
2192-503	0	0	26	15	30	1240	4	0	0	155	100
2192-504	0	0	31	24	51	346	10	20	4	104	80
2192-505	0	0	18	17	52	290	16	26	6	97	110
2192-506	0	0	20	21	91	718	10	0	0	95	170
2192-507	.1	0	18	17	138	1490	8	9	1	46	180
2192-508	0	0	24	15	114	869	5	0	0	91	220
2192-509	0	0	22	14	81	656	4	0	0	70	150
2192-510	0	0	25	15	59	742	4	0	0	55	70
2192-511	0	0	31	20	64	524	6	0	0	89	110
2192-512	0	0	29	24	68	552	1	0	0	24	80
2192-513	0	0	27	16	56	742	6	0	0	68	60
2192-514	0	0	23	16	52	475	5	0	0	73	50
2192-515	1.2	0	13	11	68	663	12	30	0	64	150
2192-516	0	0	24	13	119	452	1	0	0	43	130
2192-517	0	0	25	13	176	481	4	0	0	53	150
2192-518	0	0	22	12	102	819	6	0	0	39	160
2192-519	0	0	24	18	75	1010	5	0	0	63	90
2192-520	0	0	31	21	29	629	6	0	0	61	140
2192-521	0	0	20	18	32	1070	5	0	0	129	80
2192-522	0	0	25	16	34	1100	6	0	0	78	110
2192-523	0	0	19	13	37	385	1	0	0	72	120
2192-524	0	0	27	14	77	904	3	0	0	138	160
2192-525	0	0	28	17	59	889	5	0	0	129	80
2192-526	0	0	29	21	52	947	3	0	0	124	90
2192-527	0	0	34	20	82	781	5	0	0	149	100
2192-528	0	0	26	15	54	830	6	0	0	130	120
2192-529	.1	0	22	10	71	540	5	2	3	80	125
2192-530	0	0	24	16	22	377	11	7	3	65	120
2192-531	0	0	19	12	26	274	5	0	0	62	145
2192-532	0	0	15	9	30	497	5	0	0	49	130
2192-533	0	0	14	8	30	300	3	0	0	83	30
2192-534	0	0	26	11	54	329	7	0	0	74	110
2192-535	0	0	32	15	101	706	3	0	0	128	200
2192-536	0	0	20	21	52	254	9	3	0	16	80
2192-537	0	0	21	16	48	267	8	6	0	28	65
2192-538	0	0	36	14	16	529	7	0	0	42	150
2192-539	0	0	21	17	33	336	7	6	0	49	50
2192-540	0	0	21	17	31	378	9	0	0	70	60
2192-541	0	0	23	17	32	448	7	0	0	69	60
2192-542	0	0	22	19	46	416	6	0	0	51	70
2192-543	0	0	24	20	30	415	8	12	0	69	100
2192-544	0	0	31	20	37	505	8	0	0	74	120
2192-545	0	0	36	21	20	596	4	0	0	27	95
2192-546	0	0	22	14	20	511	6	0	0	71	80
2192-547	0	0	30	14	30	382	6	0	0	84	130
2192-548	0	0	24	14	15	300	4	0	0	59	115
2192-549	0	0	36	21	82	805	9	0	0	148	50
2192-550	0	0	33	20	73	902	8	0	0	121	70
2192-551	0	0	32	20	56	949	6	0	0	221	95
2192-552	0	0	23	19	44	514	9	12	2	92	50
2192-553	0	0	30	16	61	540	8	12	6	96	190
2192-554	0	0	27	14	59	567	6	11	6	120	95
2192-555	0	0	22	19	40	709	7	17	3	71	60
2192-556	0	0	36	19	81	700	8	9	4	111	110
2192-557	0	0	27	18	30	489	10	0	0	88	100
2192-558	2.4	0	15	9	29	479	5	9	12	54	200

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
5 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-6748/P9+10
DATE: AUGUST 16, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-559	0	0	36	19	132	1000	15	0	0	239	190
2192-560	0	0	26	15	48	681	11	15	0	230	80
2192-561	.1	0	20	12	84	801	8	0	0	68	130
2192-562	.1	0	26	21	41	1090	10	0	0	140	160
2192-563	.1	0	20	19	14	733	9	0	0	128	140
2192-564	0	0	32	20	58	969	11	0	0	130	180
2192-565	.2	0	14	17	25	469	8	0	0	109	90
2192-566	.4	0	15	16	31	638	9	0	0	96	150
2192-567	0	0	27	17	96	809	12	16	0	186	250
2192-568	.3	0	23	17	109	664	12	6	0	143	130
2192-569	0	0	27	21	93	862	15	4	0	204	150
2192-570	.1	0	12	8	27	159	7	5	0	61	85
2192-571	0	0	21	15	93	414	13	10	0	136	145
2192-572	.2	0	19	12	62	586	10	0	0	103	80
2192-573	0	0	32	22	165	1000	12	0	0	235	70
2192-574	.5	0	19	15	127	786	8	0	0	213	170
2192-575	1.1	0	24	18	109	1450	10	0	0	122	200
2192-576	0	0	17	13	45	444	8	0	0	99	140
2192-577	.3	0	23	16	17	555	11	0	0	98	145
2192-578	0	0	28	21	35	607	13	0	0	201	80
2192-579	0	0	17	17	27	457	9	0	0	81	100
2192-580	.4	0	16	15	29	361	8	0	0	111	60
2192-581	0	0	17	20	31	646	10	0	0	73	50
2192-582	.5	0	26	20	127	788	14	5	0	116	175
2192-583	.2	0	25	14	46	1080	13	0	0	102	90
2192-584	.5	0	17	13	23	370	10	0	0	68	90
2192-585	0	0	19	17	48	304	13	10	0	84	45
2192-586	.3	0	19	19	55	509	10	3	0	93	115
2192-587	.2	0	17	17	21	317	7	0	0	51	180
2192-588	.2	0	29	21	21	556	13	0	0	71	85
2192-589	0	0	33	18	122	813	15	0	0	159	150
2192-590	.1	0	18	14	66	737	9	0	0	95	90
2192-591	0	0	25	17	13	344	10	0	0	54	135
2192-592	0	0	27	21	38	535	14	0	0	105	100
2192-593	0	0	24	19	28	434	11	0	0	81	40
2192-594	.2	0	22	18	17	360	11	0	0	54	110
2192-595	0	0	17	21	46	415	7	0	0	51	35
2192-596	.1	0	11	13	15	553	6	0	0	47	100
2192-597	0	0	16	8	17	201	6	0	0	26	120
2192-598	0	0	18	19	23	542	11	0	0	81	45
2192-599	0	0	19	12	74	471	7	0	0	71	120
2192-600	.4	0	10	14	18	758	5	0	0	40	60
2192-601	.4	0	21	20	103	1270	13	14	0	183	190
2192-602	.9	0	23	41	75	4070	18	28	0	130	80
2192-603	.2	0	23	20	31	1170	13	8	0	121	75
2192-604	.2	0	16	15	43	971	14	10	0	85	130
2192-605	0	0	19	11	16	349	12	10	0	82	110
2192-606	.2	0	24	26	23	1280	18	0	0	83	140
2192-607	.7	0	14	20	76	1150	10	35	0	82	120
2192-608	0	0	16	13	14	533	9	9	0	91	80
2192-609	0	0	18	14	66	675	10	19	0	89	150
2192-610	0	0	21	20	41	758	11	28	0	123	180
2192-611	.1	0	29	29	20	641	10	0	0	154	80
2192-612	0	0	19	24	25	569	12	0	0	77	100
2192-613	.6	0	22	20	30	837	9	0	0	85	80
2192-614	0	0	8	12	12	405	6	0	0	41	80
2192-615	.6	0	19	21	84	527	11	7	0	116	190
2192-617	.8	0	18	17	74	499	11	22	0	132	200
2192-618	.6	0	22	37	53	966	9	0	0	71	100
2192-619	.2	0	18	28	83	676	9	9	0	89	95

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
3 WEST 15th ST., NORTH VANCOUVER, B.C. V7M
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-6749/P11
DATE: AUGUST 16, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
2192-620	0	0	20	20	66	452	10	0	0	83	220
2192-621	0	0	19	15	13	268	4	0	0	53	170
2192-622	0	0	14	12	12	287	8	0	0	45	160
2192-623	0	0	13	11	9	245	3	0	0	38	110
2192-624	0	0	23	17	15	409	8	0	0	52	130
2192-625	.1	0	24	15	31	384	10	0	0	84	170
2192-626	0	0	25	14	15	341	9	0	0	91	95
2192-627	0	0	17	13	12	299	6	0	0	57	115
2192-628	0	0	27	16	23	511	10	0	0	108	100

SEP - 9 1983 RECD

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

~~CARD~~
2192

Project ..... Rev 2192 ..... Date of report ..... Sept.7/83.

File No. ..... 3-729 ..... Date samples received ..... August 8/83.

Samples submitted by: ..... D. Bridge

Company: ..... Esso Minerals

Report on: ..... 24 HM ..... Geochem samples

..... Assay samples

Copies sent to:

1. Esso Minerals, Vancouver, B.C.
2. Esso Minerals, Stewart, B.C.
3. .....

Samples: Sieved to mesh ..... Ground to mesh .....

Prepared samples stored ☒ discarded ☐

rejects stored ☐ discarded ☐

Methods of analysis: HM-Specific gravity flotation and routine geochem analysis. ICP-S Analysis.

Remarks: .....

SPECIALISTS IN MINERAL ENVIRONMENTS

COMPANY: Esso Minerals

PROJECT No.: Rev 2192

ATTENTION: D. Bridge

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

-10+20 mesh Heavy Mineral

File No. 3-729

DATE: Sept. 6, 1983.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Heated wt gm		total HM wt gm
H 6292													1.2		0.37
3.0													17.0		2.70
3.1													15.5		1.94
3.2													16.0		1.40
3.3													15.8		0.76
3.4													9.2		5.
3.5													17.8		2.24
3.6													13.5		0.14
3.7													13.0		0.88
3.8													15.2		1.04
3.9													7.8		0.56
4.0													9.5		2.70
4.1													15.2		1.26
4.2													18.8		0.58
4.3													20.0		1.12
4.4													15.0		0.49
4.5													6.5		0.58
4.6													14.2		0.89
4.7													11.0		0.
4.8													13.0		0.93
4.9													no sample		
5.0													21.0		1.01
5.1													12.0		0.58
H 6522													1.0		0.12

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192 -10+20 MESH
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-729HM20M
DATE: SEPTEMBER 5, 1983

REPORT VALUES IN PPM	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
H629	1.7	14	41	31	53	592	20	52	0	119	250
H630	1.8	30	20	40	52	676	24	57	0	106	55
H631	1.7	69	20	47	98	760	27	68	0	138	80
H632	2.9	75	24	58	101	761	33	60	0	172	95
H633	6.5	367	27	101	319	2230	77	171	48	413	13
H634	2.5	292	24	120	194	891	53	140	27	184	35
H635	1.9	171	21	54	153	879	40	116	19	297	45
H636	3.2	146	27	65	179	1609	46	151	19	407	NES
H637	2.3	321	23	63	193	1030	53	155	40	565	82
H638	1.9	242	24	69	126	1210	45	119	26	265	55
H639	4.1	261	25	98	165	1970	59	129	30	429	73
H640	1.7	52	21	41	42	816	23	62	0	100	10
H641	1.4	0	22	32	35	822	20	39	0	79	20
H642	2.2	0	21	38	32	674	27	31	0	104	45
H643	2.1	3	18	31	29	866	19	47	0	94	20
H644	2.4	46	21	38	55	1340	24	77	0	116	52
H645	2.8	0	26	35	23	992	20	62	0	77	38
H646	1.9	0	23	39	38	1210	22	49	0	103	58
H647	2.6	132	24	45	85	892	36	79	14	142	48
H648	2.5	0	32	36	40	1429	17	24	0	60	47
H649 M/S											
H650	1.9	0	19	33	46	1140	17	36	0	81	50
H651	3.7	5	24	74	313	2610	27	46	0	114	53
H652	4.4	0	29	61	160	1010	26	9	0	105	0

COMPA. Esso Minerals

PROJECT No.: Rev 2192

ATTENTION: D. Bridge

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

-20+40 mesh
Heavy Mineral

FI... No. 3-729

DATE: Sept. 6
1983.

Sample. Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	floated wt gm		total HM wt gm
H 6 2 9													20.0		6.15
3 0													12.5		3.42
3 1													7.0		0.94
3 2													13.2		2.40
3 3													6.5		0.92
3 4													20.0		10.[illegible]
3 5													8.8		1.99
3 6													6.0		0.86
3 7													16.0		2.70
3 8													8.0		1.47
3 9													4.0		0.56
4 0													20.0		7.55
4 1													8.0		1.05
4 2													7.5		0.66
4 3													15.0		2.60
4 4													7.5		0.49
4 5													1.6		0.25
4 6													4.5		0.54
4 4 7													20.0		2.[illegible]
4 8													20.0		0.33
4 9													10.2		1.79
5 0													14.0		3.10
5 1													9.8		1.34
H 6 5 2													20.0		3.45

CERTIFIED BY

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192(-20+40 MESH)
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
[illegible] WEST 15th ST., NORTH VANCOUVER, B.C. V7M [illegible]
(604)980-5814 OR (604)988-4524

(ACT:GE03) PAGE 1 OF 1
FILE No: 3-729HM
DATE: SEPTEMBER 7, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
H629	2.4	179	23	66	154	996	43	104	20	217	75
H630	2.4	196	19	57	254	979	41	101	21	207	80
H631	2.8	169	24	60	150	844	42	89	11	215	102
H632	3.1	178	23	63	154	926	43	102	14	263	110
H633	8.0	494	27	116	529	1090	95	193	68	589	190
H634	2.2	296	22	106	177	928	48	122	34	206	60
H635	2.9	229	25	78	176	993	48	117	23	308	50
H636	2.2	286	23	70	199	1320	56	119	37	417	42
H637	3.0	258	25	73	229	1140	51	146	32	434	110
H638	2.4	229	25	85	127	1140	41	110	25	293	80
H639	2.6	291	26	83	197	1180	61	198	44	472	69
H640	1.6	74	19	38	44	676	27	48	0	86	65
H641	1.5	75	19	45	55	687	24	65	1	120	70
H642	2.1	31	18	43	57	811	20	82	0	103	63
H643	1.5	55	19	35	41	749	25	76	6	104	65
H644	3.1	116	24	63	81	2890	40	89	7	128	76
H645	2.6	0	20	35	27	720	22	47	0	73	
H646	2.8	63	21	39	53	842	19	65	0	116	95
H647	2.1	119	24	50	71	796	38	98	11	130	70
H648	1.2	132	20	31	30	548	39	91	15	160	313
H649	1.7	0	21	33	44	924	14	31	0	86	55
H650	2.0	0	20	30	36	902	19	8	0	93	40
H651	2.8	78	24	57	250	1720	32	64	0	118	30
H652	2.6	63	19	46	126	755	26	44	0	115	35

COMP: Esso Minerals

PROJECT No.: Rev 2192

ATTENTION: D. Bridge

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

-40 mesh Heavy Mineral

FILE No. 3-729

DATE: Sept. 6 1983.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	floated wt gm		total HM wt gm
H 629													250		1.19
630													75		2.57
631													45		0.69
632													175		3.89
633													35		0.63
634													195		1.2
635													40		0.94
636													22		0.22
637													115		3.17
638													38		0.73
639													45		0.60
640													155		7.05
641													68		1.06
642													25		0.30
643													60		1.64
644													72		0.61
645													10		0.06
646													15		0.14
647													165		2.
648													250		0.95
649													55		2.10
650													42		1.80
651													72		1.86
H 652													250		13.02

CERTIFIED BY

COMPANY: ESSO MINERALS CANADA
PROJECT No: REV 2192(-40) MESH)
ATTENTION: DANE BRIDGE

MIN-EN LABS ICP REPORT
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

(ACT:SE03) PAGE 1 OF 1
FILE No: 3-729HM-40
DATE: SEPTEMBER 7, 1983

(REPORT VALUES IN PPM)	AG	AS	B	CO	CU	MN	MO	PB	SB	ZN	HG-PPB
H629	2.7	252	20	89	179	717	46	121	24	254	95
H630	3.9	793	24	74	196	933	43	104	20	235	85
H631	4.2	264	23	80	203	978	50	90	18	338	145
H632	4.0	259	25	81	199	927	51	113	23	326	75
H633	10.3	504	30	121	571	1270	106	232	61	692	538
H634	1.7	239	20	104	172	727	40	124	28	222	110
H635	2.8	302	21	112	175	871	46	127	35	235	97
H636	2.0	156	12	46	93	513	25	61	17	183	NES
H637	3.2	330	24	94	200	867	53	111	37	304	130
H638	3.0	288	23	123	158	875	51	118	29	228	65
H639	3.4	345	25	108	205	918	57	155	30	319	22
H640	2.1	79	20	44	43	427	22	57	0	75	65
H641	2.9	87	22	49	66	595	31	56	0	111	70
H642	1.0	25	10	24	41	307	14	39	0	55	300
H643	2.3	45	20	42	44	555	21	76	0	101	45
H644	2.4	136	22	61	94	1670	34	97	10	144	159
H645	.4	5	2	6	10	95	1	13	0	19	NES
H646	.7	44	7	19	20	212	9	35	0	43	NES
H647	2.7	251	25	66	105	553	42	159	25	140	85
H648	1.5	30	17	25	20	543	19	52	0	97	83
H649	2.1	39	15	32	97	865	20	53	0	83	65
H650	4.0	2	14	25	52	352	16	37	0	78	40
H651	2.2	32	15	32	39	621	17	26	0	73	50
H652	2.2	0	15	28	32	520	14	16	0	70	35

APPENDIX III

GEOPHYSICAL SURVEYS

THEORY AND PROCEDURES

APPENDIX

GEOPHYSICAL SURVEYS

THEORY AND PROCEDURES

MAGNETICS:

An EDA PPM 350 portable proton precession magnetometer was used. This instrument measures the total magnetic field strength, by measuring the frequency at which protons (hydrogen atoms) precess about the axis of the earth's magnetic field. The magnetic field strength, which is directly proportional to the frequency, is digitally displayed.

Readings were taken at 25 meter intervals along the survey lines. To correct time variations of the earth's magnetic field (diurnal), base stations were first established within the survey area. Readings were taken at these base stations at the beginning and end of each traverse. The difference in the readings at these base stations were linearly removed from the other readings along the traverse.

HLEM:

The Scintrex SE88 Genie EM system uses a portable transmitter consisting of two transmitting coils and power supply, and a receiver with signal detection electronics. The transmitter and receiver coils are normally maintained in the vertical axis co-planar mode, commonly referred to as the horizontal loop mode.

The transmitter simultaneously generates two alternating magnetic fields - one referred to as the "signal frequency" and the other as the "reference frequency". The resultant electromagnetic fields set up in the ground are detected by the receiver coil located at a fixed distance from the transmitter. The receiver measures the received "signal frequency" amplitude, Hs, and the received "reference frequency" amplitude, Hr. The value of (Hs/Hr-1) x 100 (referred to as "Ratio") is digitally displayed on the receiver.

The survey plotting point is considered to be at the mid-point of the transmitter-receiver separation (L). Readings were taken at station intervals of 1/2 L if no conductor was present and 1/4 L if a conductor was present.

GRAVITY

A Lacoste-Romberg Model G Geodetic Gravity Meter, with electronic readout and variable damping options was used. The internal measuring mechanism of this instrument consists of a weight supported by a zero-length spring. By measuring the force of attraction between the weight and the earth, the absolute value of gravity can be determined. This is done by nulling the instrument, such that the force exerted in the spring is proportional to the force exerted on the weight by the earth. The measurement of gravity is done by means of a calibrated scale. A reading off this scale is multiplied by a scale factor to give the value of gravity in milligals (1 gal = 1 cm/s^2). For presentation purposes, this value is then converted to gravity units (1 g.u. = 1/10 milligal).

Elevations along the lines were measured with a GDD Electronic Level Model B. This instrument consists of two pressure transducers connected by a fluid-filled flexible tube, and an electronic readout meter. The instrument measures elevation differences between points by the difference in liquid pressure measured at the transducers at both ends of the tube. This difference in pressure is then converted to an elevation difference and displayed digitally on the meter.

Gravity readings were taken at 25 meter intervals along the survey lines and corrected for drift, instrument height, elevation and latitude. Description of these corrections as well as the correction constants used can be found in the literature or in the field notes.

APPENDIX IV

STATEMENTS OF QUALIFICATION

CERTIFICATION

I, Melvin Lomenda of 210 Wascana Crescent S.E., Calgary, Alberta, certify that:

1. I am a graduate of the University of Manitoba (1969) with a B.Sc. (Honors) in geology, and a graduate of the University of Saskatchewan (1973) with an M.Sc. in geology.

2. Since 1969, I have worked as a geologist in the Yukon Territory, the Northwest Territories, British Columbia, Alberta, Saskatchewan, Ontario, and Quebec, and that I have been employed by Esso Resources Canada Limited in the Minerals Exploration Department since February, 1981.

3. The information in this report is based upon literature research, field mapping, and geochemical sampling.

4. I hold no direct or indirect interest in the property reported herein, nor do I expect to receive any.

M Lomenda

Melvin G. Lomenda

Date:

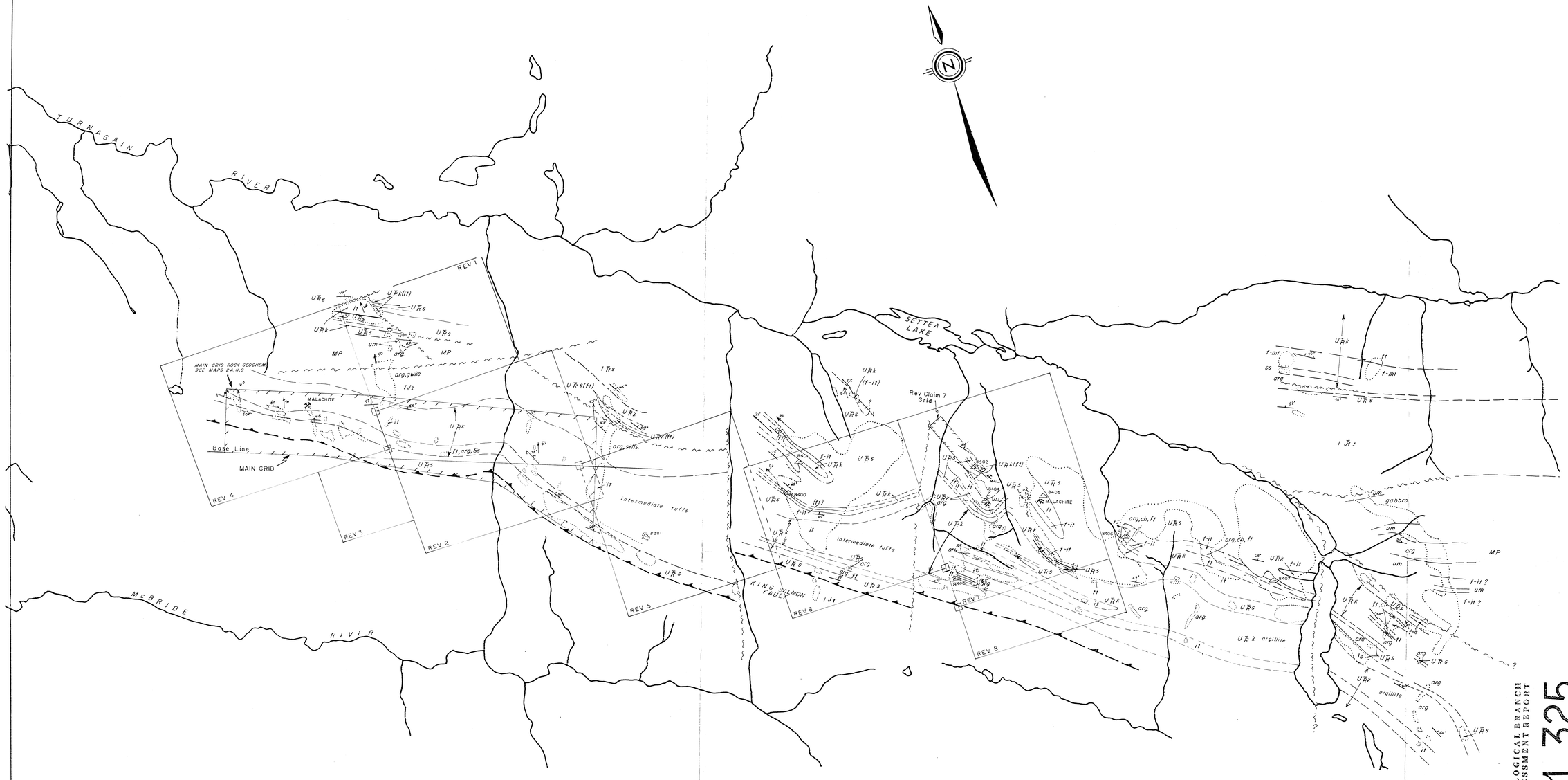
MGL/gf

STATEMENT OF QUALIFICATIONS

I attended the University of Waterloo, Waterloo, Ontario between 1975 - 1979 graduating with a B.Sc. (Honours) degree in Earth Sciences. From 1975 to 1979 I was employed during the summer months by Esso Minerals Canada to conduct Magnetic, Electromagnetic, Gravity and Induced Polarization surveys. Since graduating I have been employed by Esso Minerals as a geophysicist.

W. G. Cooper.

W. GORDON COOPER



N

JURASSIC

IJT Takwahoni Fm., greywacke, shale minor conglomerate and grit

IJs Inklin Fm. shale, siltstone, greywacke

TRIASSIC

URs Sinwa Fm. Grey recrystallized limestone

URk Kutcho Fm., felsic to intermediate tuffs and breccias, minor shale and volcaniclastics

PALEOZOIC

MP Cache Creek Group, serpentinized ultramafics, matic volcanics and intrusives, shale

- Geological boundary, defined
- approximate and assumed
- Fault
- Thrust Fault
- Bedding
- Foliation
- Lineation
- Overturned anticline
- Overturned syncline
- Outcrop
- Rock geochemical sample

ft Felsic tuff
it Intermediate tuff
mt Matic tuff
arg. argillite
ss sandstone
gwke greywacke
silts siltstone
um ultramafics
ch chert

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
A DIVISION OF ESSO RESOURCES CANADA LIMITED

GEOLOGY OF REV CLAIMS AREA

Project No. 2192 Mining Division LIARD

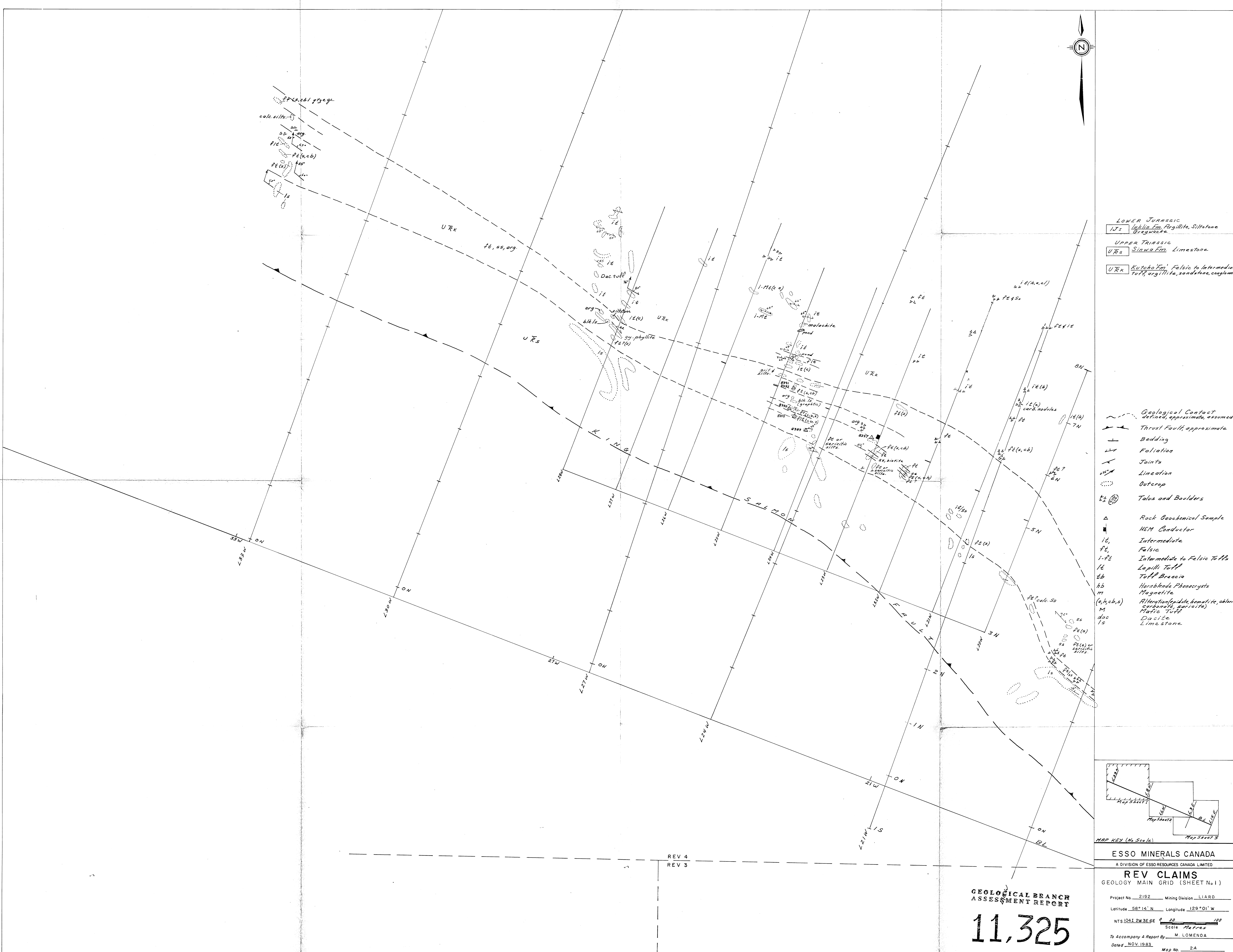
Latitude 58°16'N Longitude 129°01'W

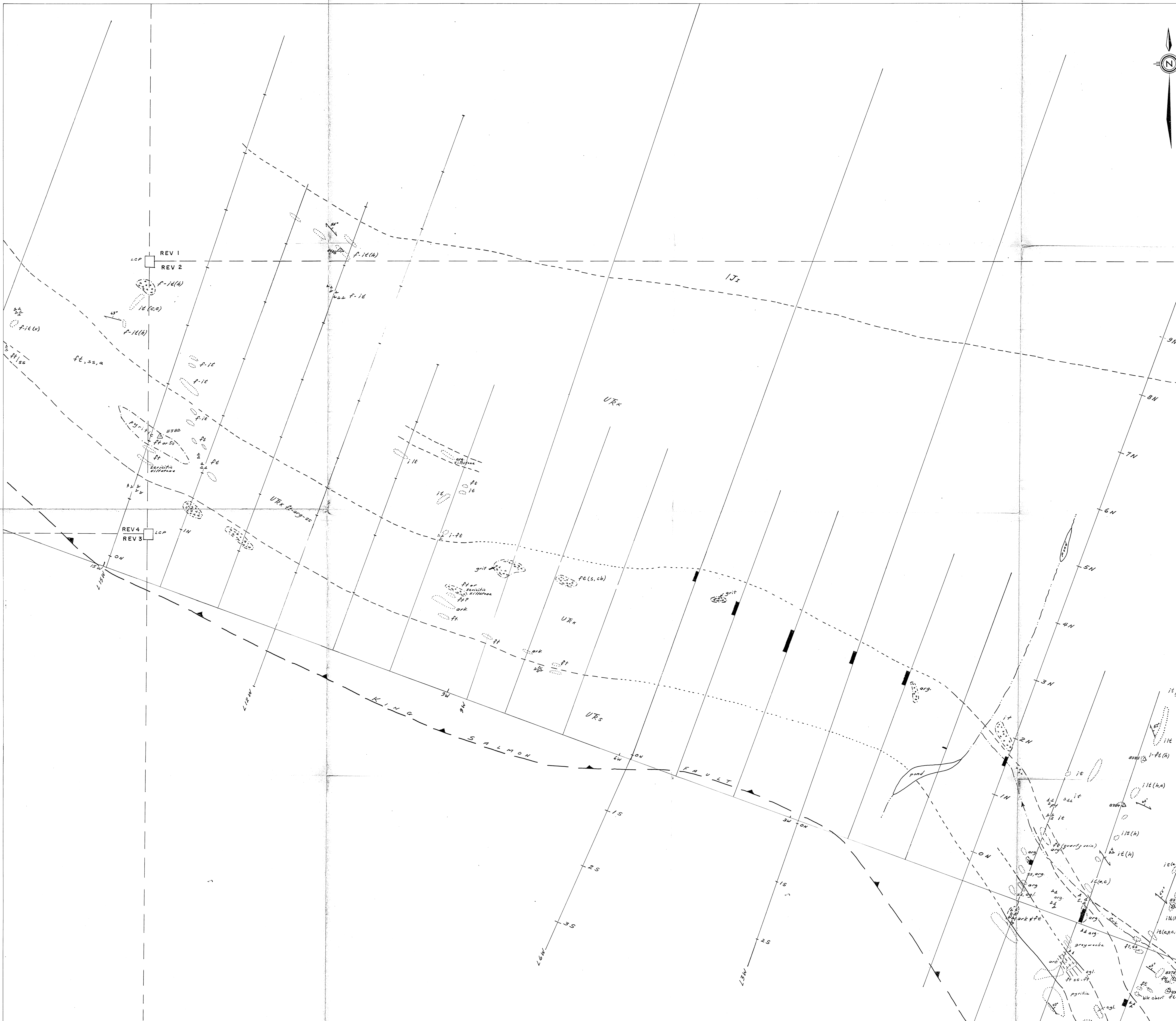
NTS 104I 2W,3E 0 150 Metres 750

To Accompany A Report By M. LOMENDA

Dated NOV. 1983

MAP No. 1


N
KING SALMON FAULT
UT̄RK
UT̄RS
REV 4
REV 3
LOWER JURASSIC
lJI Inklin Fm. Argillite, Siltstone Greywacke
UPPER TRIASSIC
UT̄RS Sinwa Fm. Limestone
UT̄RK Kutcho 'Fm' Felsic to Intermediate tuff, argillite, sandstone, conglomerate
Geological Contact defined, approximate, assumed
Thrust Fault, approximate
Bedding
Foliation
Joints
Lineation
Outcrop
Talus and Boulders
Rock Geochemical Sample
HEM Conductor
it, Intermediate
ft, Felsic
i-ft Intermediate to Felsic Tuffs
lt Lapilli Tuff
tb Tuff Breccia
hb Hornblende Phenocrysts
m Magnetite
(e,h,cb,s) Alteration (epidote, hematite, chlorite carbonate, saricite)
M Mafic Tuff
dac Dacite
ls Limestone
Map Sheet 1
Map Sheet 2
Map Sheet 3
MAP KEY (No Scale)
ESSO MINERALS CANADA
A DIVISION OF ESSO RESOURCES CANADA LIMITED
REV CLAIMS
GEOLOGY MAIN GRID (SHEET No. 1)
Project No. 2192 Mining Division LIARD
Latitude 58° 14' N Longitude 129° 01' W
NTS 104I 2W 3E 6E
0 20 100
Scale Metres
To Accompany A Report By M. LOMENDA
Dated NOV. 1983
Map No. 2A
GEOLOGICAL BRANCH ASSESSMENT REPORT
11,325



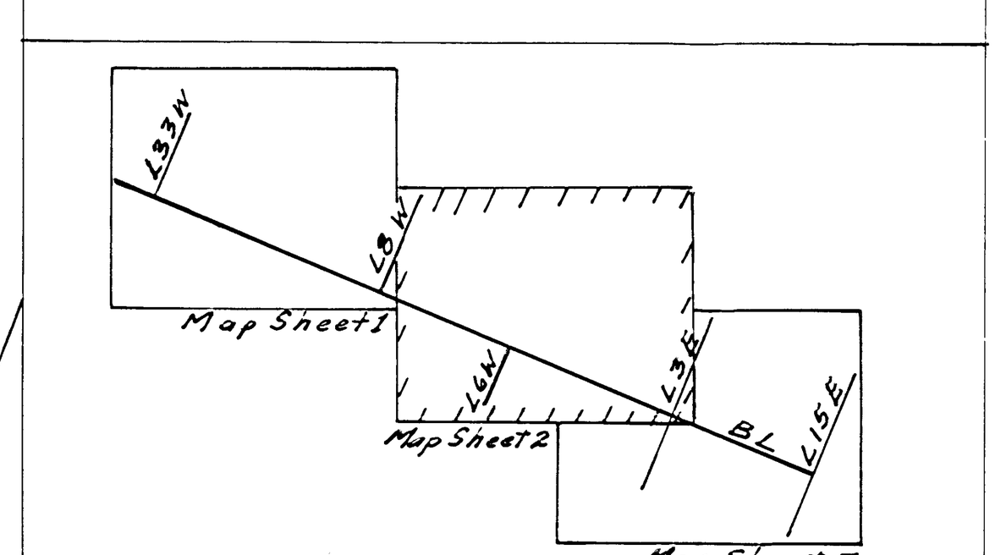
LOWER JURASSIC

1Jɪ	Inklin Fm. Argillite, Siltstone, Greywacke

UPPER TRIASSIC

UTrs	Sinwa Fm. Limestone
UTrK	Kutcho Fm. Felsic to Intermediate tuff, argillite, sandstone, conglomerate

	Geological Contact defined, approximate, assumed
	Thrust Fault, approximate
	Bedding
	Foliation
	Joints
	Lineation
	Outcrop
	Talus and Boulders
△8329	Rock Geochemical Sample
▮	HEM Conductor
it,	Intermediate Tuff
ft,	Felsic Tuff
i-ft	Intermediate to Felsic Tuffs
lt	Lapilli Tuff
tb	Tuff Breccia
hb	Hornblende Phenocrysts
m	Magnetite
(e,h,cb,s)	Alteration (epidote, hematite, chlorite carbonate, sericite)
py	Pyrite
po	Pyrrhotite



MAP KEY (No Scale

ESSO MINERALS CANADA

A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIMS

GEOLOGY MAIN GRID (SHEET No 2)

Project No. 2192 Mining Division LIARD

Latitude 58°14' N Longitude 129°01' W

NTS 104I 2W,3E 6E Scale 0 20 100 Metres

To Accompany A Report By M. LOMENDA

Dated NOV. 1983

Map No. 2B

Sample taken 30° from North

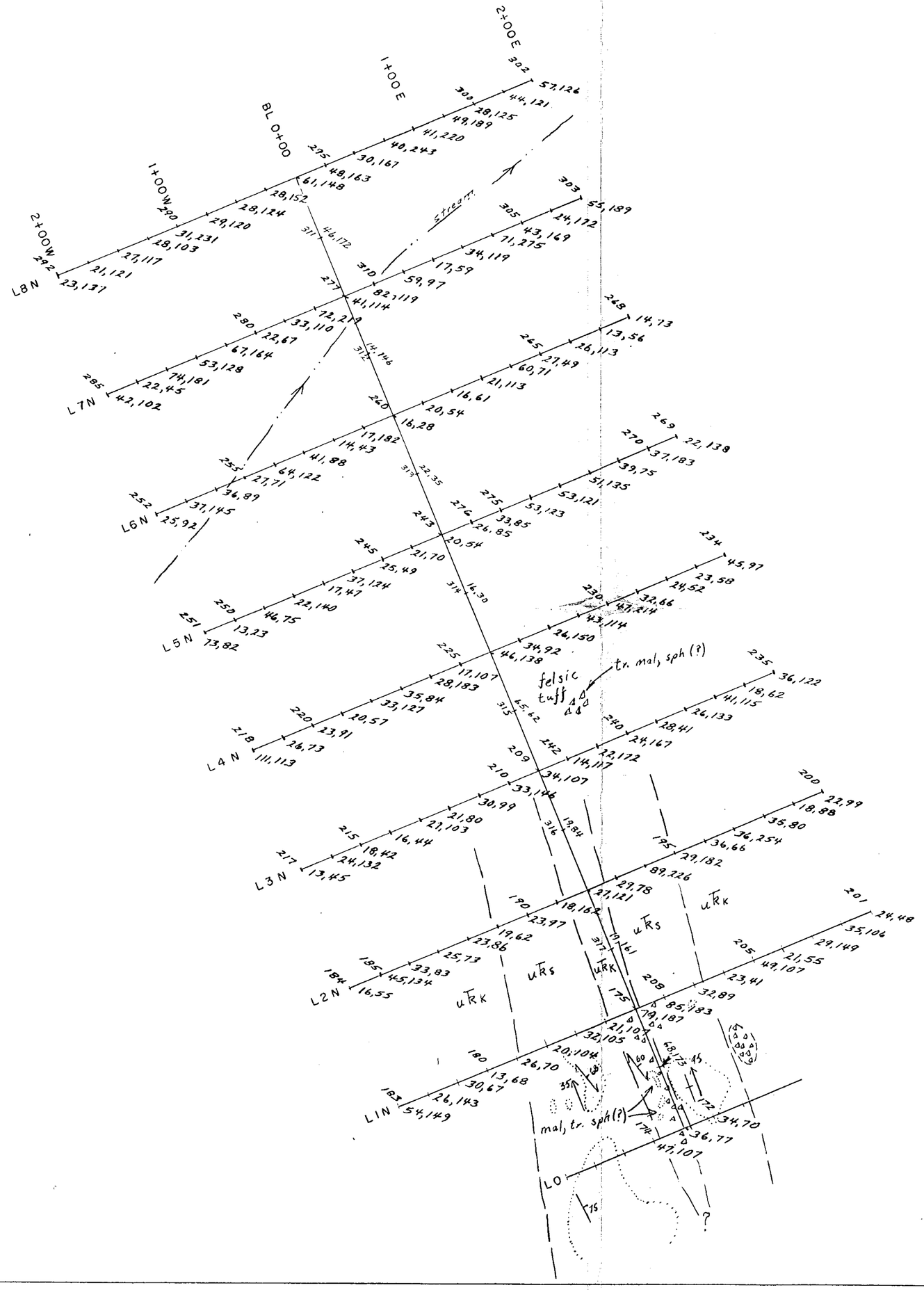
8380 up to L13N (it)

8387 it, hb

it, hb(c) 8386

See Map Sheet

it(c) it(h) it(c,a) it(c,s) f-it(h) 8393 8394 8395 8396 8397 8398 8399 8400 8401 8402 8403 8404 8405 8406 8407 8408 8409 8410 8411 8412 8413 8414 8415 8416 8417 8418 8419 8420 8421 8422 8423 8424 8425 8426 8427 8428 8429 8430 8431 8432



N

LEGEND

UPPER TRIASSIC

SINWA
Limestone, grey, recrystallized

KUTCHO FM.
Felsic tuff

Geological Contact defined, approximate, assumed

Outcrop

Talus and Boulders

Foliation

Lineation

Bedding

Cu, Zn Value (ppm) soil sample location

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIM No. 7
SOIL GEOCHEMISTRY & GEOLOGY

Project No. 2192 Mining Division LIARD

Latitude 58°14' Longitude 129°01'W

NTS 104I-2W3E

0 Metres 125
Scale 1:2500

To Accompany A Report By: M. LOMENDA

Dated: NOV. 1983

Map No. 3

LOWER JURASSIC
IJs Inklin Fm. Argillite, Siltstone Greywacke

UPPER TRIASSIC
UTRs Sinwa Fm. Limestone

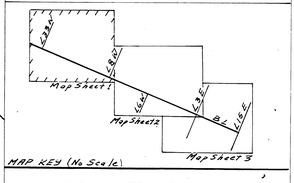
UTRK Kutcho Fm. Felsic to Intermediate tuff, argillite, sandstone, conglomerate

- Geological Contact defined, approximate, assumed
- Thrust Fault, approximate
- Bedding
- Foliation
- Joints
- Lineation
- Outcrop
- Talus and Boulders
- Rock Geochemical Sample
- HEM Conductor

it, Intermediate
ft, Felsic
i-ft Intermediate to Felsic Tuffs
lt Lapilli Tuff
tb Tuff Breccia
hb Hornblende Phenocrysts
m Magnetite
(e,h,cb,s) Alteration (epidote, hematite, chlorite, carbonate, sericite)
M Mafic Tuff
dac Dacite
ls Limestone

SOIL GEOCHEMISTRY
34-20-148-0.2 Cu-Pb-Zn-Ag (ppm)

MAP KEY (No Scale)



ESSO MINERALS CANADA
A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIMS
GEOLOGY MAIN GRID (SHEET No. 1)
SOIL SAMPLE SURVEY

Project No. 2192 Mining Division LIARD
Latitude 58°14' N Longitude 129°01' W
NTS 104I 2W 3E 6E
Scale 0 20 100 Metres
To Accompany A Report By M. LOMENDA
Dated NOV. 1983
Map No. 4A

REV 4
REV 3

GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,325

LOWER JURASSIC
lJI — Inklin Fm. Argillite, Siltstone, Greywacke

UPPER TRIASSIC
UTrS — Sinwa Fm. Limestone

UTrK — Kutcho Fm. Felsic to Intermediate tuff, argillite, sandstone, conglomerate

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

Geological Contact defined, approximate, assumed
Thrust Fault, approximate
Bedding
Foliation
Joints
Lineation
Outcrop
Talus and Boulders
Rock Geochemical Sample (△8329)
HEM Conductor
it, — Intermediate Tuff
ft, — Felsic Tuff
i-ft — Intermediate to Felsic Tuffs
lt — Lapilli Tuff
tb — Tuff Breccia
hb — Hornblende Phenocrysts
m — Magnetite
(e,h,cb,s) — Alteration (epidote, hematite, chlorite carbonate, sericite)
py — Pyrite
po — Pyrrhotite
SOIL GEOCHEMISTRY (Sample series 2192 except where shown)
23-0-108-0.5 Cu-Pb-Zn-Ag (ppm)

MAP KEY (No Scale)
Map Sheet 1
Map Sheet 2
Map Sheet 3

ESSO MINERALS CANADA

A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIMS

GEOLOGY MAIN GRID (SHEET No. 2)

SOIL SAMPLE SURVEY

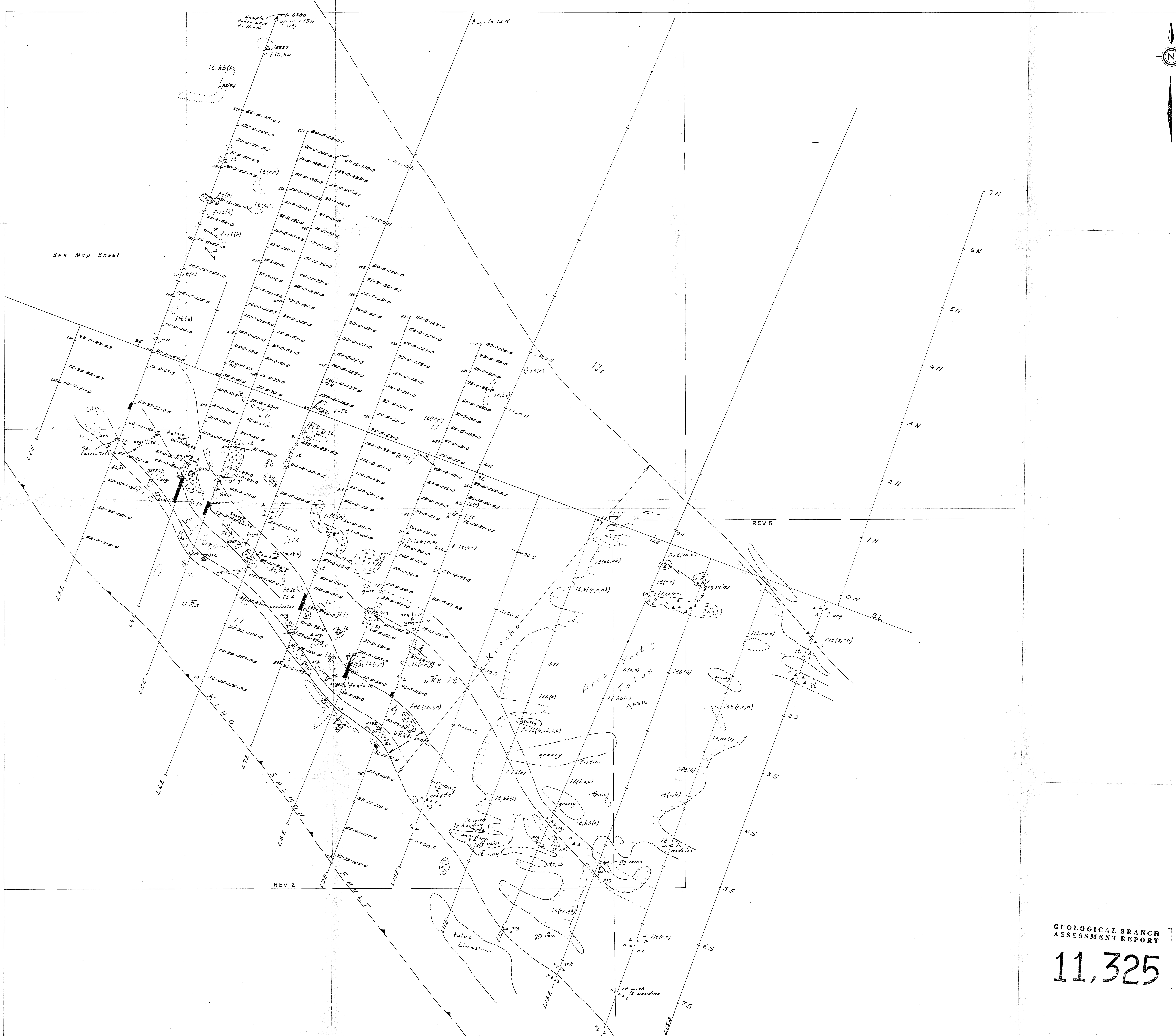
Project No. 2192 Mining Division LIARD

Latitude 58°14' N Longitude 129°01' W

NTS 104I 2W,3E 6E Scale 0 20 100 Metres

To Accompany A Report By M. LOMENDA

Dated NOV. 1983 Map No. 4B



LOWER JURASSIC
lJI — Inklin Fm Argillite, Siltstone, Greywacke

UPPER TRIASSIC
UTRs — Sinwa Fm. Limestone

UTRk — Kutcho Fm. Felsic to Intermediate tuff, argillite, sandstone, conglomerate

Geological Contact defined, approximate, assumed
Thrust Fault, approximate
Bedding
Foliation
Joints
Lineation
Outcrop
Talus and Boulders
Rock Geochemical Sample
HEM Conductor
it, — Intermediate Tuff
ft, — Felsic Tuff
i-ft — Intermediate to Felsic Tuffs
lt — Lapilli Tuff
tb — Tuff Breccia
hb — Hornblende Phenocrysts
m — Magnetite
(e,h,cb,s) — Alteration (epidote, hematite, chlorite carbonate, sericite)
py — Pyrite
po — Pyrrhotite
490 SOIL GEOCHEMISTRY (Sample series 2122-65 to 104, 2192-478 to 608)
46-17-106-0.1 Cu-Pb-Zn-Ag (ppm)

MAP KEY (No Scale)
Map Sheet 1
Map Sheet 2
Map Sheet 3

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIMS
GEOLOGY MAIN GRID (SHEET No 3)
SOIL SAMPLE SURVEY

Project No. 2192 Mining Division LIARD

Latitude 58°14' N Longitude 129°01' W

NTS 104I 2W 3E 6E — Scale 0 20 100 Metres

To Accompany A Report By M. LOMENDA

Dated NOV. 1983

Map No. 4C

TURNAGAIN RIVER

McBRIDE RIVER

SETTEA Lk.

Rev 1

Rev 2

Rev 3

Rev 4

Rev 5

Rev 6

Rev 7

Rev 8

651 ⊙ 39-26-73-2.2

650 ⊙ 52-37-78-4.0

649 ⊙ 97-53-83-2.1

648 ⊙ 20-52-97-1.5

640 ⊙ 13-52-75-2.1

641 ⊙ 66-56-111-2.9

642 ⊙ 41-39-55-1.0

643 ⊙ 44-36-101-2.3 △ 8401

644 ⊙ 99-97-144-2.4 △ 8400

645 ⊙ 10-13-19-0.4

646 ⊙ 20-35-43-0.7

647 ⊙ 106-159-140-2.7

△ 8403

634 ⊙ 172-124-222-1.7

635 ⊙ 175-127-235-2.8

629 ⊙ 179-121-254-2.7

636 ⊙ 93-61-153-2.0

637 ⊙ 200-111-304-3.2 △ 8402

630 ⊙ 196-101-285-3.9

638 ⊙ 158-118-228-3.0

639 ⊙ 205-155-319-3.4 △ 8404

631 ⊙ 203-90-338-4.2

632 ⊙ 199-113-326-4.0 △ 8405

633 ⊙ 571-232-692-10.3

△ 8406

N

658⊙ HEAVY MINERAL SAMPLE

23-102-106 Cu, Pb, Zn, Ag(-40Mesh, ppm)

△ ROCK GEOCHEMICAL SAMPLE

□ LEGAL CORNER POST

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

A DIVISION OF ESSO RESOURCES CANADA LIMITED

REV CLAIMS

HEAVY MINERAL SAMPLING

Project No. 2192 Mining Division LIARD

Latitude 58°14 N Longitude 129°01'

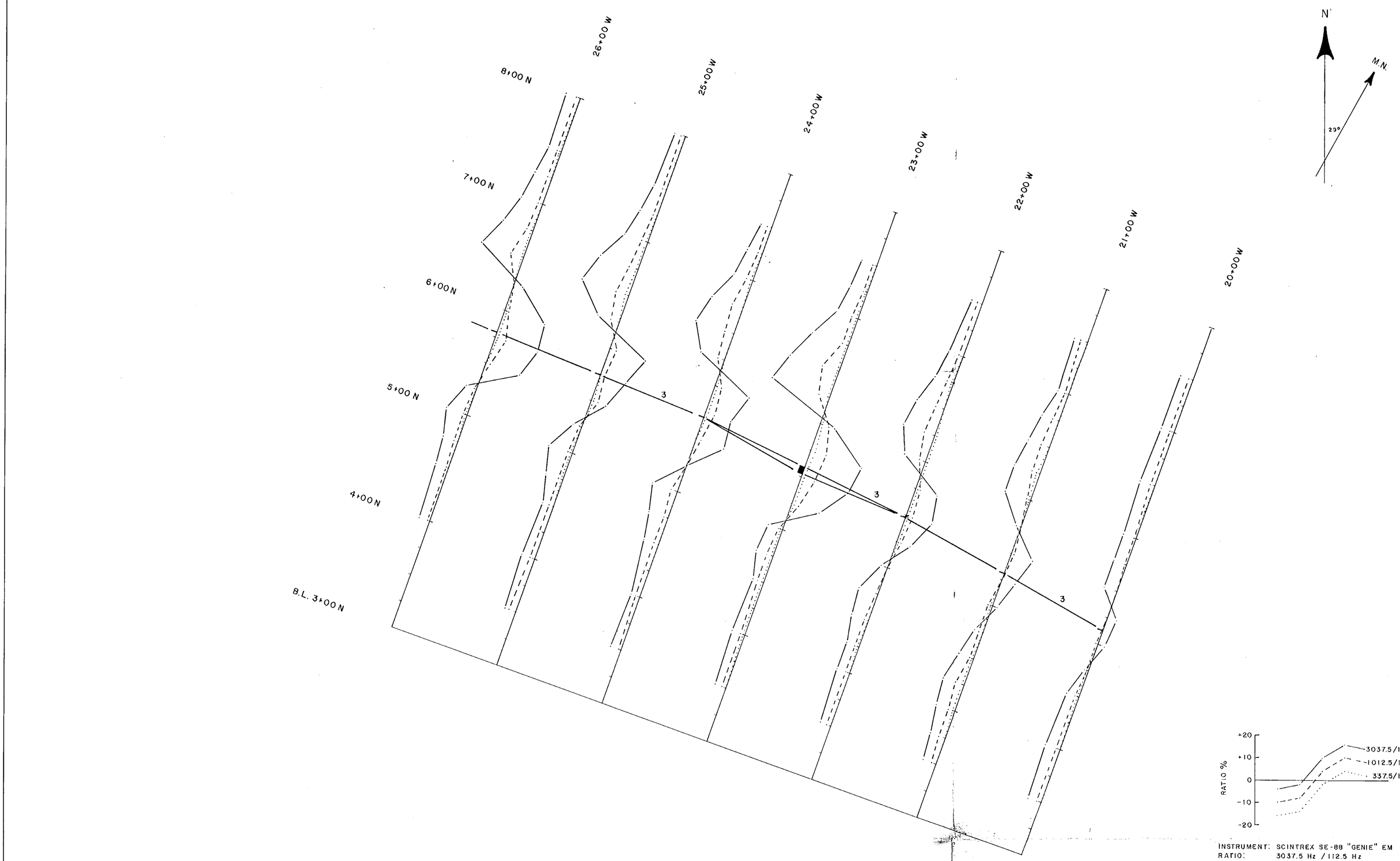
NTS 104I-2W 0 150 Metre 750

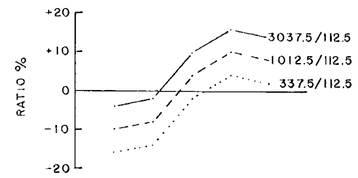
Scale 1:15,000

To Accompany A Report By M. LOMENDA

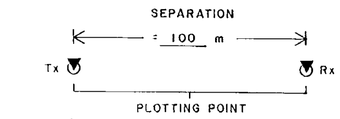
Dated NOV. 1983

Map No. 5





INSTRUMENT: SCINTREX SE-88 "GENIE" EM
RATIO: 3037.5 Hz / 112.5 Hz
1012.5 Hz / 112.5 Hz
337.5 Hz / 112.5 Hz



DEFINITE CONDUCTOR

POSSIBLE CONDUCTOR

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 20W - 26W)

HLEM SURVEY

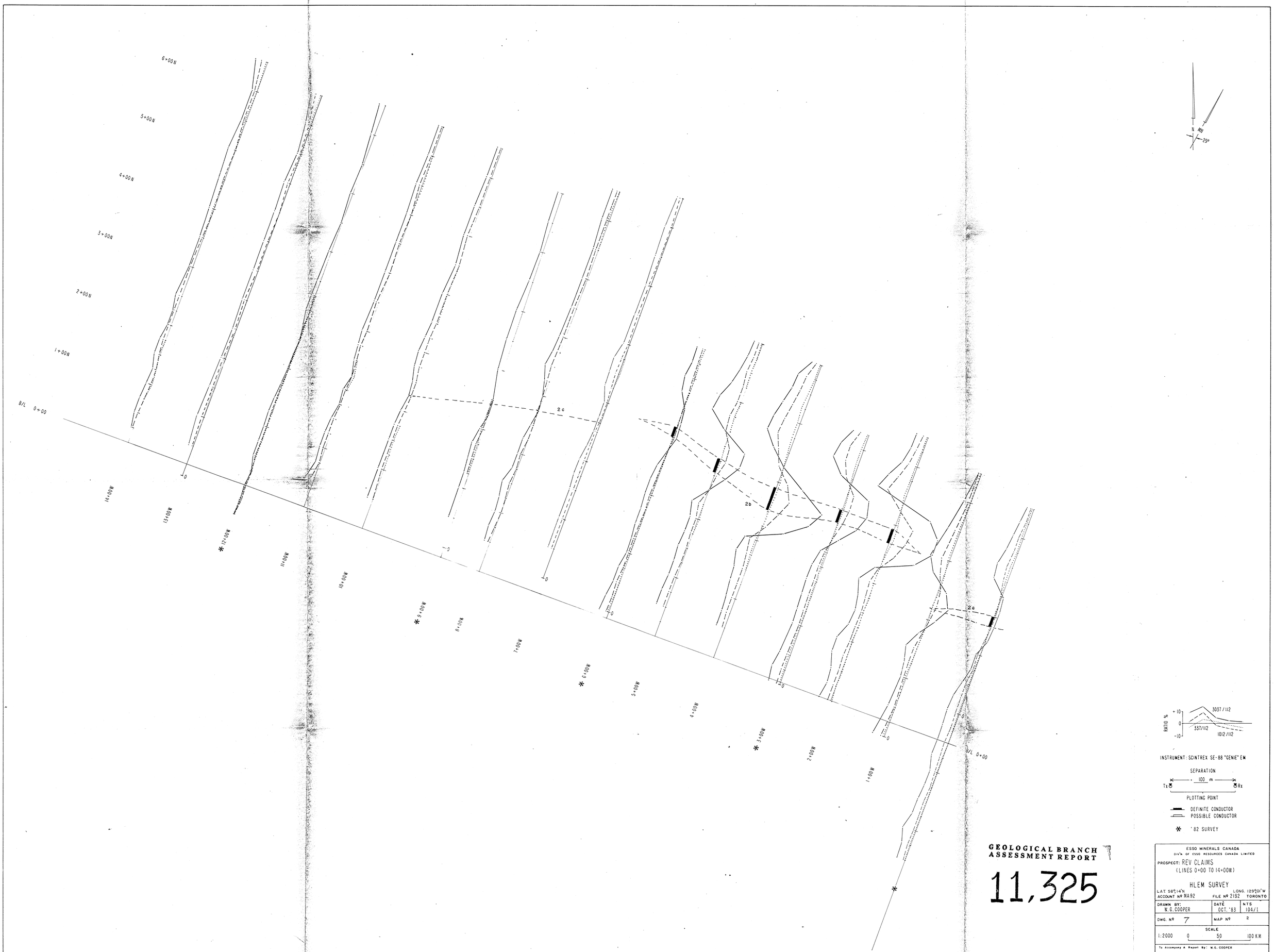
LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: W.G. COOPER	DATE: AUG. 1983	NTS 104 I
DWG. Nº 6	MAP Nº 1	

SCALE
0 50 100 m
1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER
DATED: NOV. 1983



INSTRUMENT: SCINTREX SE-88 "GENIE" EM

SEPARATION

100 m

Tx Rx

PLOTTING POINT

DEFINITE CONDUCTOR

POSSIBLE CONDUCTOR

* '82 SURVEY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 0+00 TO 14+00W)

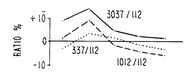
HLEM SURVEY

LAT 58°14'N LONG. 129°01'W
ACCOUNT Nº MA92 FILE Nº 2152 TORONTO

DRAWN BY:	DATE	NTS
W.G.COOPER	OCT. '83	104/1
DWG. Nº 7	MAP Nº 2	

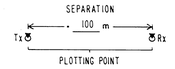
SCALE
1:2000 0 50 100 KM

To Accompany A Report By: W.G. COOPER
Dated: NOV. 1983



INSTRUMENT: SCINTREX SE-88 "GENIE" EM

SEPARATION



DEFINITE CONDUCTOR

POSSIBLE CONDUCTOR

* '82 SURVEY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 0+00 TO 10+00E)

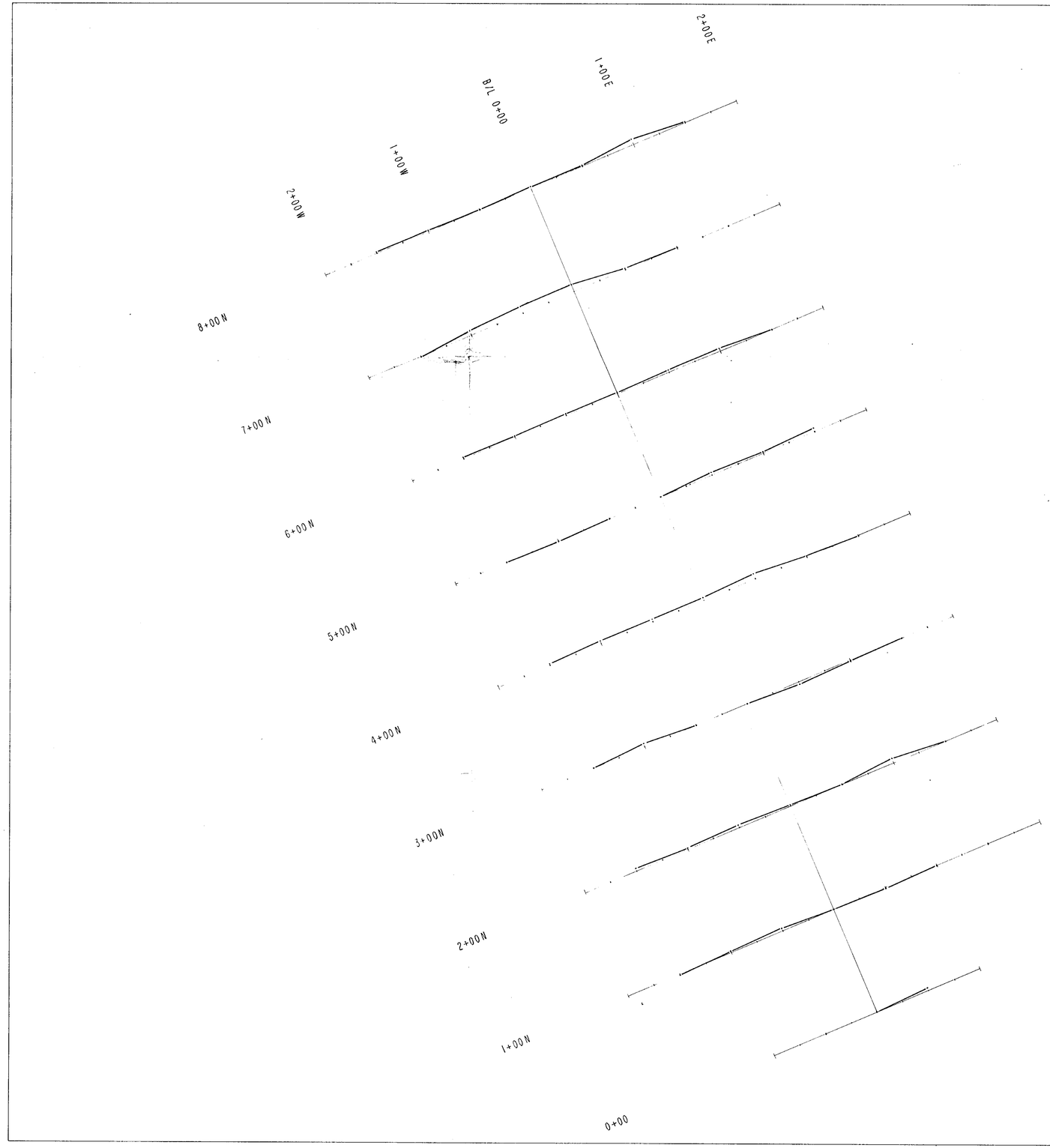
HLEM SURVEY

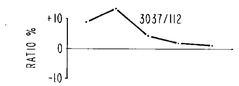
LAT. 58°14'N LONG. 129°01'W
ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY:	DATE	NTS
W.G. COOPER	OCT. '83	104/I
DWG. Nº 8	MAP Nº 3	

SCALE
1:2 000 0 50 100 KM

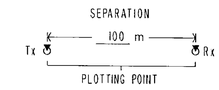
To Accompany A Report By: W.G. COOPER
Dated: NOV. 1983





INSTRUMENT: SCINTREX SE-88 "GENIE" EM

SEPARATION



DEFINITE CONDUCTOR

POSSIBLE CONDUCTOR

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

MALACHITE GRID
HLEM SURVEY

LAT. 58°14'N LONG. 129°01'W
ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

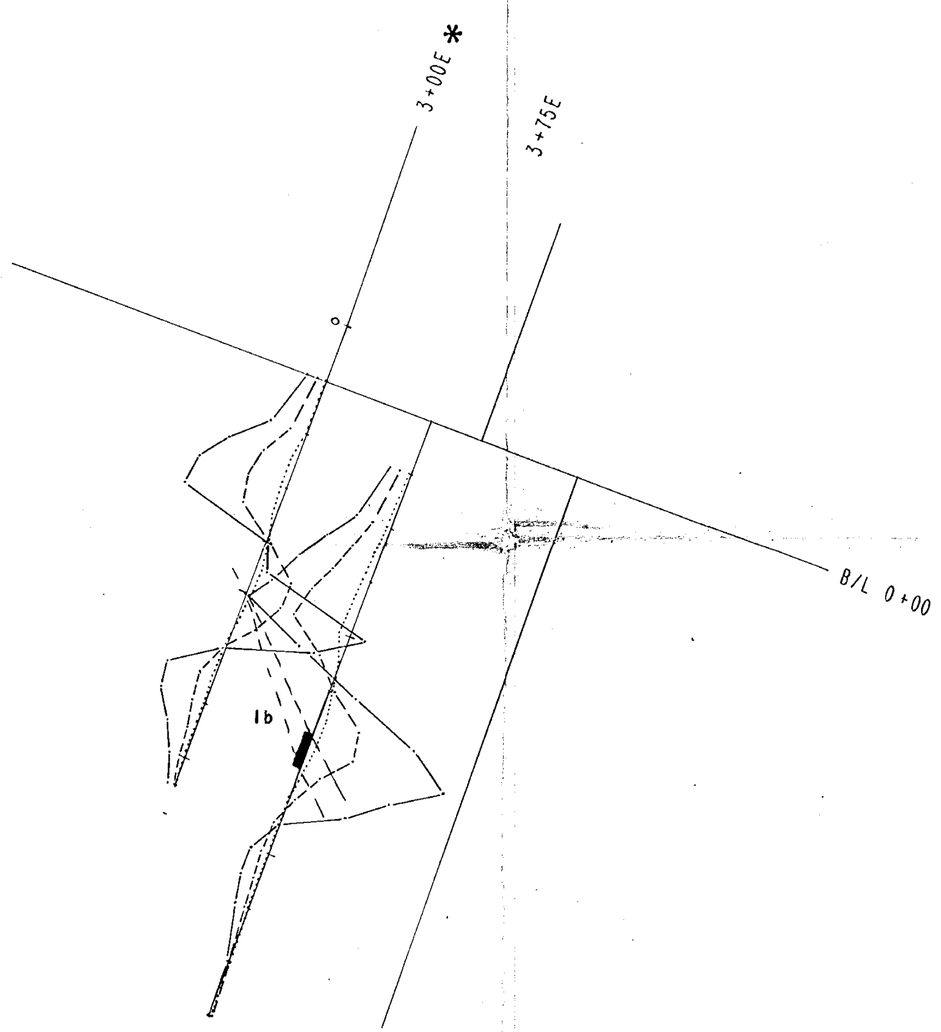
DRAWN BY:	DATE	NTS
W.G. COOPER	OCT. '83	104/1
DWG. Nº 9	MAP Nº 4	

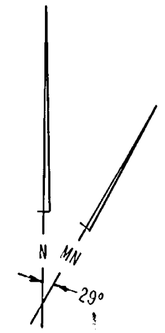
SCALE

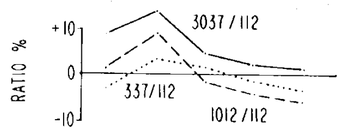
1:2000 0 100 M

To Accompany A Report By: W.G. COOPER

Dated: NOV. 1983

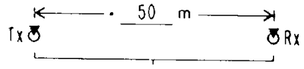






INSTRUMENT: SCINTREX SE-88 "GENIE" EM

SEPARATION



PLOTTING POINT

DEFINITE CONDUCTOR

POSSIBLE CONDUCTOR

* '82 SURVEY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 3+00E, 3+75E)

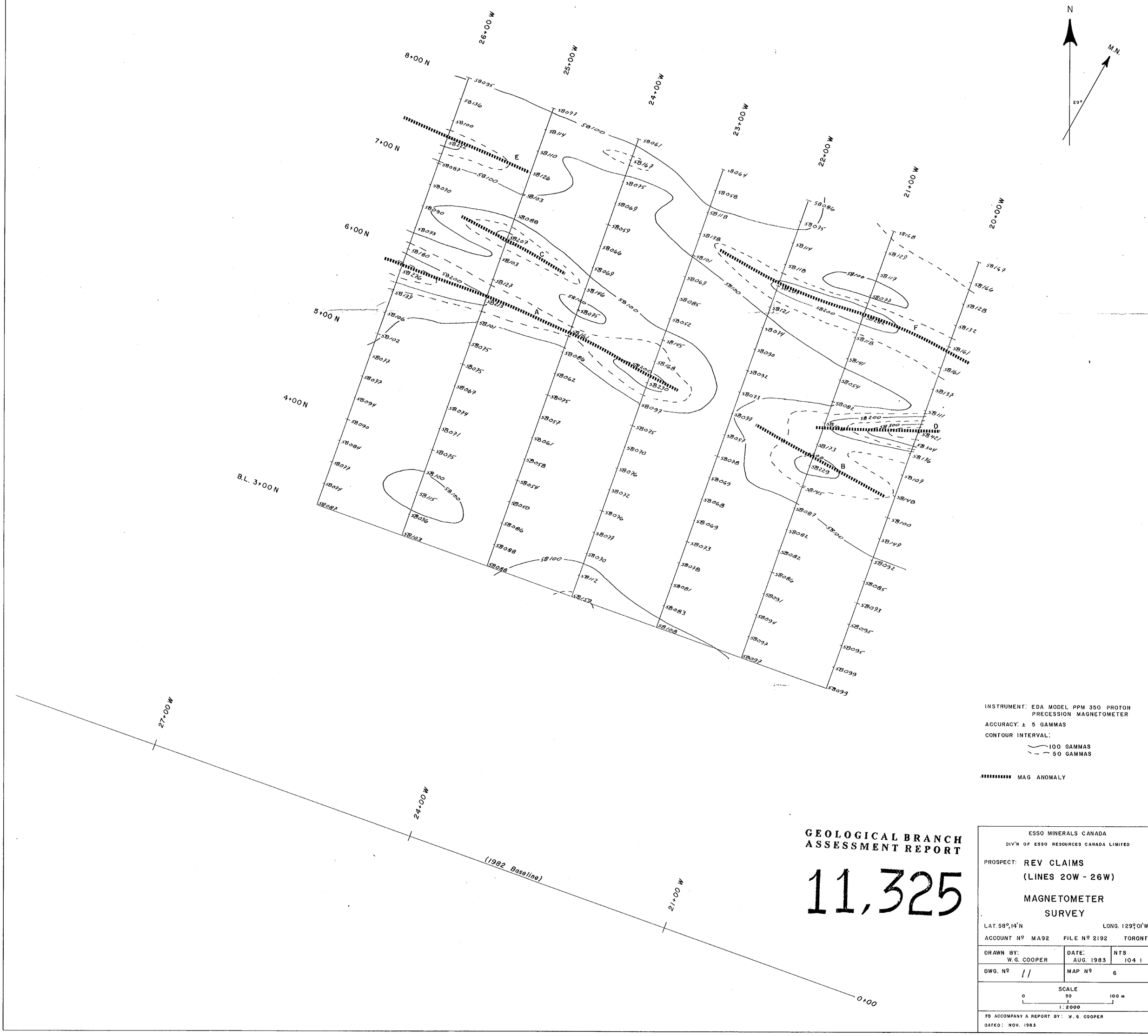
HLEM SURVEY

LAT. 58°14'N LONG. 129°01'W
ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY:	DATE	NTS
W.G. COOPER	OCT. '83	104/I
DWG. Nº 10	MAP Nº 5	

SCALE
1:2000 0 50 100M

To Accompany A Report By: W.G. COOPER
Dated: NOV. 1983



INSTRUMENT: EDA MODEL PPM 350 PROTON PRECESSION MAGNETOMETER

ACCURACY: ± 5 GAMMAS

CONTOUR INTERVAL:

100 GAMMAS

50 GAMMAS

MAG ANOMALY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 20W - 26W)

MAGNETOMETER
SURVEY

LAT. 58°14'N LONG. 129°01'W

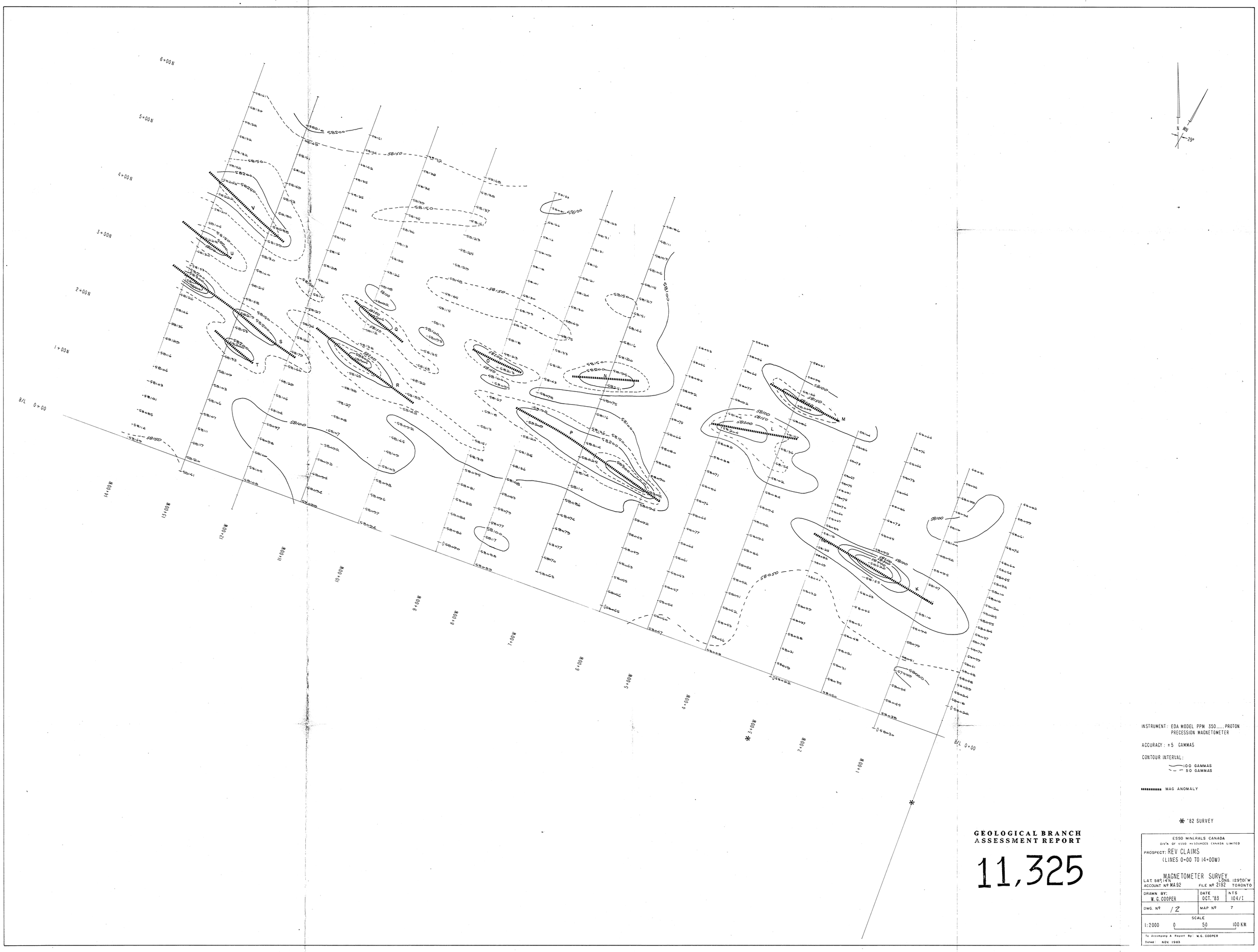
ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: W.G. COOPER	DATE: AUG. 1983	NTS 104 I
DWG. Nº //	MAP Nº 6	

SCALE 0 50 100 m
1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED: NOV. 1983



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

INSTRUMENT: EDA MODEL PPM 350.....PROTON PRECESSION MAGNETOMETER

ACCURACY: ±5 GAMMAS

CONTOUR INTERVAL:

100 GAMMAS

50 GAMMAS

MAG ANOMALY

* '82 SURVEY

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS
(LINES 0+00 TO 14+00W)

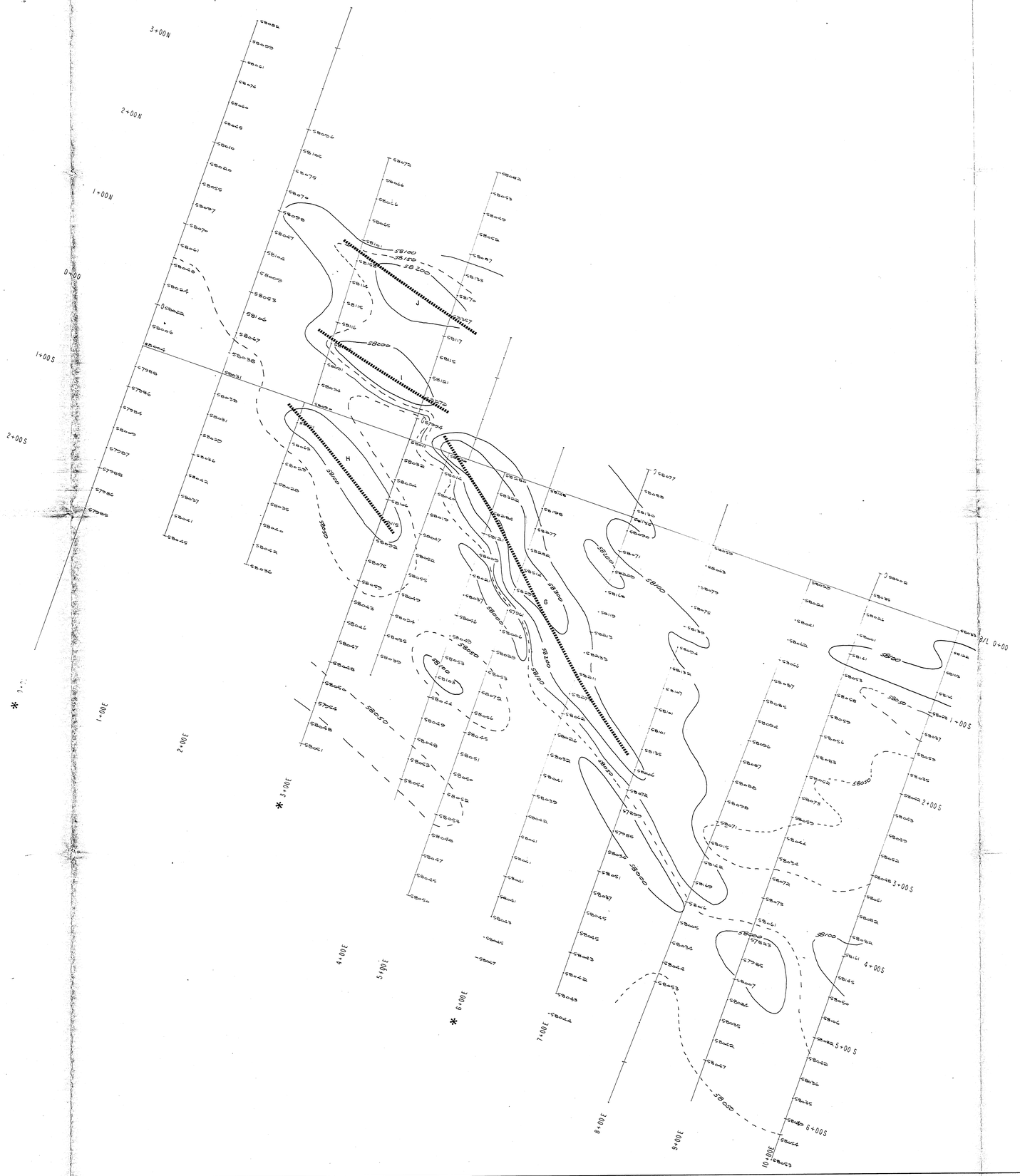
MAGNETOMETER SURVEY

LAT 58°14'N LONG. 129°01'W
ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY:	DATE	NTS
W.G. COOPER	OCT. '83	104/I
DWG. Nº 12	MAP Nº 7	

SCALE
1:2000 0 50 100 KM

To Accompany A Report By: W.G. COOPER
Dated: NOV. 1983


3+00N
2+00N
1+00N
0+00
1+00S
2+00S
1+00E
2+00E
3+00E
4+00E
5+00E
6+00E
7+00E
8+00E
9+00E
10+00E
58100
58150
58200
58250
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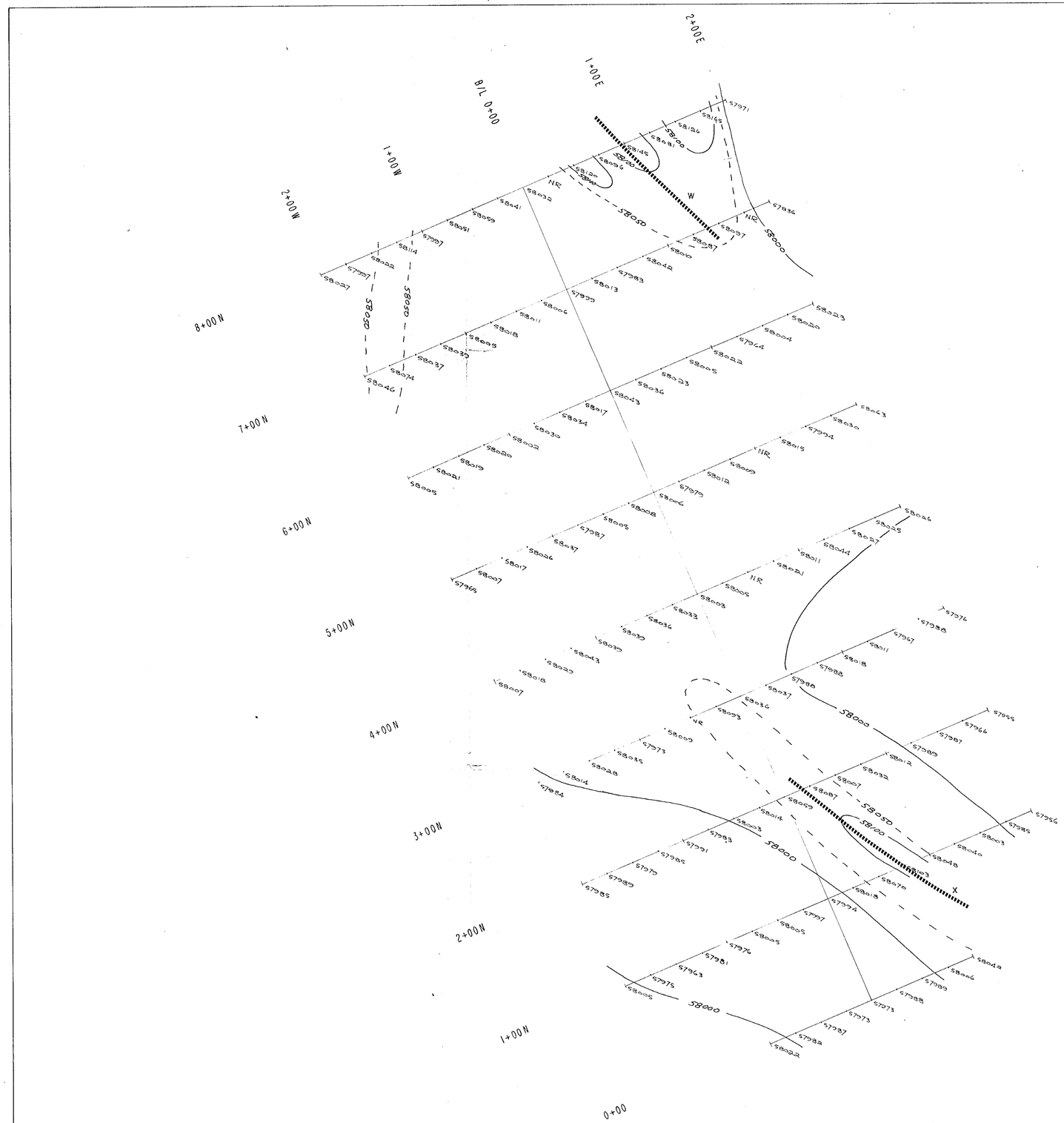


INSTRUMENT: EDA MODEL PPM 350 PROTON PRECESSION MAGNETOMETER

ACCURACY: ± 5 GAMMAS

CONTOUR INTERVAL:

100 GAMMAS

50 GAMMAS

MAG ANOMALY

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA
DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

MALACHITE GRID

MAGNETOMETER SURVEY

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

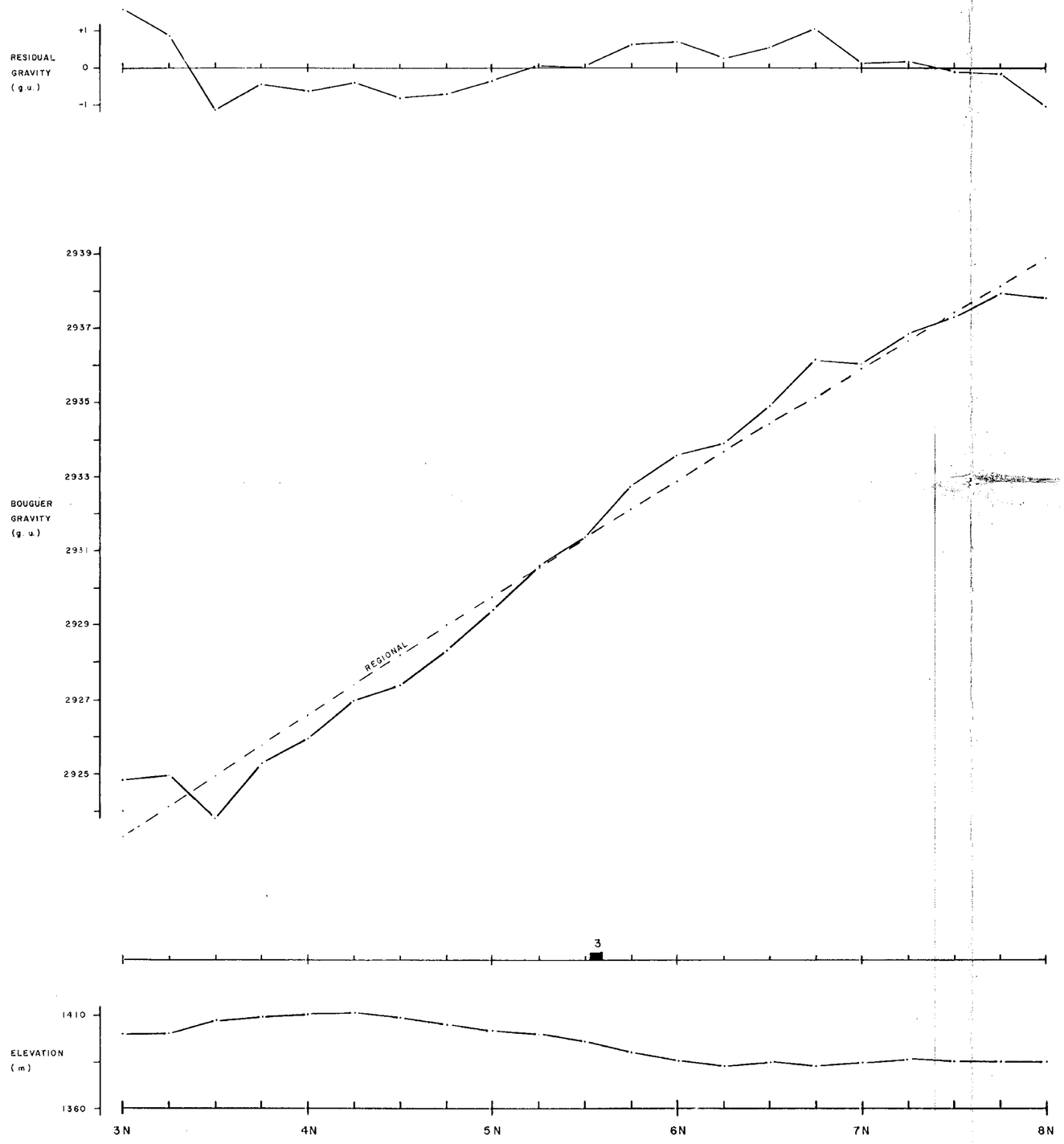
DRAWN BY:	DATE	N.T.S.
W.G. COOPER	OCT. '83	104/I
DWG. Nº 14	MAP Nº 9	

SCALE

1:2000 0 100 M

To Accompany A Report By: W.G. COOPER

Dated: NOV. 1983



INSTRUMENT: LACOSTE ROMBERG MODEL G
GRAVITY METER

GDD ELECTRONIC LEVEL

HLEM CONDUCTOR

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

LINE 23+00W

GRAVITY PROFILE

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: J. HUNT	DATE: OCT. 1983	NTS 104 I
DWG. Nº 15	MAP Nº 10	

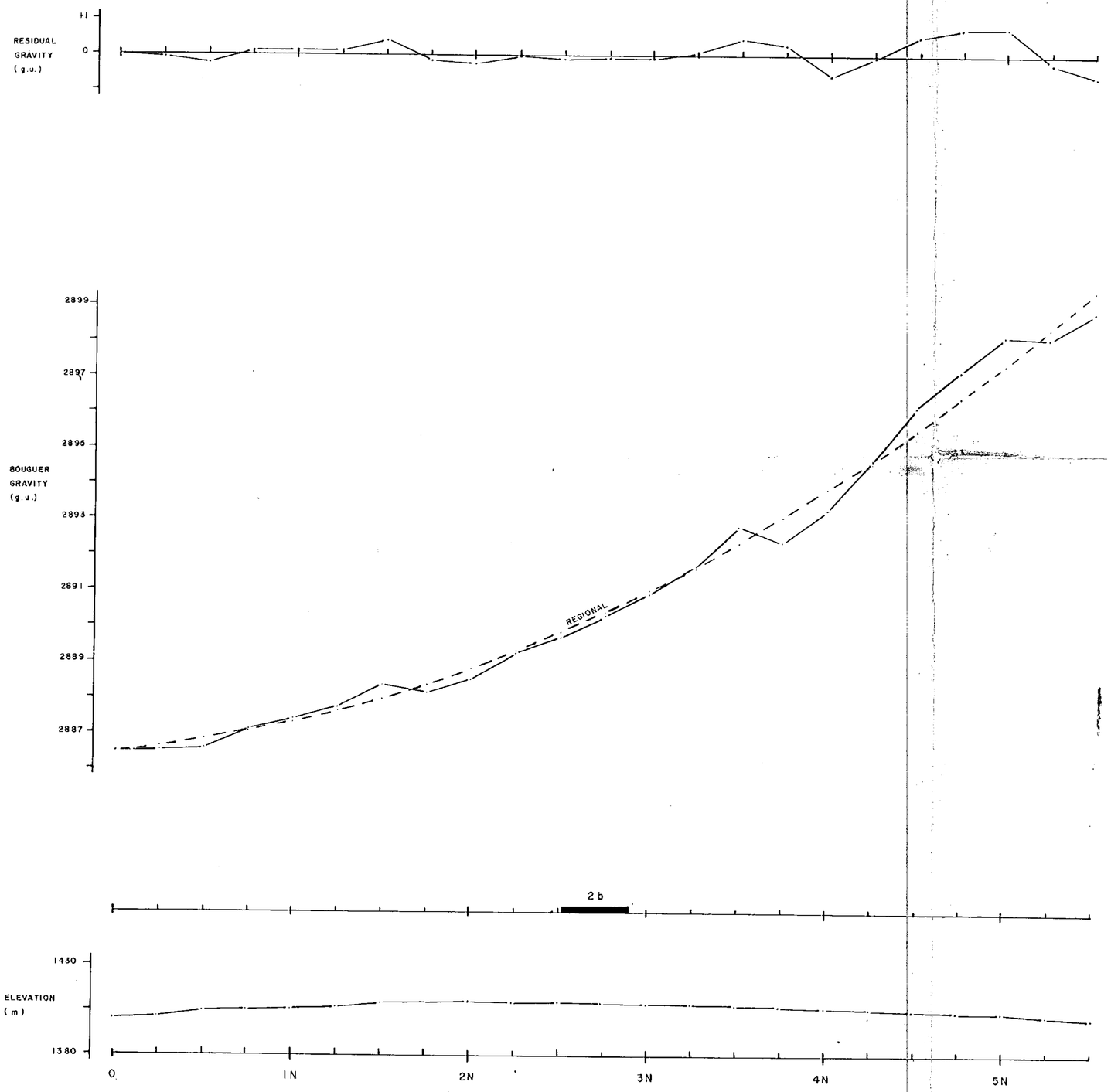
SCALE

0 50 100 m

1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED NOV. 1983



INSTRUMENT: LACOSTE ROMBERG MODEL G GRAVITY METER

GDD ELECTRONIC LEVEL

HLEM CONDUCTOR

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

LINE 4+00 W

GRAVITY PROFILE

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: J. HUNT	DATE: OCT. 1983	NTS 104 I
DWG. Nº 16	MAP Nº 11	

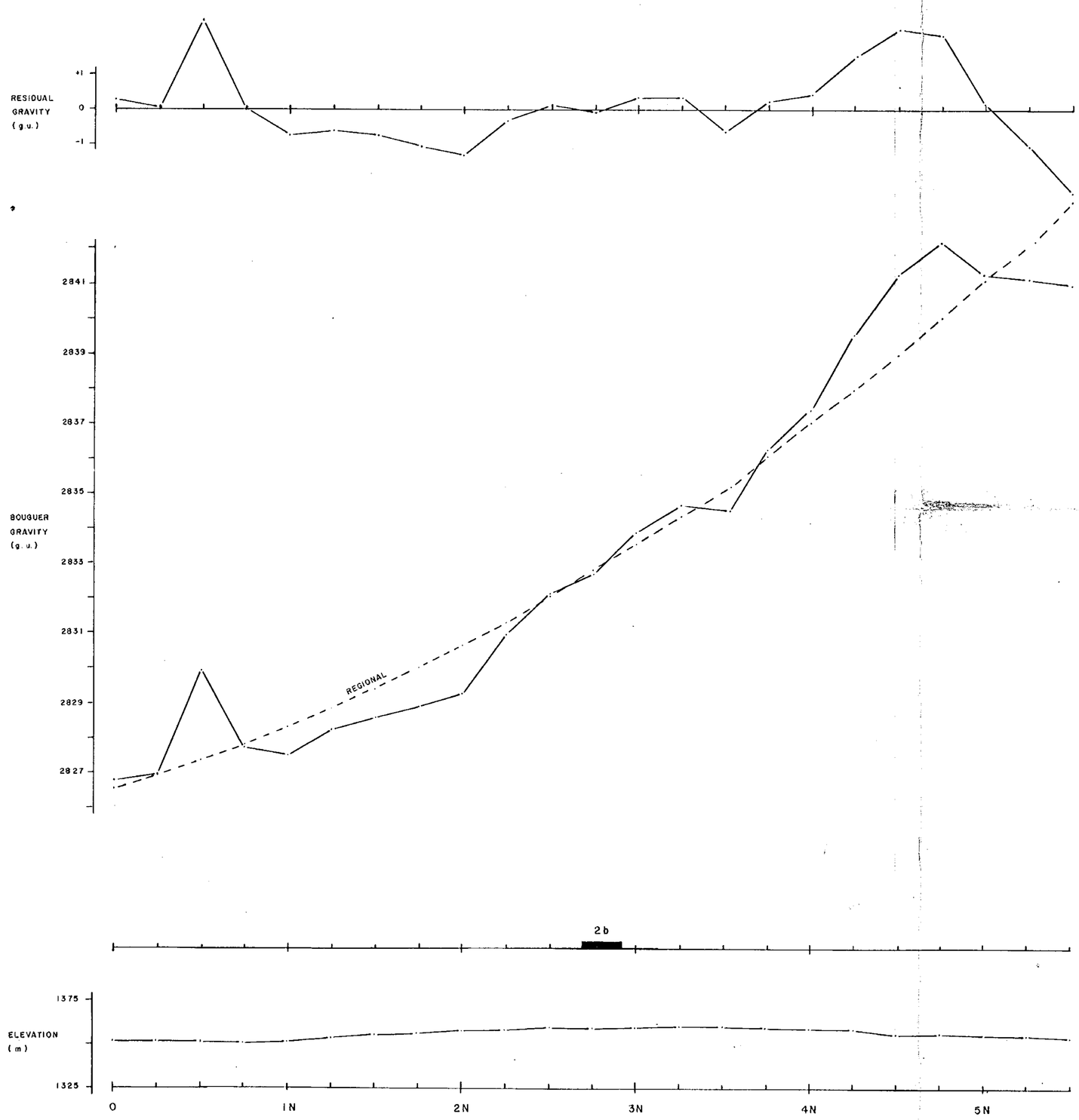
SCALE

0 50 100 m

1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED: NOV. 1983



INSTRUMENT: LACOSTE ROMBERG MODEL G
GRAVITY METER

GDD ELECTRONIC LEVEL

HLEM CONDUCTOR

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

LINE 2+00 W

11,325

GRAVITY PROFILE

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: J. HUNT	DATE: OCT. 1983	NTS 104 I
DWG. Nº 17	MAP Nº 12	

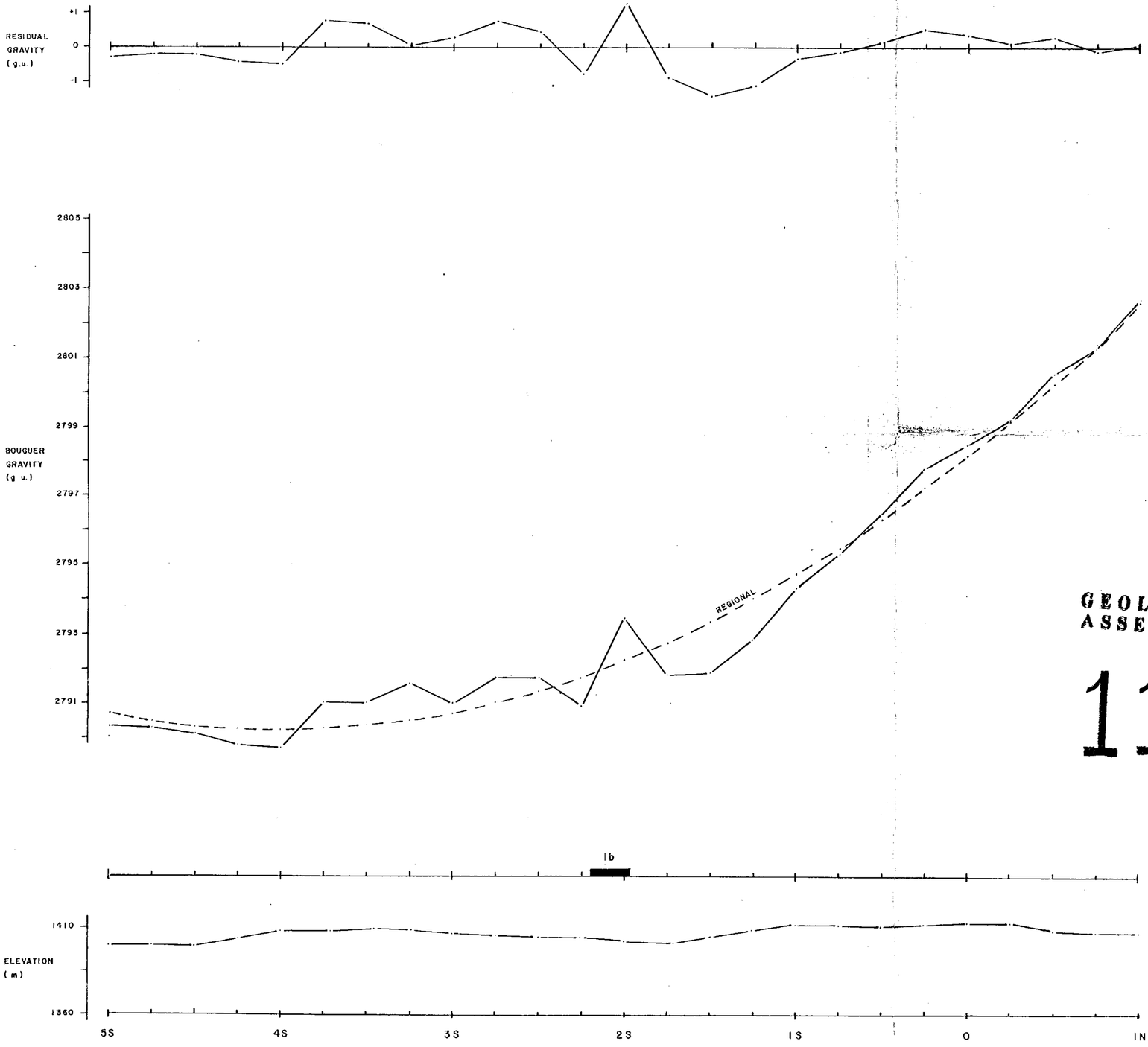
SCALE

0 50 100 m

1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED: NOV. 1983



INSTRUMENT: LACOSTE ROMBERG MODEL G GRAVITY METER

GDD ELECTRONIC LEVEL

HLEM CONDUCTOR

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

LINE 5+00 E

GRAVITY PROFILE

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: J. HUNT	DATE: OCT. 1983	NTS 104 I
DWG. Nº 18	MAP Nº 13	

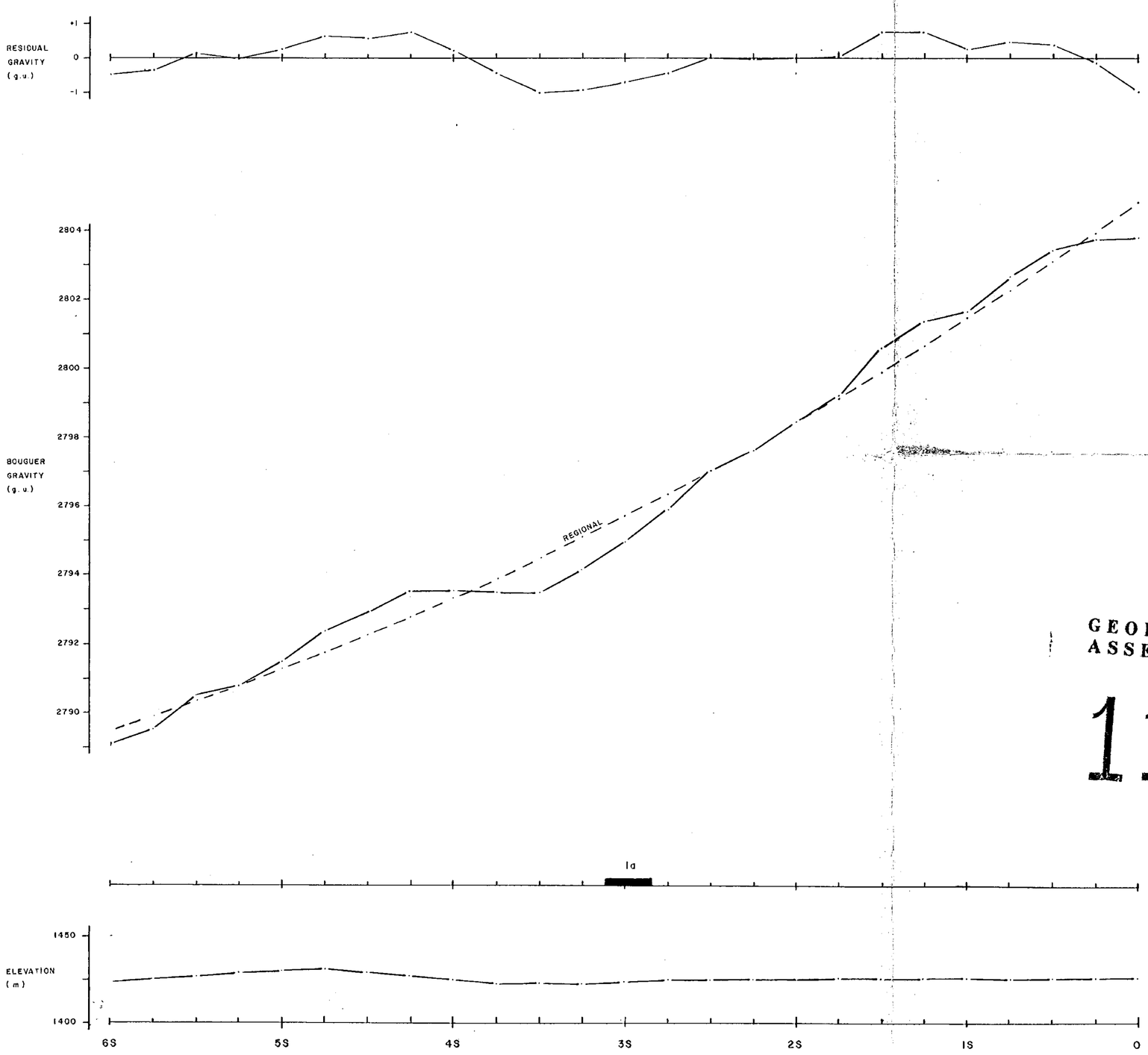
SCALE

0 50 100 m

1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED: NOV. 1983



INSTRUMENT: LACOSTE ROMBERG MODEL G GRAVITY METER

GDD ELECTRONIC LEVEL

HLEM CONDUCTOR

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,325

ESSO MINERALS CANADA

DIV'N OF ESSO RESOURCES CANADA LIMITED

PROSPECT: REV CLAIMS

LINE 7+00 E

GRAVITY PROFILE

LAT. 58°14'N LONG. 129°01'W

ACCOUNT Nº MA92 FILE Nº 2192 TORONTO

DRAWN BY: J. HUNT	DATE: OCT. 1983	NTS 104 I
DWG. Nº 19	MAP Nº 14	

SCALE 0 50 100 m

1:2000

TO ACCOMPANY A REPORT BY: W.G. COOPER

DATED: NOV. 1983