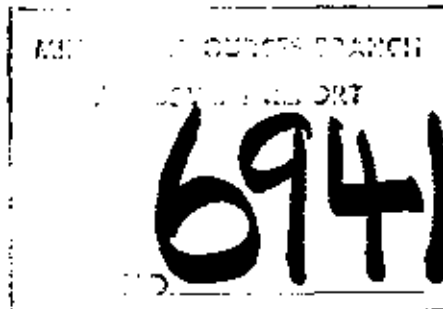


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Part 1 of 2

GEOPHYSICAL, GEOLOGICAL
AND GEOCHEMICAL REPORT
ON BOLD CLAIMS
OMINECA MINING DIVISION
93-N-9W
LAT. $55^{\circ}37'$ LONG. $124^{\circ}23'$

by
R.W. ODDY

ESSO MINERALS CANADA
314-1281 WEST GEORGIA ST.
VANCOUVER, B.C.

SEPTEMBER, 1978

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A. Introduction

This report deals with the geophysical, geochemical and geological surveying carried out by Imperial Oil Limited on the Bold 1 to 4 mineral claims between June 3 and July 20, 1978.

The purpose of the work was to investigate previously known occurrences of lead, zinc, silver, copper and molybdenum mineralization and to expand upon the geological, geochemical and geophysical knowledge of the area within which the showings are located.

1. Location and Access

The Bold mineral claims are located 8.5 kilometers south-east of Manson Creek in central B.C. (NTS 93-N-9W). The area covered by the claims lies immediately west of Manson Lakes and north of Boulder Creek covering moderately steep topography ranging in elevation from 1550 meters to 900 meters along Boulder Creek.

Access can be gained to the property in several ways the simplest being by helicopter direct from either Manson Creek or Germansen Landing to the northwest. It is also possible to reach the property on foot from the Omineca road at a point 1.5 kilometers east of the property. In addition a cat-trail from Omineca road, crossing Manson River and winding uphill toward the center of the property, could provide four-wheel drive access although the cat-trail and river crossing would require some upgrading.

The geological, geochemical and geophysical survey work was done on a large grid located approximately in the middle of the claim block formed by the Bold 1 to 4 mineral claims (see Location Map).

2. Property

The Bold 1 to 4 mineral claims comprise a total of 58 units and were staked in September 1977. They are fully owned by Imperial Oil Limited and the assessment work done in 1978 was carried out by the Esso Minerals Canada division of Imperial Oil.

<u>Claim</u>	<u>Anniversary Date</u>	<u>Units</u>	<u>Record No.</u>
Bold 1	Sept. 16, 1978	6	787
Bold 2	Sept. 16, 1978	12	788
Bold 3	Sept. 16, 1978	20	789
Bold 4	Sept. 16, 1978	20	790

3. History of Property

The earliest exploration work in the Boulder Creek area was on the Berthold lode gold prospect located about a half mile south of Boulder Creek. A 10 foot wide quartz filled fracture zone containing pyrite and galena with gold and silver values was trenched in 1940. From 1966 to 1968 Omineca Base Metals Ltd. carried out trenching and soil sampling on several quartz veins located along Boulder Creek. The veins contain galena and minor copper, zinc and silver.

More recently Northern Tungsten Mines Ltd. carried out fairly extensive work on the area north of Boulder Creek. In 1972 the work consisted of building access roads, trenching and soil sampling and in 1973 additional soil sampling and trenching, as well as mapping, Crone Shootback E.M., minor I.P. Surveying (3 line-kilometers) and drilling was done. The drilling consisted of 8 holes totaling 862 meters.

Several attempts to recover placer gold have been made along Boulder Creek since 1940. Although only minor amounts of gold have been recovered, the panned concentrates apparently contained notable amounts of scheelite and cassiterite.

4. Summary of Work Done

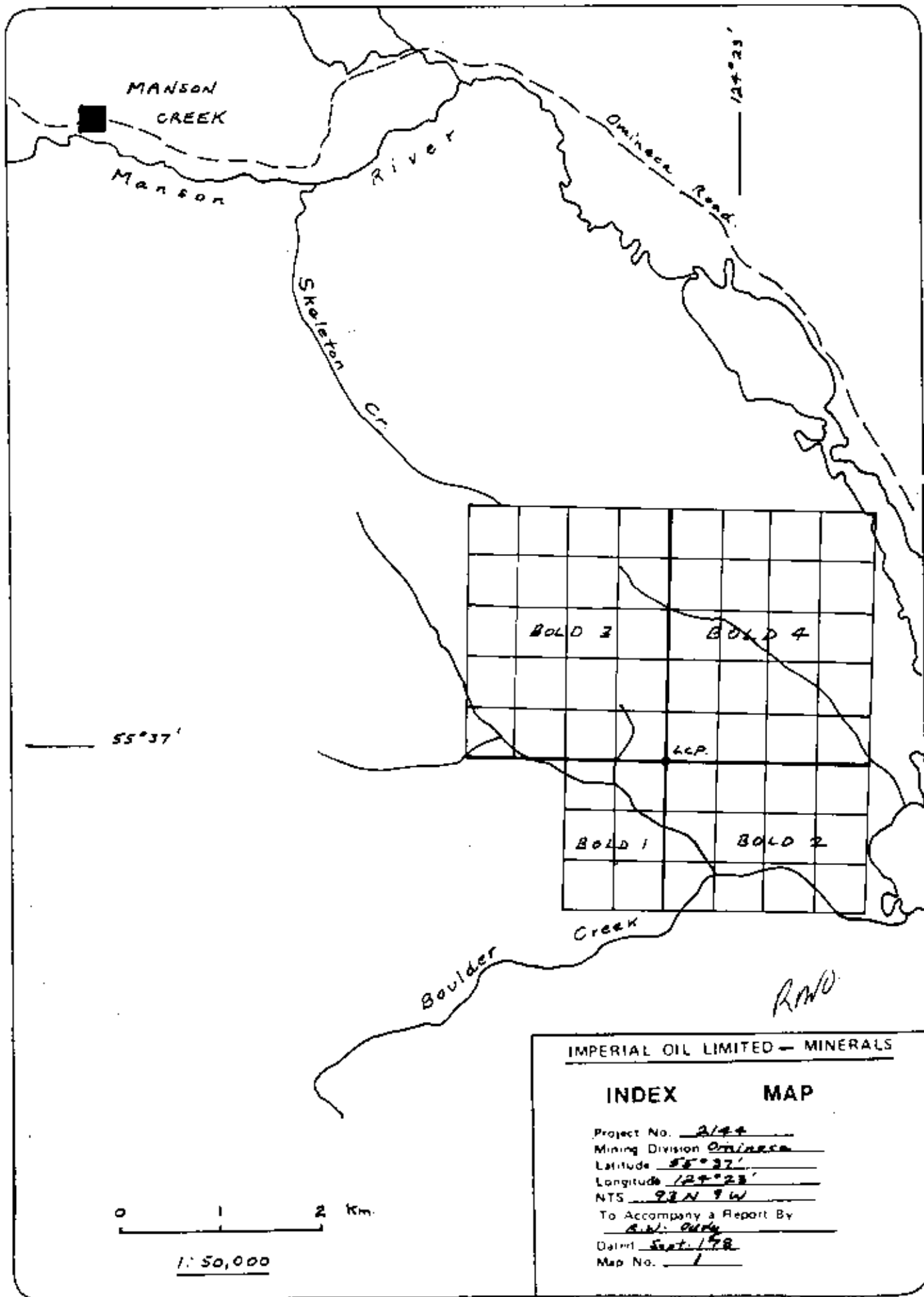
The work completed in 1978 included linecutting, geological mapping, geophysical surveys and geochemical surveying. The work was done between June 3 and July 20, 1978 and covered portions of each of the four Bold claims (see Location Map).

The linecutting was done from June 3 to June 10 by a six man crew and totalled 27.2 line kilometers. The base line is 2000 meters long and oriented NW-SE (135° Azimuth) with cross lines at 100 meter intervals at right angles to the base line. The cross lines extend for 500 meters to the southwest and 700 meters to the northeast from the base line and are cut and picketed lines with stations marked at 25 meter intervals.

Geological mapping was done from June 22 to 29 at a scale of 1:2500 utilizing the cut grid for mapping control. Total area mapped is 240 hectares. The mapping was done by D. Findlay.

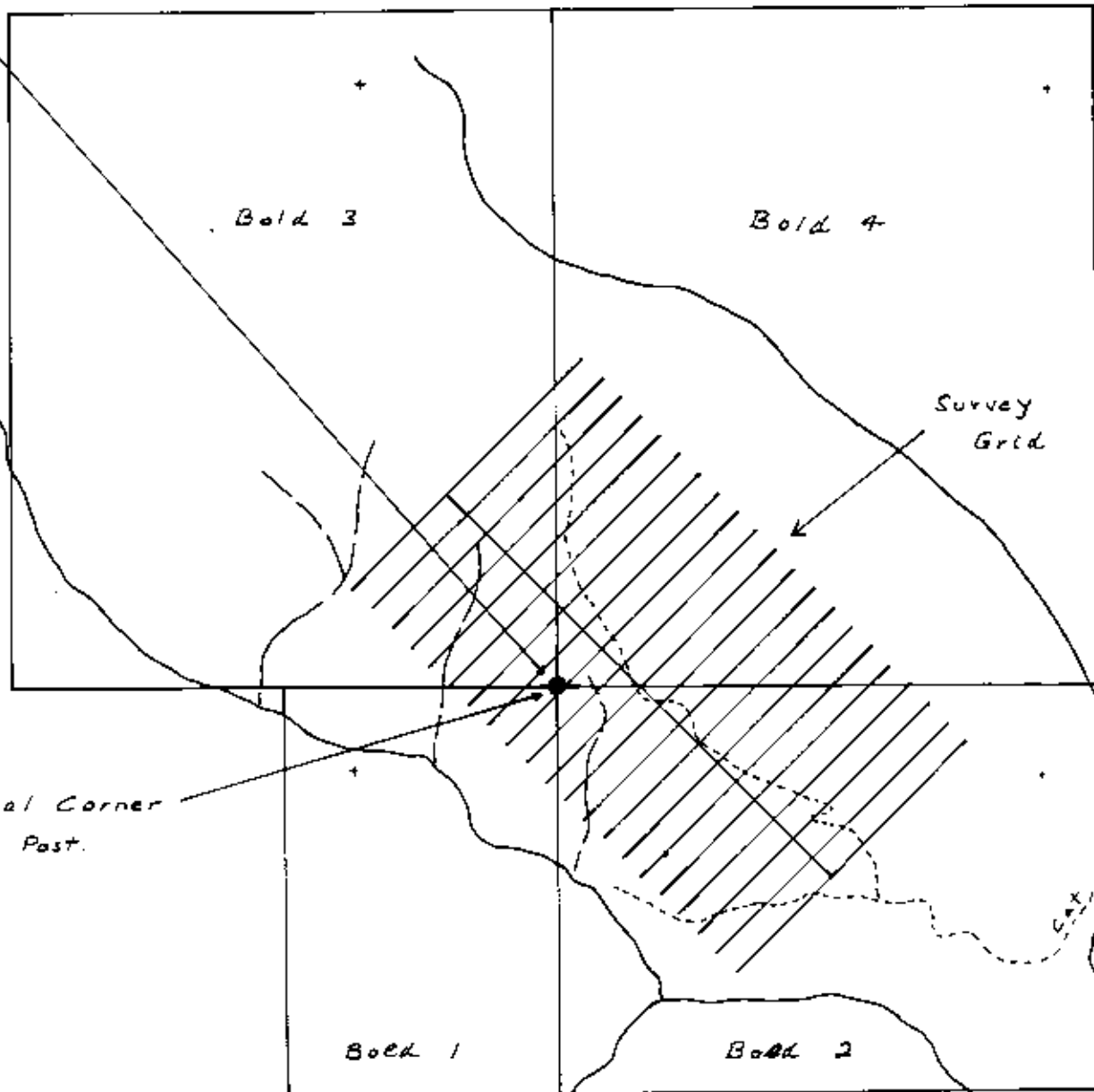
Geophysical surveys consisted of a Magnetometer Survey and a Horizontal Loop Electromagnetic Survey. Both surveys covered a total of 25.2 line kilometers. The surveys were completed by a three man crew between July 15 and July 20. The geophysical operator was J. Irish.

Geochemical surveying consisted of soil sampling and chemical analysis. A total of 958 soil samples were collected and analysed for lead, zinc, copper, silver and molybdenum. Samples were collected at 25 meter intervals along all cross lines by three samplers from June 22 to June 26.



Manson Cr.
8.5 Km.

121° 23'



55° 37'

Legal Corner
Post.

Boulder
Creek

Boulder
Lake

Omineca Road

Lakes

Ussubai

Survey
Grid

Bold 3

Bold 4

Bold 1

Bold 2

Cox
Trail

0 500 1000 M.
1: 25,000

MINERAL DEVELOPMENT BRANCH
ACQUISITION UNIT

6941

- Contours — 2500 —
- Stream or creek (Perennial, intermittent)
- Marsh
- Lake
- Road
- Jeep Road
- Trail
- Trees

IMPERIAL OIL LIMITED — MINERALS

LOCATION MAP
BOLD CLAIMS

Project No. 2144
 Mining Division Omineca
 Latitude 55° 37'
 Longitude 121° 23'
 NTS 93 N 9 W
 To Accompany a Report by
A.W. Gandy
 Dated Sept. 1978
 Map No. 2

AWG

B. Technical Data and Interpretation of Results

1. Geological Survey

a) Procedure

Mapping on the Bold property was done at a scale of 1:2500 using the grid for control.

The purpose of mapping was an attempt to ascertain the controlling geological factors for the observed mineralization.

b) Geology

The geological maps appear as Figures 3 and 4. Seven separate rock types are identified on the geological map.

The talc-ankerite schist (Unit 14b) is a white to light brown weathering soft rock that occurs in large, competent outcrops, despite the rock softness. The schists contain up to 60 percent, but generally about 30 percent, light brown medium to coarse crystals of ankerite. The remainder of the rock is composed of quartz, feldspar, talc and sericite. The quartz and feldspar form hard aggregated crystals totalling about 20 percent of the rock, while the talc and sericite occur interstitially between the more competent minerals.

The andesites (Unit 1a) are dark green, fine grained massive rocks. The outcrops are slightly foliated and show no flow tops or bottoms, indicating that individual flows are at least several meters thick. One outcrop is a medium grained clastic rock, probably an intermediate pyroclastic rock. Locally medium grained ankerite crystals are contained within the andesite.

The chlorite schists (Unit 14a) are dark green, well foliated equivalents of the andesites. The rock consists of chlorite, biotite, amphibole, feldspar and ankerite.

The limestones (Unit 7a) are white to light grey, fine grained, thinly bedded rocks. Individual beds range from 1 cm to 30 cm thick. Excellent primary features including cross-bedding, ripple marks, scour channels and flume structures are readily apparent indicating a fairly turbulent shallow water depositional environment. The limestones are locally silicified

with an accompanying increase in hardness and grain size. Pyrite is locally present as medium to coarse euhedral crystals, distributed fairly evenly throughout the rock and making up to 10 percent of the rock.

The shales (Unit 6a) are thinly bedded, black, fissile, graphitic rocks. Pyrite is occasionally present as medium to coarse crystals, making up to 10 percent of the rock.

The siltstones (Unit 6b) are white to buff colored fine grained rocks that have an appearance very similar to the limestone. They are thicker bedded and slightly more massive than the limestone and are composed of fine quartz grains, in places almost sand sized grains. Medium to coarse euhedral pyrite crystals are very common in the siltstones, making up to 15 percent of the rock.

The sericite schists (Unit 14c) are light colored well foliated sericite, muscovite, quartz, feldspar schists. They probably are well foliated siltstones but some may have been felsic volcanics. Pyrite is present locally as medium grained euhedral crystals.

The shales, siltstones and limestones form an interbedded, steeply dipping sequence occupying much of the central portion of the property. To the northeast this sequence is joined by a fairly thick andesitic volcanic sequence which in turn gives way to more shales, siltstones and limestones further northeast. This sequence strikes northwesterly and appears to dip steeply to the southwest. Locally tight fold structures, possibly attributable to soft sediment deformation, occur in the well bedded siltstones and limestones.

The whole sediment-volcanic sequence appears to sit on top of the talc-ankerite schist unit which occupies the lower slopes of the hill to the south and southwest. The actual contact was not observed in mapping but, from previous drill results, it would appear to dip at a shallow angle (15 to 20^o) to the northeast. This discordance with the attitude of the overlying sequence suggests a fault contact. However, observation of this contact in drill core from previous drilling gives the appearance of a gradational contact from siltstone to sericite schist to talc-sericite-ankerite schist.

Several steep faults are suspected and several have been interpreted on the geology map, in part from geophysical data.

According to the Geological Survey of Canada (Map 907A, 1948) the rocks in this area belong to the Pennsylvannian to Permian Cache Creek Group.

c) Mineralization

The main mineralized zone, located between Lines 4S and 6S about 25 meters southwest of baseline, consists of high grade massive ore of pyrite, galena, sphalerite and molybdenite and of silicified limestone with layers of chalcopyrite and minor bornite along bedding planes. This showing seems to consist of a narrow lense of high grade mineralization perhaps controlled by faulting and brecciation. Both soft talc schists and blocks of brecciated limestone occur in the immediate vicinity.

Assays from high grade grab samples from displaced boulders ran as follows:

<u>Sample No.</u>	<u>Pb.</u>	<u>Zn</u>	<u>Cu</u>	<u>Ag</u>	<u>Au</u>	<u>Mo</u>
7960	21.50%	5.82%	.01%	4.46 oz.	.006 oz.	N/A
7961	17.45%	0.22%	.001%	4.03 oz.	.009 oz.	N/A
7963	1.27%	N/A	N/A	0.30 oz.	N/A	2.55%

These samples are not representative of any particular width but do give some indication of the relative quantities of lead, silver, copper, moly, etc.

Other mineralization within the mapped area consists of galena bearing quartz veins within the talc-ankerite schists at Line 7S, 2+00SW and L10S, 0+50NE. These veins are in the order of 0.5 meters wide.

Outside of the grid area, but within 2 or 3 km of the property, there are several occurrences of galena, gold and silver bearing quartz veins. Several of these veins are known to contain minor scheelite and significant quantities of scheelite, cassiterite and gold have been recovered from placer mining in Boulder Creek.

2. Geochemical Surveys

a) Procedure

The soil samples were collected along the cross lines at 25 meter intervals, and were collected from an average depth of 30 cm. The samples consisted of B-horizon soils and in cases where the B horizon could not be sampled, due usually to swampy conditions, no sample was taken.

The samples were stored in standard brown Kraft paper envelopes for drying and shipment to the laboratory for trace element analysis. The samples were analysed by Bondar-Clegg Co. Ltd. in the geochemical lab located in North Vancouver, B.C.

Samples were first oven dried, then sieved to obtain the -80 mesh portion which was then subjected to a 3:1 HNO₃:HCl hot acid extraction procedure. Once the sample was in solution measurement of trace element concentrations was done by Atomic Absorption Analysis. Each sample was analysed for five elements - copper, molybdenum, lead, zinc and silver.

b) Results

The geochemical results are plotted on Maps 11 to 20. Cumulative frequency plots for lead, zinc, copper and molybdenum appear as Figures 1 to 4. Background and threshold levels were estimated from the Cumulative frequency plots and are tabulated below:

	<u>Background</u>	<u>T₁</u>	<u>T₂</u>	<u>% of samples above T₁</u>	<u>& T₂</u>
Lead	75 ppm	150 ppm	200 ppm	19%	9%
Zinc	140	280	380	15%	4%
Copper	15	80	-	0.5%	-
Molybdenum	5	16	20	2%	0.9%
Silver	0.2	1.5	-	2.3%	-

The background values were taken at the 50 percentile point on the Cumulative frequency plots. The T_2 level is chosen as the value above which a definitely anomalous population occurs and the T_1 level, which represents possibly anomalous values, is arbitrarily chosen at a point about one third of the way toward background from T_2 . T_1 , therefore, falls within the area of 'mixing' of anomalous and high background range values. Since there are so few high copper and silver values no definite anomalous population can be defined. The silver results were not plotted due to poor distribution of values in that about 60% of the samples ran 0.2 ppm. This value was arbitrarily chosen as background for silver and 1.5 ppm as T_1 , the first threshold level.

As can be seen from the foregoing table there are significant populations of anomalous lead and zinc, a small (about 2%) population of silver and molybdenum and essentially no anomalous copper.

Lead anomalies occur from one end of the grid to the other, occurring mainly on the northeast half of the grid. Seven fairly large anomalous areas are identified as anomalies A to G. In addition to those larger anomalies, numerous scattered lead highs occur over much of the surveyed area.

Anomalous area A is about 600 meters by 200 meters and includes values as high as ~~5000~~ ppm lead. The strongest part of the anomaly corresponds to the area of exposed pyrite, galena, sphalerite, chalcopyrite, bornite and molybdenite mineralization but the anomaly covers a considerably larger area to the southeast with no apparent mineralization except for a galena bearing quartz vein on Line 7S at 2+00SW. The anomaly overlaps the contact between the limestone-shale-siltstone sequence and talc-ankerite schist.

3060 ppm
letter Nov 6/78

Anomaly B is about 550 meters by 300 meters and is open and widening to the southeast. Peak anomalous value is 700 ppm lead. The area is underlain by pyrite bearing limestone, shale and siltstone and overlaps the contact with talc ankerite schist. There is no observed lead mineralization in the anomalous area.

Anomaly C covers an area of about 450 meters by 100 meters and overlies an area of sparse exposure that is possibly underlain by chlorite schists and andesitic rocks. The peak anomalous value is 400 ppm lead and there has been no sulphide mineralization found in the area of the anomaly.

Anomaly D, located just north of A, covers a small area of about 150 meters by 50 meters, reaching a peak anomalous value of 520 ppm lead. The anomaly overlies limestone and pyrite siltstone and quartz float carrying about 5% galena was located adjacent to the anomaly.

Anomalous Area E covers an area of about 450 meters by 100 meters with a peak value of 1520 ppm lead. The area is one of sparse exposure that is possibly underlain by graphitic shales, limestone and andesite. No sulphides have been observed in this area.

Anomalous Areas F and G are parallel, elongate anomalies extending for a length of 500 meters but open to the northwest. Anomaly F is about 150 meters across, while Anomaly G is open to the northeast. Peak anomalous values of 360 and 460 ppm are reached in the two anomalies. The area is one of sparse exposure and possibly fairly deep overburden that may be underlain by graphitic shales and sericite schists.

Zinc highs tend to occur scattered over much of the grid with one large anomaly occurring in the south central portion of the grid. This anomaly covers an area about 800 meters long, varying in width from 50 meters to 400 meters. Several samples reach over 1000 ppm zinc within the anomalous area. The zinc

anomaly overlaps parts of lead anomalies A, B and D and corresponds in part to the area of exposed lead-zinc-copper-molybdenum mineralization. The anomalous area is almost entirely within the area underlain by limestones, shales and siltstones and the southwest border of the anomaly follows very closely the sediment-schist contact.

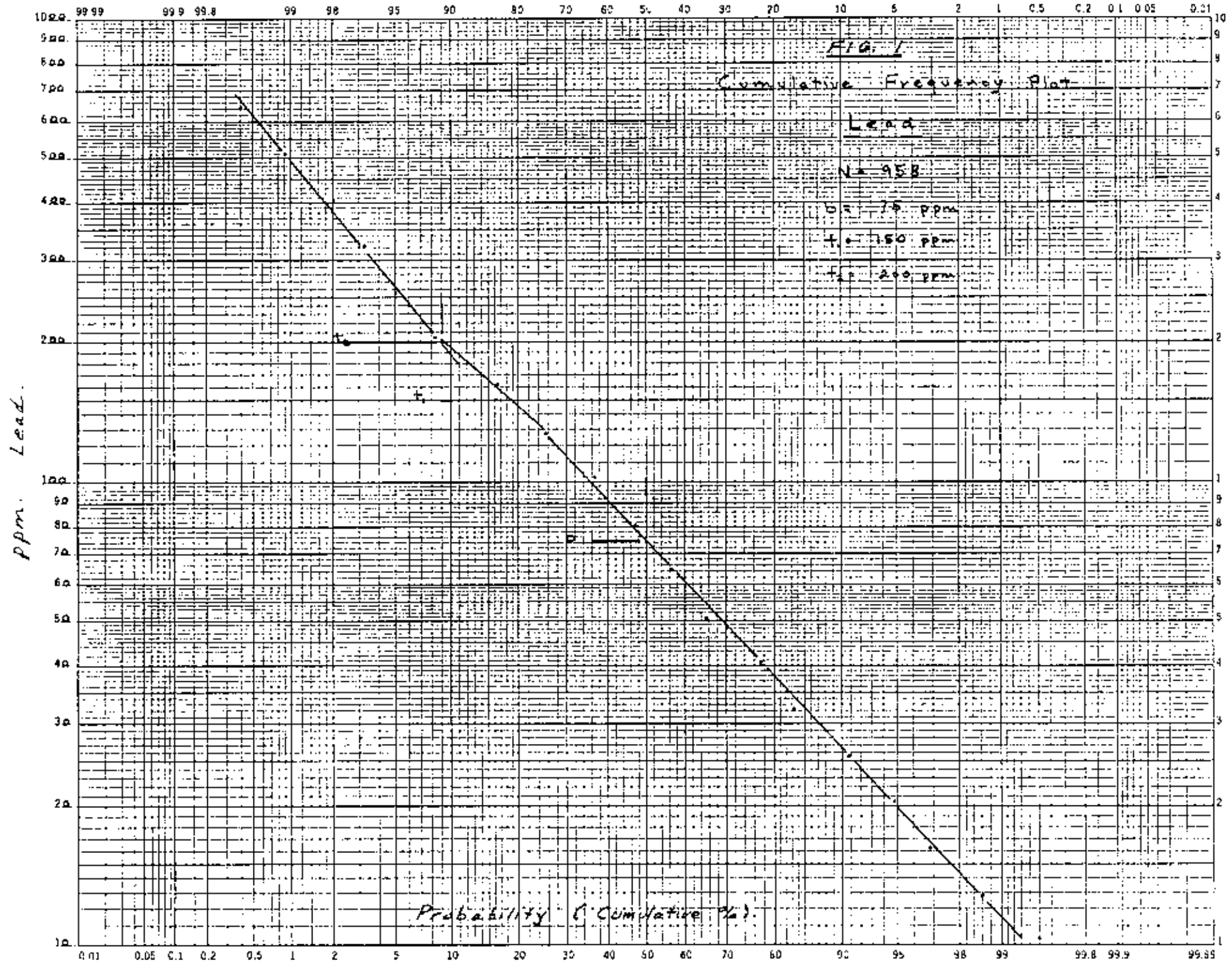
Other smaller zinc anomalies, with peak values reaching 550 to 1250 ppm, occur southwest of the large anomaly. Most of these highs can be correlated with surface or geophysical indications of graphitic shales and one anomaly (L9S-4+50SW) is coincident with lead highs. On the northwest half of the grid several other small zinc anomalies occur, reaching peak anomalous values in the order of 800 ppm zinc. The most northerly anomaly on Lines 5N and 6N is coincident with high lead values, as is a single sample anomaly on Line 1N at 1+50SW. Both of these anomalies occur in areas probably underlain by sericite schists. The other small zinc anomalies are located in areas underlain by graphitic shales or pyritic siltstones. No zinc mineralization has been observed that might explain these smaller zinc anomalies.

Only one sample ran significantly high in copper, a high of 230 ppm at 4+00NE on Line 2N. The sample lies near an outcrop of andesite and doesn't correspond to any other geochemical highs. The copper mineralization exposed around Line 5S is not reflected in the copper geochemistry.

Most of the anomalous molybdenum samples are found concentrated in two small anomalies. The first corresponds to the area of exposed molybdenite mineralization, with a peak anomalous value of 67 ppm molybdenum. The second anomaly, just north of the first, reaches a peak value of 37 ppm molybdenite. It overlies limestones and overlaps parts of both lead anomalies A and D. Both of molybdenum anomalies correspond to the parts of the large zinc anomaly. Other than the above anomalous areas molybdenum highs occur as a few single sample highs scattered over the grid. None of these appear to be significant.

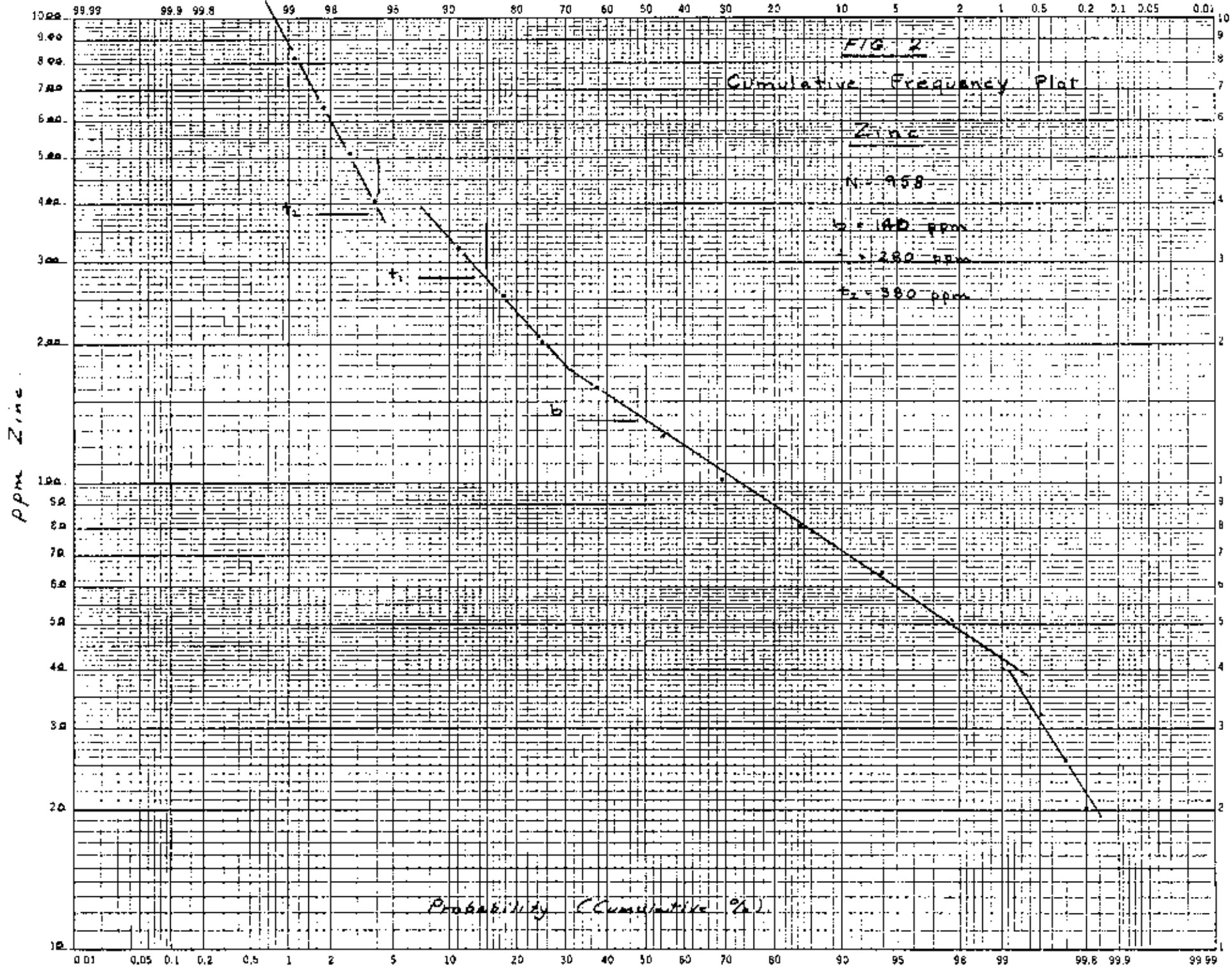
The few high silver values tend to be scattered over the grid, with no concentration of anomalous values. Some high silvers correspond to high lead areas, but many do not so there is no constant relationship between silver and lead. Silver results are generally insignificant.

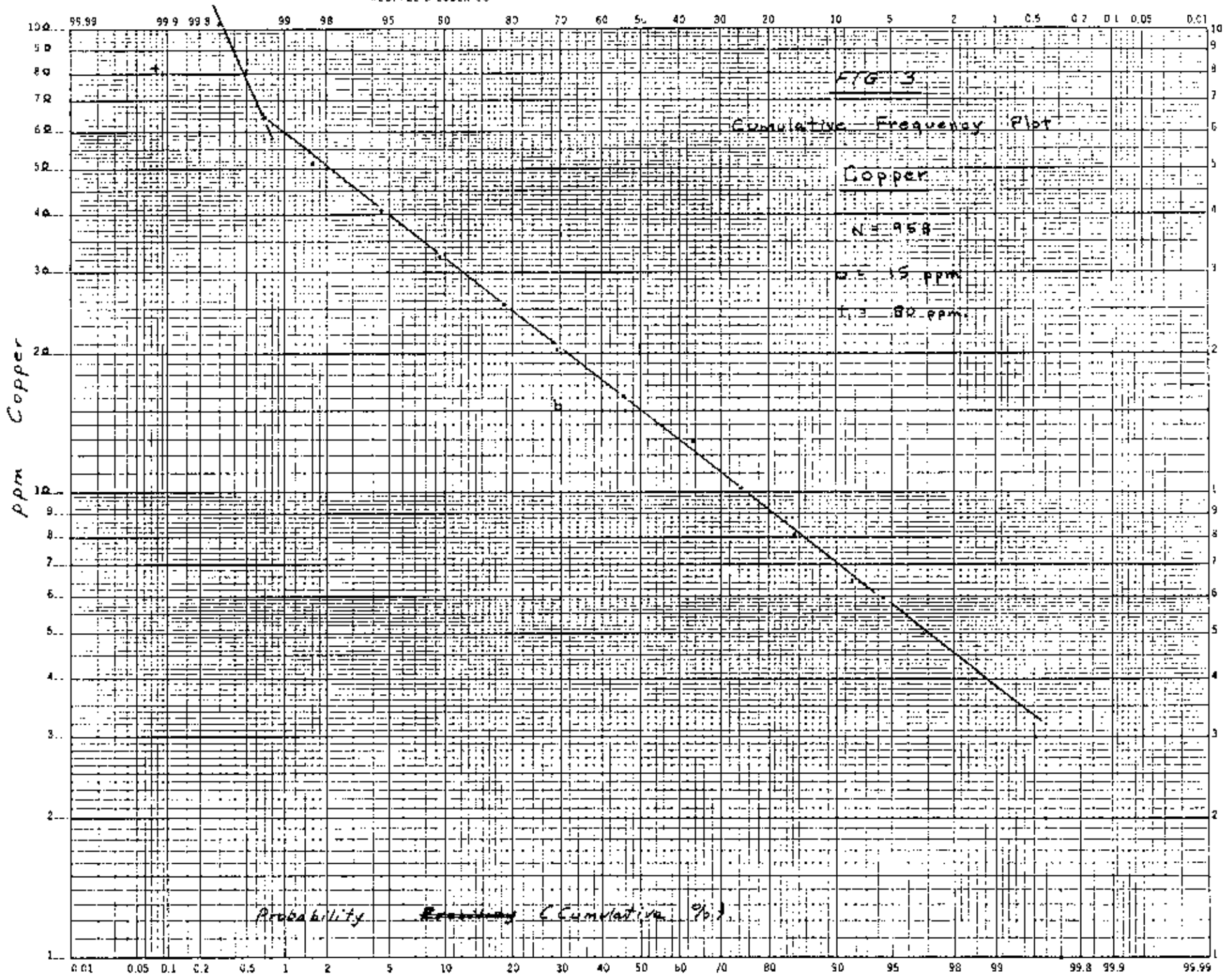
In general the lead and zinc geochemical anomalies suggest widespread lead/zinc mineralization, probably considerably more than has been located to date. Molybdenum however, is not widespread, but is concentrated in one relatively small anomalous area and the copper and silver results seem to be insignificant.

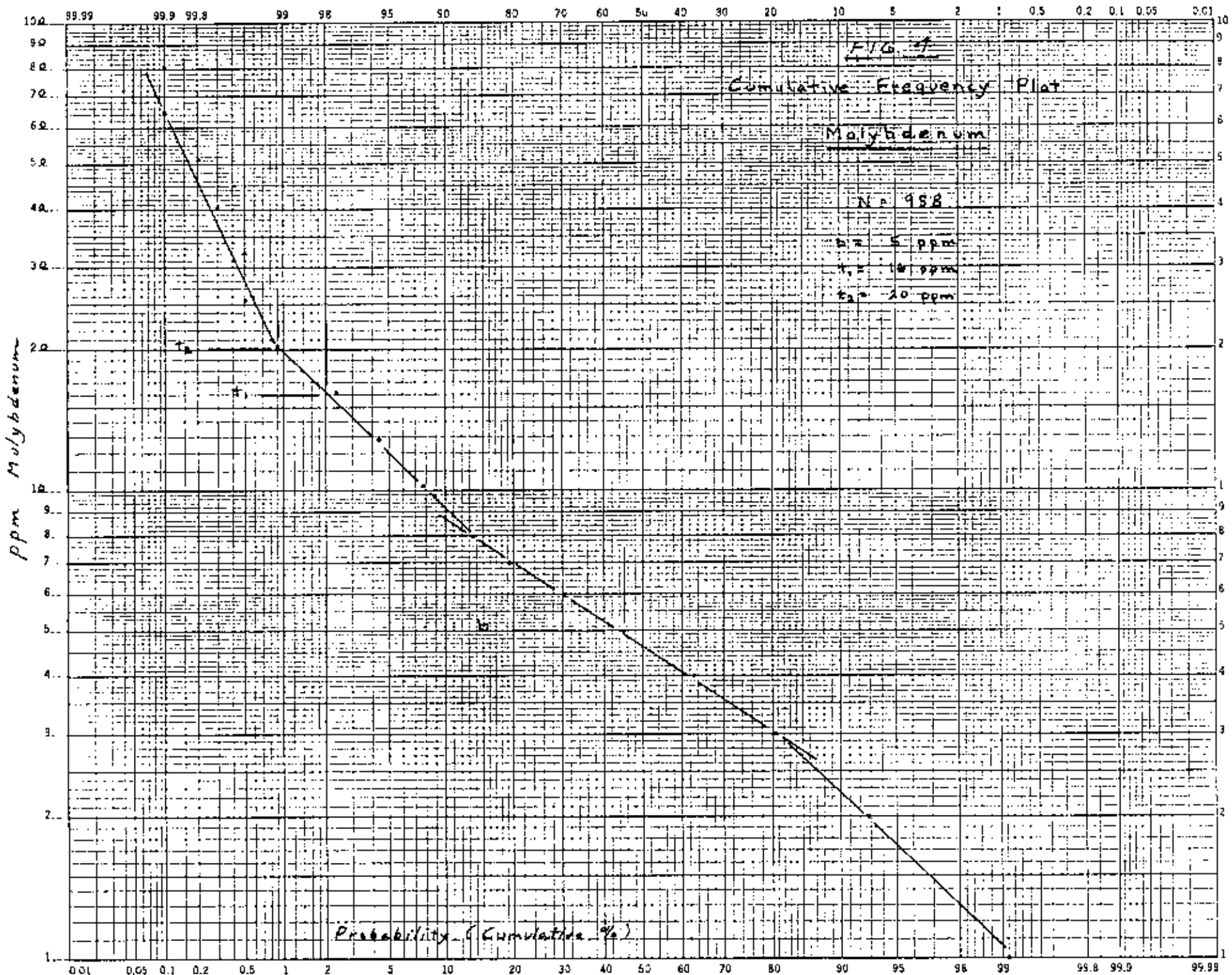


ppm. Lead.

Probability (Cumulative %)







3. Geophysical Surveys
Electromagnetic Survey

a) Procedure and Theory

The electromagnetic surveying was done with the Apex Max Min II E.M. instrument. The frequency used was 1777 Hz and the transmitter-receiver separation was 100 meters. Measurements were taken at 50 meter intervals along the survey lines over neutral ground and at 25 meter intervals over anomalous areas.

In the Horizontal Loop E.M. method two coils are moved along a survey line at a constant spacing. The survey lines are oriented approximately perpendicular to the expected geological strike. The coils are held horizontal and co-planer and are connected by a reference cable. The transmitting coil (Tx) transmits an A.C. electrical pulse which induces an electromagnetic field in any nearby conductive subsurface material. The resultant E.M. field is measured at the receiving coil (Rx). Various components of the secondary E.M. field are measured including the amplitude (in-phase reading), measured as a percentage of the primary field, and the phase shift or-out-of-phase variations.

The results are presented in profile form with readings plotted at the mid-point between the two coils. The location of a conductor is generally indicated by the peak negative in-phase and out-of-phase readings, or for wider steeply dipping conductors, the edges of the conductive zone are half the coil separation from the point where the curves pass through zero. In many cases estimates of conductor width, depth, dip and conductivity can be made. The method, however, has depth limitations and is generally considered effective only to a depth of approximately one half the coil separation.

The method is sensitive to several forms of conductors (or low resistivity material) including graphitic sediments or schists, coal, metallic sulphides, saline solutions in stratigraphic horizons or overburden, or cultural features such as buried pipe or metallic fencing.

b) Results

The E.M. profiles appear on Maps 5 and 6. Several wide (up to 340 m), strong, continuous conductive zones are immediately apparent. All of these conductors are due to beds of highly graphitic shale, with non-conductive siltstone, limestone, andesitic volcanics and schists between the shale beds.

Several of the conductive zones appear to pinch out, while others are displaced probably by north-south faulting as interpreted on the geological maps.

The main mineralization zone, in which fairly massive sulphide mineralization occurs, was not detected by the E.M. survey, suggesting that the mineralization observed must not be very continuous.

The E.M. survey is more useful as a mapping tool than as a direct guide to mineralization.

Magnetic Survey

a) Procedure

The magnetic surveying was done using a Geometrics 6816 Proton Precession Magnetometer which measures total magnetic field strength. Readings were taken along the survey lines at 25 meter intervals and along the base line at 50 meter intervals. Diurnal corrections were made by initially surveying the complete base line in order to establish base readings every 100 meters and then tying each cross line into a base line station at the start and completion of each loop. The time elapsed between tie ins to an established base reading never exceeded 1 hour. (Field notes of the base line tie-ins are included in the appendix.)

The corrected readings are presented on both a contour map and a map of profiles along each surveyed line. The total magnetic field in the area surveyed is about $59,000 \pm 500$ gammas and the readings plotted on the contour map are relative to 58,000 gammas - a reading of 58,900 gammas is plotted as 950 gammas. On the profiles a background value of 58,850 gammas was subtracted from each reading resulting in positive (highs) and negative (lows) areas on each profile - a reading of 58,950 gammas is plotted as + 100 gammas.

b) Results

The magnetic survey results are shown on Maps 7 to 10.

Several magnetic highs are apparent. A narrow, shallow high (about 650-700 gammas) trends northwesterly across Lines 9S to 4S near the southwest edge of the grid. This magnetic high flanks an apparent contact (based on E.M. survey) between conductive graphitic shales and talc-ankerite schists. The contact is likely a fault contact and the magnetic feature could be due to ultra-mafic intrusion along the fault, which is a common occurrence along the Manson and Pinchi fault zones. No ultramafic rocks have been observed on the Bold property however.

A second magnetic high (about 700 gammas) is a broader feature centered at 0+75NE on Lines 6S and 7S. This high lies within the sediments overlying the talc-ankerite schists. No magnetic rocks have been found on surface that might explain the magnetic high. It is possible that some intrusive is present below surface in this area, giving rise to the broad magnetic feature.

Several additional narrow magnetic highs occur within the andesitic volcanics on Lines 2S, 1S, 1N and 2N. These highs could reflect the presence of mafic dykes or sills associated with the andesitic flows.

C. Conclusions and Recommendations

The geological, geochemical and geophysical surveys done in 1978 can be interpreted to suggest that a large, zoned, multi-element hydrothermal system, not unlike the 'porphyry copper' model, may exist on the Bold property. The suggestion is that the mineralization, alteration and fault structures observed at surface represent the upper or peripheral levels of such a system.

Evidence that lends support to this concept includes:

- 1) the distribution of metals as seen in observed mineralization with widespread gold, silver and galena veins distributed in a peripheral position to molybdenum, copper and zinc mineralization.
- 2) the presence of minor tungsten and tin within the mineralized system.
- 3) the fairly widespread distribution of pyrite, found in all rock types.
- 4) the widespread distribution of lead and zinc in soils relative to the more restricted molybdenum soil anomaly.
- 5) the suggestion, from the magnetic survey, of intrusions beneath the exposed sediments, volcanics and schists.
- 6) the possibility that the talc-ankerite-sericite schists and the presence of ankerite in all rock types represents hydrothermal alteration.

It also is likely that much of the alteration, silicification and sulphide mineralization is related to the Manson Creek fault zone which apparently passes across the property, following the Valley of Boulder Creek. Faulting, of course, is usually an integral part of 'porphyry copper' deposits.

Future exploration work on the Bold property should be directed toward definition of the above described model and should include bulldozer trenching of geochemical anomalies and the drilling of a deep hole (at least 350 meters) to test for additional evidence of an intrusive/porphyry system at depth. The drill hole should be located near the molybdenum and copper mineralization. Any further drilling would be contingent upon interpretation of the first deep hole.

R. W. Oddy

APPENDIX

P'S				P16				BOULDER CREEK				15.795			
BOULDER CREEK GRID				BL continued						CORR. VALUE		REMA			
BL TIE TOGETHER				STATION		TIME		READING		CORR.		CORR. VALUE		REMA	
				BL/EN		10:05		58766		+7		58773			
STATION		TIME		READING		CORR.		CORRECTED VALUE		REMARKS					
4N				772		+6		778							
14N				796		+4		800							
BL/10N		9:29		58827		0		58827							
				792		-1		791							
9N		9:31		784		-3		781		3N		10:09		779 +2 781	
10N		9:33		832		-5		827		5N		10:13		776 -3 773 T	
										3N		10:17		773 +8 781	
9N		9:36		783		-2		781							
				762		-3		759		2N				773 +10 783	
8N				789		-3		786						771 +10 781	
				782		-4		778		1N		10:22		802 +11 813	
7N		9:40		771		-4		767		3N		10:26		767 +14 781 T	
9N		9:44		787		-6		781		T					
										1N		10:30		802 +11 813	
7N		9:52		765		+2		767						821 +14 835	
				776		+1		777		00		10:53		812 +17 829	
6N				765		+1		766		1N		10:36		790 +23 813 T	
				788		+1		789							
5N		9:56		773		0		773		00		10:40		802 +25 829	
7N		9:59		768		-1		767		T				791 +27 818	
										15				799 +29 826	

P.17 BOULDER CREEK 15.7.78						P.18 BOULDER CREEK 15.7.78					
BL cont.						BL cont.					
STATION	TIME	LEAD	COORD.	CORR VAL	REMARKS	STATION	TIME	LEAD	COORD.	CORR VAL	REMARKS
		58791	+31	58822		BL/75	11:37	58962	+45	59007	
25	10:45	802	+33	835				815	+42	58857	
40	10:49	785	+40	829	T	85	11:40	960	+40	59000	
						75	11:43	972	+35	59007	T
25	10:55	802	+33	835							
		815	+34	849		85	11:47	58953	+47	59000	
75		834	+35	869	T			59205	+46	251	
		837	+37	874		95		59064	+45	109	
45	11:00	868	+39	906				58961	+45	006	
25	11:04	793	+42	835	T	105	11:54	59042	+44	086	
						85	12:00	58959	+41	59000	T
45	11:09	867	+39	906							
		852	+40	58892							
55		990	+41	59031	T						
		972	+42	59014							
65	11:15	976	+43	59019							
45	11:20	858	+48	58906	T						
65	11:27	58984	+35	59019							
		59004	+38	042							
75	11:29	58966	+41	007							
65	11:32	58971	+48	59019	T						

ITEMIZED COST STATEMENT

Linecutting (June 3 to 10)

27.2 line kilometers at \$200/line km. \$5440.00
(excludes transportation)

Geophysical Surveys (July 15 to 20)

25.2 line kilometers - Electromagnetic and
Magnetometer Surveys at \$80/line km. 2016.00
(excludes transportation and accomodation)

Geochemical Survey (June 22 to 26)

Sampling

15 man-days at \$40/man-day 600.00
(excludes transportation and accomodation)

Analyses

958 Cu, Pb, Zn, Ag analyses at \$3.40/sample 3257.20
958 Mo analyses at \$1.30/sample 1245.40
958 sample preparation at 0.35/sample 335.30
5437.90

Geological Mapping (June 22 to 29)

8 man-days at \$60/man-day 480.00
(excludes transportation and accomodation)

Food and Accomodation

40 man-days at \$30/man-day 1200.00

Transportation

11.4 hours helicopter (206B) at \$335/hr. 3819.00

Report Preparation

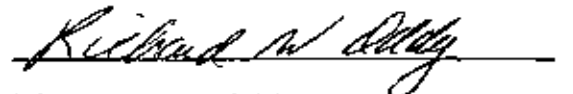
Writing - 1 man for 4 days at \$125/day 500.00
Drafting - 1 man for 12 days at \$60/day 720.00
1220.00

TOTAL COST \$19,612.90

STATEMENT OF QUALIFICATIONS

I, Richard W. Oddy, of Vancouver, British Columbia, hereby certify the following qualifications:

- a) I obtained a B.Sc. degree in geology from the University of British Columbia in 1962 and a M.Sc. degree in geology from the University of Manitoba in 1966.
- b) I have been practising my profession as a geologist in Canada for sixteen years.
- c) My experience includes use of geophysical and geochemical exploration techniques in addition to geological experience.
- d) I am a fellow of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.




Richard W. Oddy
Geologist
Esso Resources Canada Limited

STATEMENT OF QUALIFICATIONS

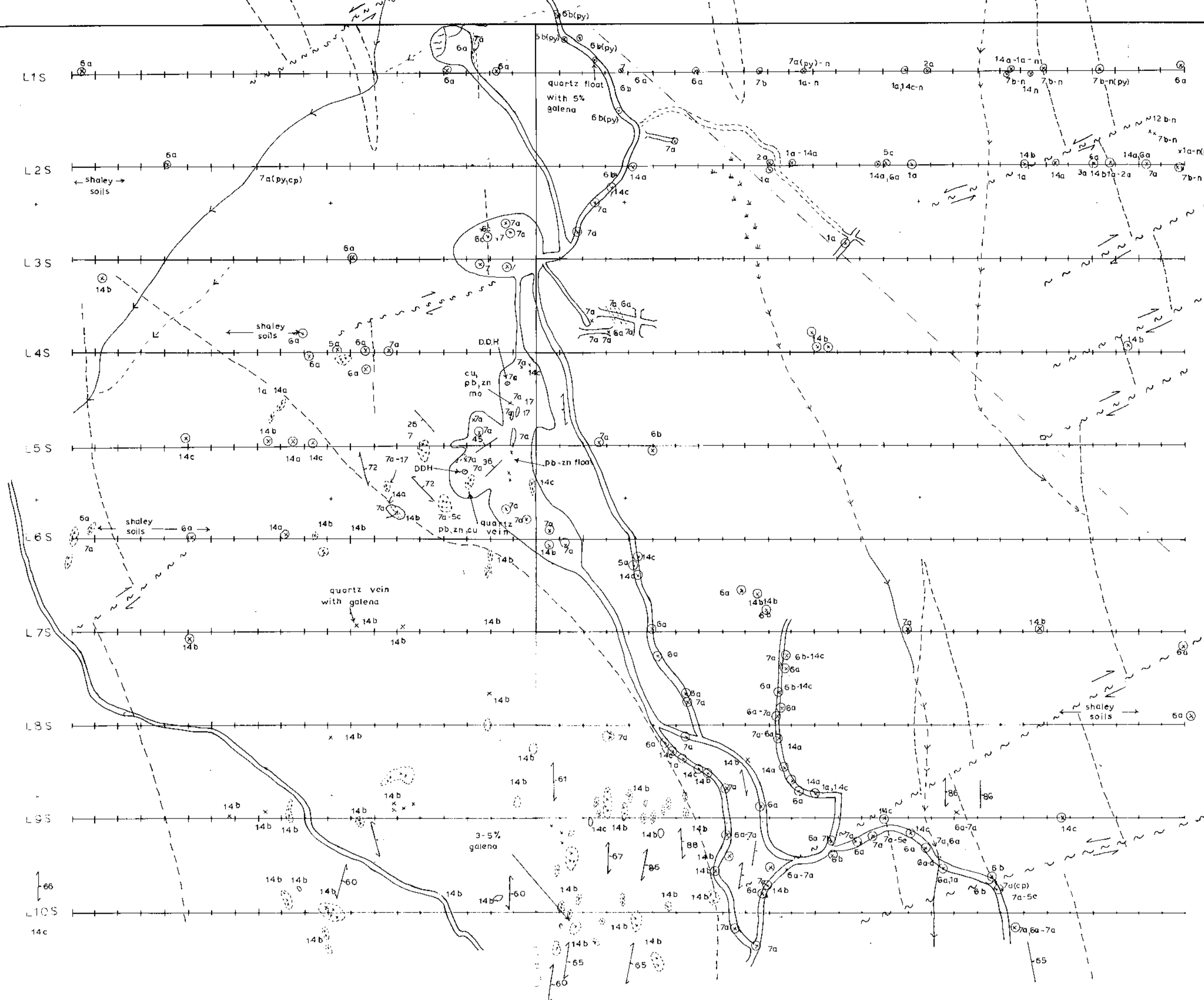
I, Jeff Irish, of 84 Waringstown Drive, Scarborough, Ontario M1R 4H4 make the following declaration in regard to my qualifications as a geophysical operator:

- a) I have completed three years of the Engineering Science Program, Geophysics Option, at the University of Toronto, leading toward the degree of Bachelor of Applied Science.
- b) During the summer months of 1976 and 1977, I was employed with Texasgulf Canada Limited as a geophysical operator and crew chief involved in various ground geophysics surveys.
- c) During the summer of 1978, I was employed by Esso Minerals Canada as a geophysical operator carrying out I.P., Gravity, Magnetics and Electromagnetics surveys in various parts of Canada including British Columbia.


Jeff Irish 28.7.78

LIST OF REFERENCES

- Asses. Report 1659, Geological and Geochemical Report on the ASP Mineral Claims, by W.G. Stevenson (1968)
- Asses. Report 3864, Geochemical Report on the Reynolds, Spaner, Stroh, Leslie, Wright, Doyle and Pattenden Claims, Omineca M.D. by R. Wolfe (1972)
- Asses. Report 4611, Report on Induced Polarization Survey, Manson Creek Project, by J.M. Haynes and J. Klein (1973)
- G.E.M. 1972 (p. 450) and 1973 (p. 367)
- G.S.C. Memior 252, Fort St. James Map Area, B.C. by J.A. Armstrong, (1965)
- G.S.C. Paper 45-9, Manson Creek Map Area, B.C. by J.A. Armstrong and J.B. Thurber (1945)
- Private Report, Geological, Geochemical and Geophysical Report on the Boulder Creek Prospect, by J.H. Montgomery (1973)



LEGEND

- VOLCANIC**
- 1 MAFIC
 1a Andesite
 1b Basalt
 1c Mafic Tuff
- 2 INTERMEDIATE
 2a Dacite
 2b Intermediate Tuff
 2c Intermediate Breccia
 2d Intermediate Grit, Sandstone
- 3 FELSIC
 3a Rhyolite
 3b Felsic Tuff
 3c Felsic Breccia
- SEDIMENTARY**
- 4 Conglomerate
- 5a Sandstone
 5b Greywacke
 5c Quartzite
- 6a Shale
 6b Siltstone
 6c Argillite
- 7a Limestone
 7b Dolomite
- 8 Chert
- INTRUSIVE**
- 9 SYENITIC
- 10 FELSIC
 11 INTERMEDIATE
 12 MAFIC
 13 ULTRAMAFIC
- METAMORPHIC**
- 14 SCHIST
 14a Chlorite Carbonate Schist
 14b Talc Ankerite Schist
 14c Sericite Schist
- a = Ankerite

SYMBOLS

- Unfractured area (dotted lines)
- Rock surface area of exposure (thick line with X's)
- Concealed boundary (dashed line with dots)
- Bedding (not known) (horizontal, inclined, vertical, overturned, dip unknown)
- Bedding (not known) (horizontal, vertical, dip unknown)
- Bedding (dip unknown) (horizontal, vertical, dip unknown)
- Schistosity, quartzosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown)
- Lineation (axis of minor folds) (horizontal, inclined, vertical)
- Dip-fold (arrow indicates plunge)
- Fault (defined, approximate, interpreted)
- Fault (defined, vertical)
- Fault (radial, circular, and downthrow sets, arrows indicate relative movement)
- Thrust Fault (approximate, interpreted)
- Showering and slip
- Joint (horizontal, inclined, vertical, dip unknown)
- Syncline (defined, approximate)
- Anticline (defined, approximate)
- Anticline and syncline (overturned)
- Tectonic (weak, moderate, strong)

NOTE: Geological symbols used in part on geophysical data.

- Trunk (dashed line)
- Adit or tunnel (solid line with cross-ticks)
- Block dump or tailings (stippled area)
- Quarry or mine (star symbol)
- Shalt, rags, water (square symbols)
- Diamond-drill hole (circle with cross)

- Contour 2500 (dashed line)
- Stream or creek (Permanent, intermittent) (solid line with wavy lines)
- Mudch (dotted line)
- Lake (solid line with wavy lines)
- Reef (dotted line)
- Step Head (solid line with wavy lines)
- Fold (solid line with wavy lines)
- Free (solid line)

Part 1 of 2 6944

IMPERIAL OIL LIMITED - MINERALS

Bold Project

South Sheet

GEOLOGY

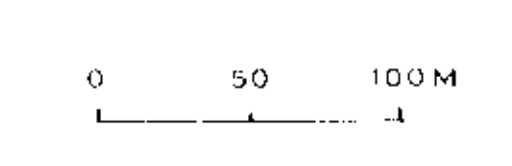
Project No. 2144 Mining Division Omineca

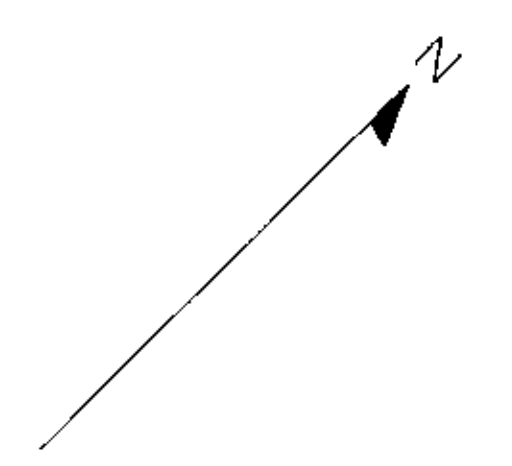
Latitude 55° 37' Longitude 124° 23'

N.T.S. 93N 9W Scale 1:2500

In accordance with Report by R.C. White

Dated Sept. 1938 Map No. 3





LEGEND

- VOLCANIC
 - 1 MAFIC
 - 1a Andesite
 - 1b Basalt
 - 1c Mafic Tuff
 - 2 INTERMEDIATE
 - 2a Dacite
 - 2b Intermediate Tuff
 - 2c Intermediate Breccia
 - 2d Intermediate Grit, Sandstone
 - 3 FELSIC
 - 3a Rhyolite
 - 3b Felsic Tuff
 - 3c Felsic Breccia
 - SEDIMENTARY
 - 4 Conglomerate
 - 5a Sandstone
 - 5b Greywacke
 - 5c Quartzite
 - 6a Shale
 - 6b Siltstone
 - 6c Argillite
 - 7a Limestone
 - 7b Dolomite
 - 8 Chert
 - INTRUSIVE
 - 9 SYENITIC
 - 10 FELSIC
 - 11 INTERMEDIATE
 - 12 MAFIC
 - 13 ULTRAMAFIC
 - METAMORPHIC
 - 14 SCHIST
 - 14a Chlorite Carbonate Schist
 - 14b Talc Ankerite Schist
 - 14c Sericite Schist
- n = Ankerite

- SYMBOLS
- Contoured area
 - North-south zone of volcanic flow
 - Approximate horizontal, inclined, vertical, overthrust, and other structural features
 - Approximate vertical, inclined, horizontal, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features
 - Approximate horizontal, inclined, vertical, and other structural features

NOTE: Geological contacts based in part on geophysical data.

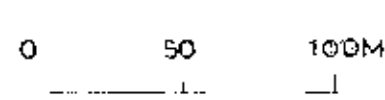
- Tract
- Full or tunnel
- House dump or filling
- Quarry or mine
- Shall (see symbol)
- Unmanned drift hole
- Contour
- Stream or creek
- Marsh
- Lake
- Flow
- Deep flow
- Trail
- Tree

Part 1 of 2
6941

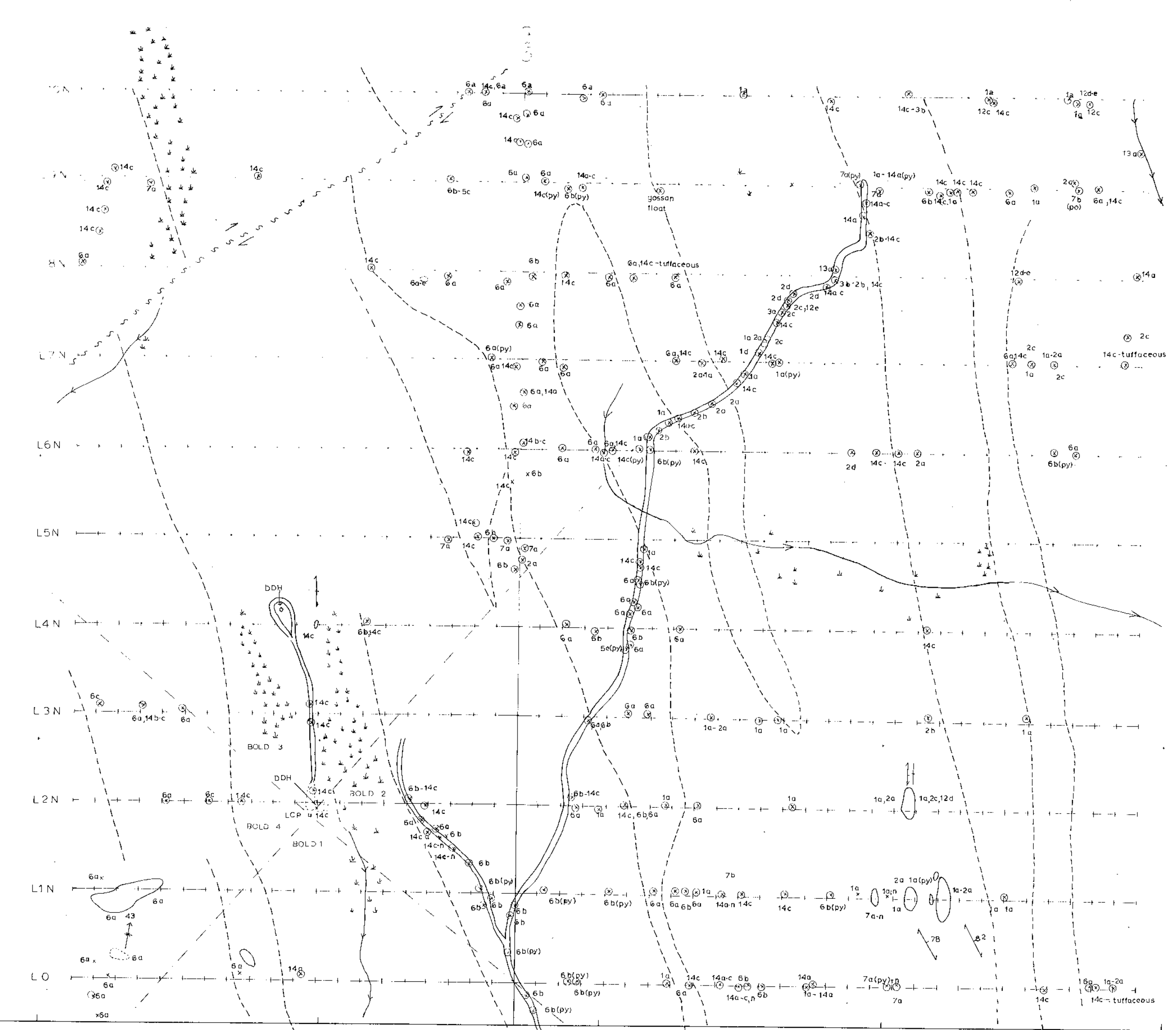
IMPERIAL OIL LIMITED - MINERALS

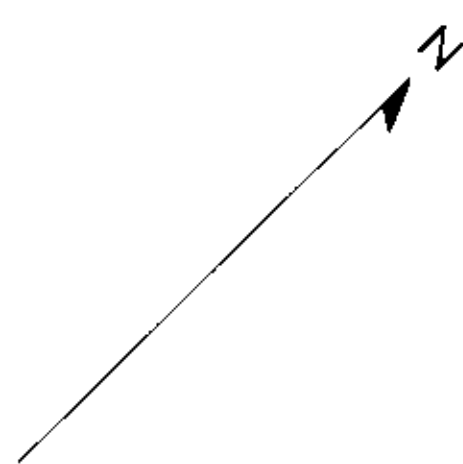
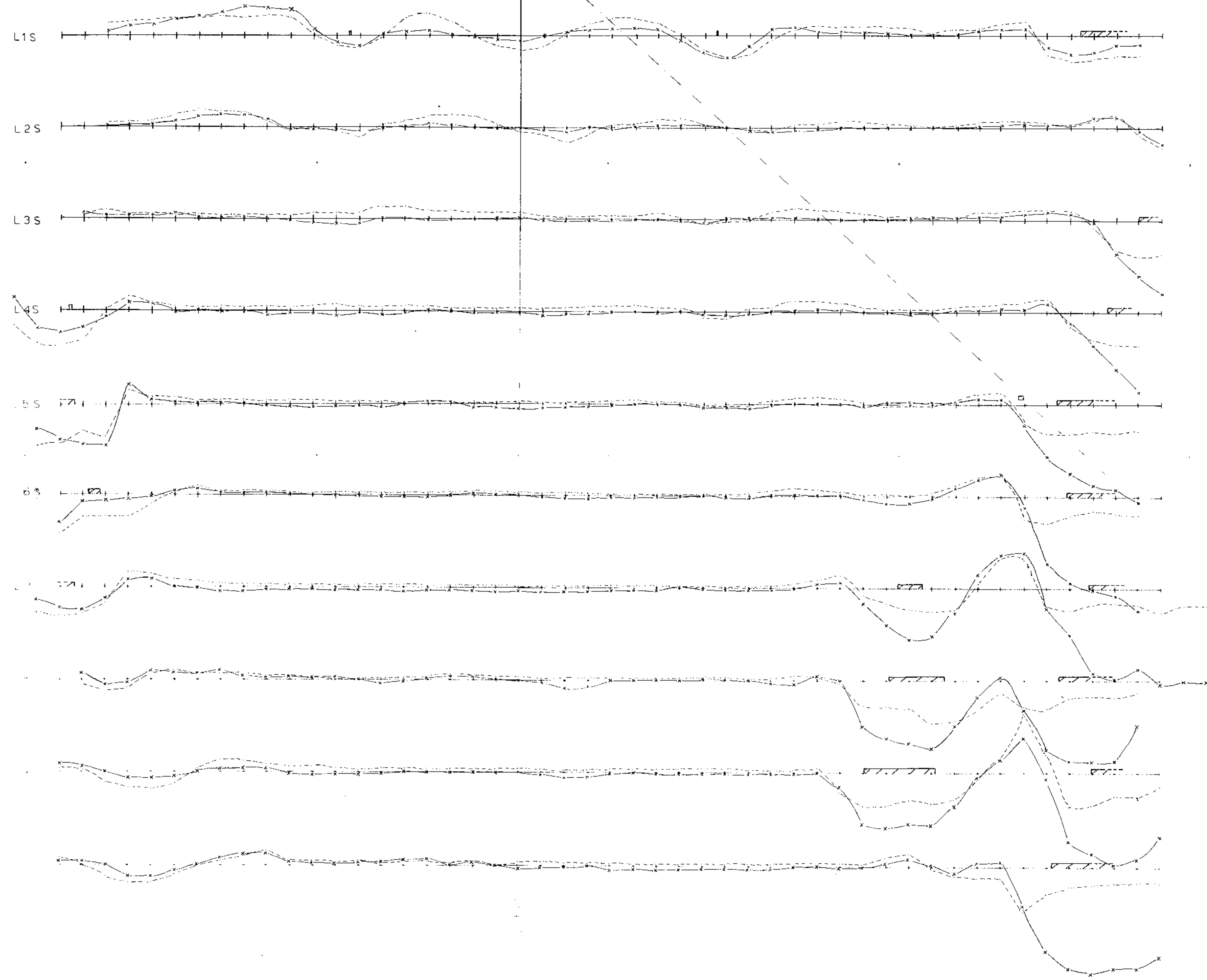
**Bold Project
North Sheet
GEOLOGY**

Project No. 2144 Mining Division Omineca
Latitude 55° 37' Longitude 124° 23'
N11 93N9W Scale 1:2500



Drawn by S.C. / J.T.
Map No. 4





ELECTROMAGNETIC SURVEY

LEGEND
 INSTRUMENT - MAXMIN II
 FREQUENCY - 1777 Hz
 a = 100 m
 VERTICAL SCALE - 1cm = 20%
 COMPONENT - In Phase ————
 Out of Phase - - - - -
 OPERATOR - J. Irish

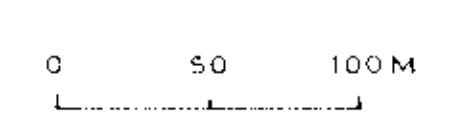
SYMBOLS
 (This section contains a detailed list of symbols used in the survey, such as 'X (XXX) X' for magnetic anomalies, '---' for geological boundaries, and various symbols for 'In Phase' and 'Out of Phase' components. Some symbols are accompanied by small diagrams or examples.)

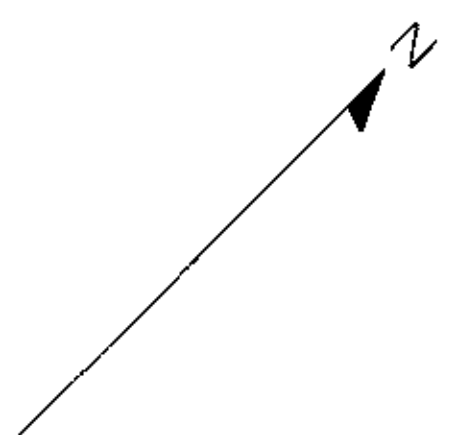
(This section contains additional symbols and notes, including a note about the scale and a reference to a specific survey point.)

(This section contains further symbols and notes, including a note about the scale and a reference to a specific survey point.)

Part 1 of 2 6941

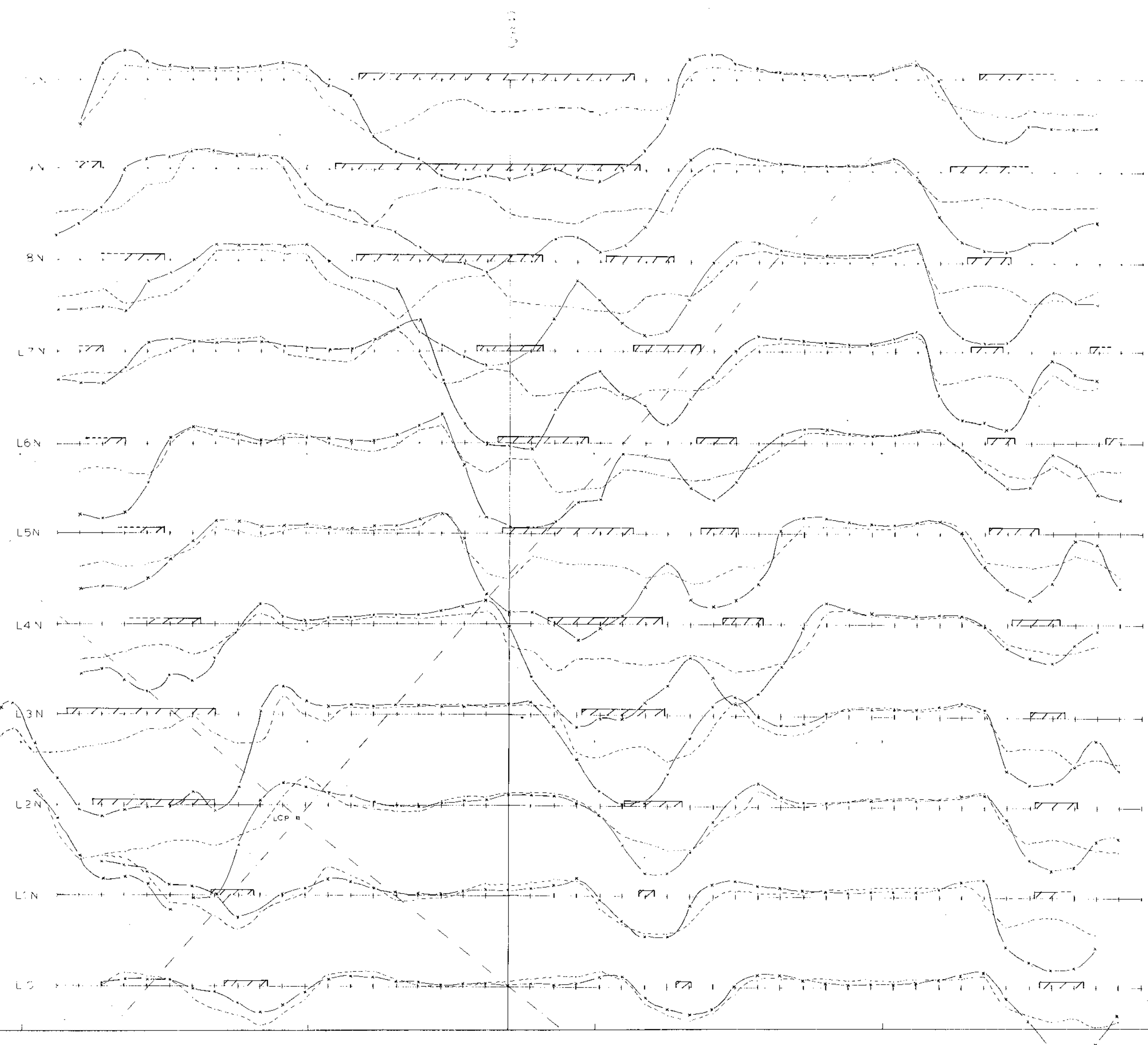
IMPERIAL OIL LIMITED - MINERALS
Bold Project
 South Sheet
ELECTROMAGNETIC SURVEY
 Project No. 2144 Mining Division Omineca
 Loc. No. 55° 37' Longitude 124° 23'
 W. 93N 0W Scale 1:2500
 Date 1/73 J. W. Doherty
 Map No. 5





ELECTROMAGNETIC SURVEY

LEGEND
INSTRUMENT - MAXMIN II
FREQUENCY - 1777 Hz
a=100 m
VERTICAL SCALE - 1cm = 20%
COMPONENT - In Phase
Out of Phase
OPERATOR - J. Irish

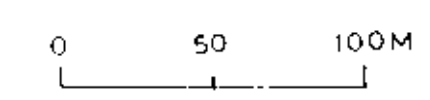


SYMBOLS
Dike covered area
Rock matrix area of section
Geological boundary
Bedding top known
Bedding top unknown
Schistosity, gneissosity, cleavage
Lenses, axes of mass faults
Dip fold (arrow indicates plunge)
Fault (defined, approximate, interpreted)
Fault (dipal circle indicates downthrow side, arrows indicate relative movement)
Thrust fault (approximate, interpreted)
Shearing and slip
Joint (horizontal, inclined, vertical, dip unknown)
Spindle (defined, approximate)
Anticline (defined, approximate)
Syncline (defined, approximate)
Intensify (dark, moderate, strong)

Contours
Streams or creeks (direction of movement)
Marsh
Lake
Road
Ditch
Fence

Part 1 of 2
6941

IMPHAL OIL LIMITED - MINERALS
Boid Project
North Sheet
ELECTROMAGNETIC SURVEY
Project No. 2144 Mining Division Omineca
Latitude 55° 37' Longitude 124° 23'
N15 93NW Scale 1:2500
Prepared by R. W. Baily
Date Sept 1980 Map No. 6





GEOMAGNETIC SURVEY
CONTOUR MAP

LEGEND
INSTRUMENT : Geometrics GB16
 Total Field Proton
 Precision Magnetometer
CONTOUR INTERVAL : 100 Gammas
BACKGROUND : 58,800 Gammas
OPERATOR : J. Irish

GEOMAGNETIC MINIMUM
 LOCAL MINIMUM

SYMBOLS

- Drill covered area
- Rock outcrop, area of outcrop, flat
- Geological boundary (defined, approximate, interpreted)
- Bedding, base known (horizontal, inclined, vertical, overturned, dip unknown)
- Bedding, top unknown (inclined, vertical, dip unknown)
- Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown)
- Limestone, axes of minor folds (horizontal, inclined, vertical)
- Diap fold (arrow indicates plunge)
- Fault (defined, approximate, interpreted)
- Fault (inclined, vertical)
- Fault (vertical, strike-slip)
- Thrust fault (approximate, interpreted)
- Shearing and dip
- Joint (horizontal, inclined, vertical, dip unknown)
- Syncline (defined, approximate)
- Anticline (defined, approximate)
- Anticline and syncline (overturned)
- Intensity (weak, moderate, strong)

Trench

Adit or tunnel

Rock dump or tailings

Quarry or mine

Shaft, mine, vent

Downward drill hole

Contours

Stream or creek (Perennial, intermittent)

Lake

Road

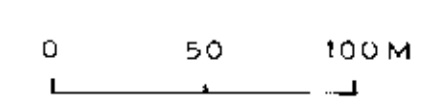
Deep Road

Trail

Fence

Part 1 of 2 **6941**

IMPERIAL OIL LIMITED - MINERALS
Bold Project
 South Sheet
MAGNETOMETER CONTOUR MAP
 Project No. 2144 Mining Division - Quitoqueca
 Latitude 55° 37' Longitude 124° 23'
 NTS 93N 9W Scale 1:2500
 In Company A Report By *R. W. Kelly*
 Dated JULY 15-20, 1978
 Map No. 7



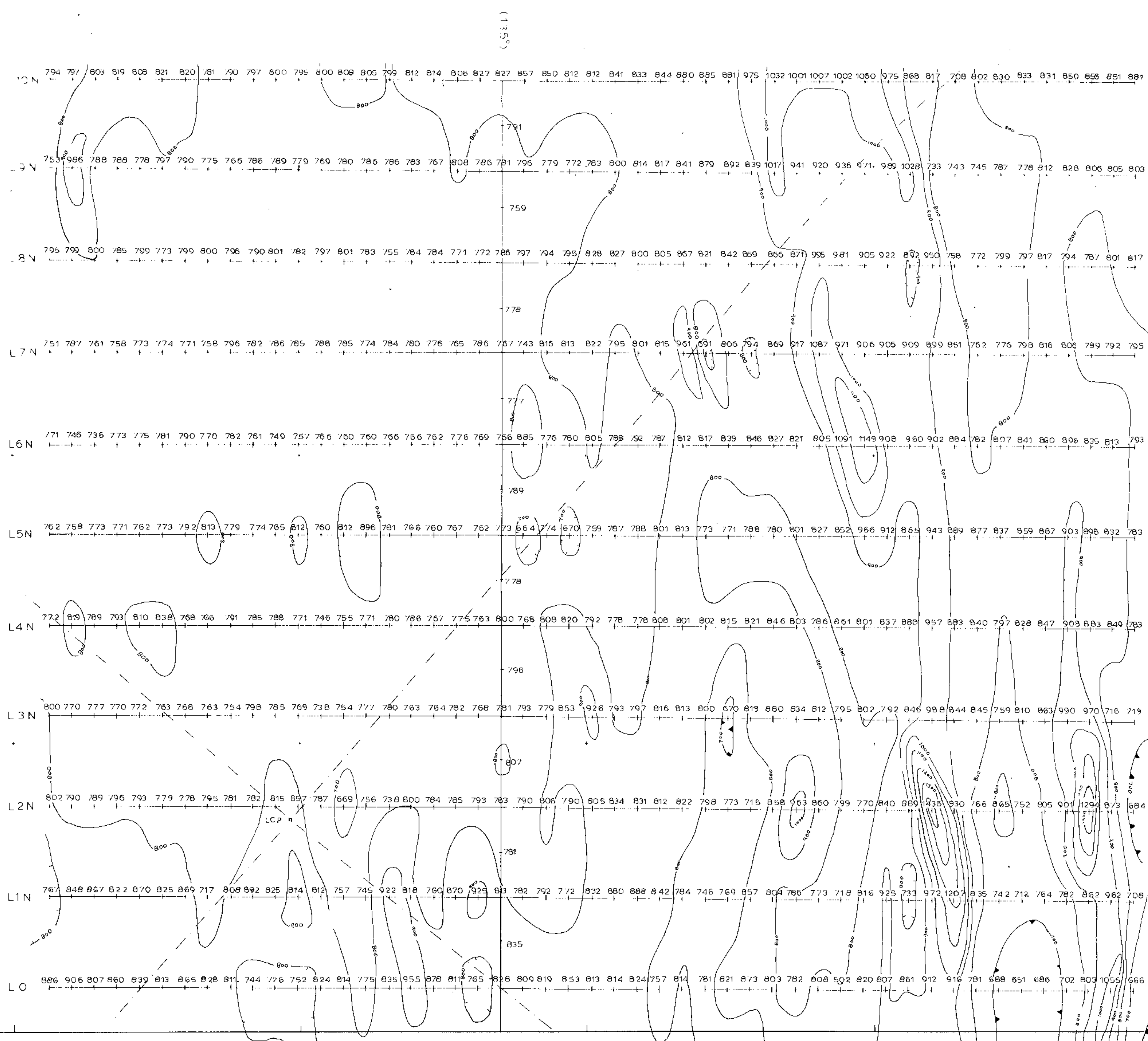
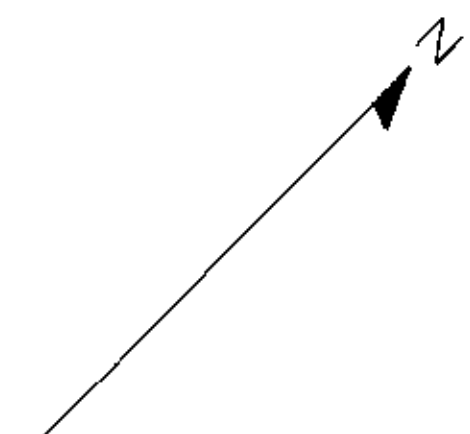
GEOMAGNETIC SURVEY
CONTOUR MAP

LEGEND

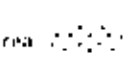
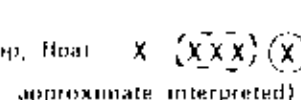
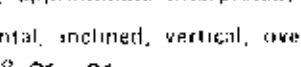
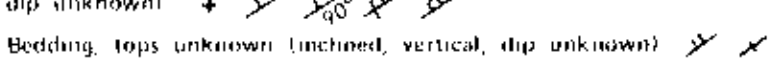
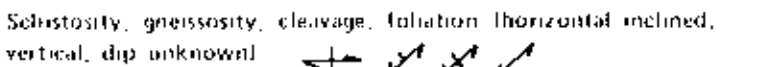
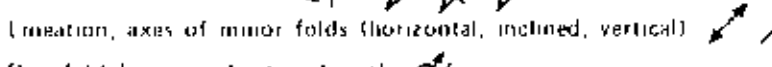
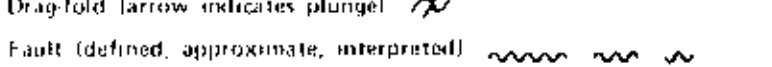
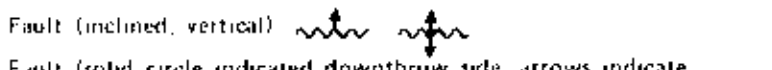
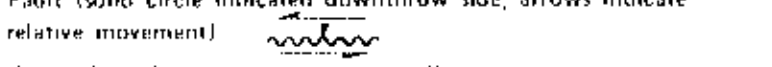
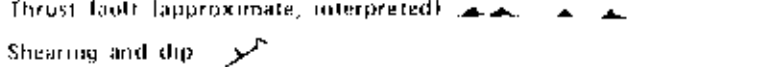
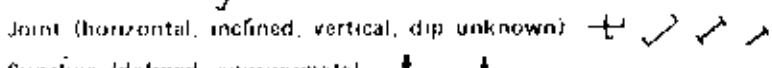
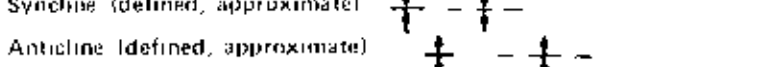
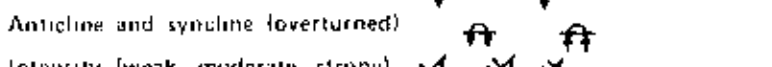
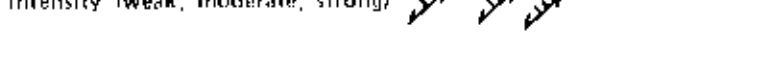




INSTRUMENT : Geometrics G816
Total Field Proton
Precession Magnetometer

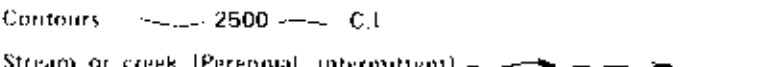
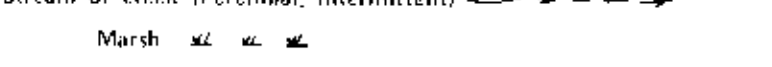


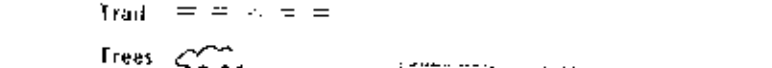

CONTOUR INTERVAL : 100 Gammas
BACKGROUND : 58000 Gammas
OPERATOR : J. Irish


GEOMAGNETIC MINIMUM 
LOCAL MINIMUM 





SYMBOLS

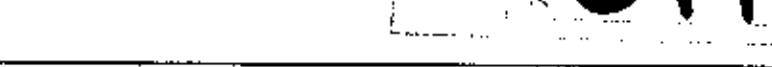
- Drift covered area 
- Rock outcrop, area of outcrop, float 
- Geological boundary (defined, approximate interpreted) 
- Bedding, top known (horizontal, inclined, vertical, overturned, dip unknown) 
- Bedding, top unknown (inclined, vertical, dip unknown) 
- Substratum, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown) 
- Unconformity, axis of major folds (horizontal, inclined, vertical) 
- Break fold (axis unknown, steep) 
- Fault (defined, approximate, interpreted) 
- Fault (inclined, vertical) 
- Fault (solid circle indicated downthrow side, arrows indicate relative movement) 
- Thrust fault (approximate, interpreted) 
- Shoring and dip 
- Joint (horizontal, inclined, vertical, dip unknown) 
- Syncline (defined, approximate) 
- Anticline (defined, approximate) 
- Anticline and syncline (overturned) 
- Intensity (weak, moderate, strong) 

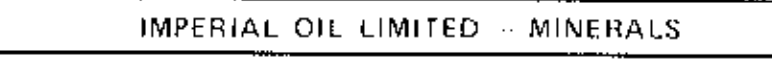
- Trench 
- Add or tunnel 
- Rock dump or tailings 
- Quarry or mine 
- Shaft, vent, mine 
- Diamond-drill hole 

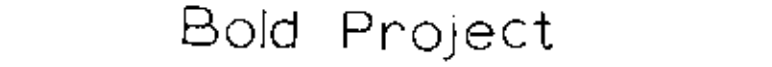
Contours 2500 C.I.
Stream or creek (Perennial, intermittent) 

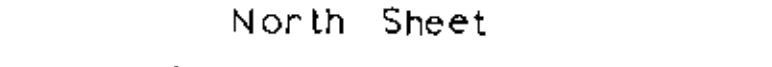
Marsh 

Lake 

Road 

Jeep Road 

Trail 

Free 

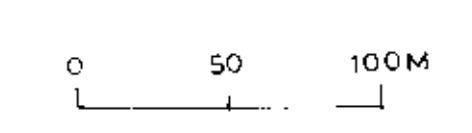
Part 1 of 2
6914

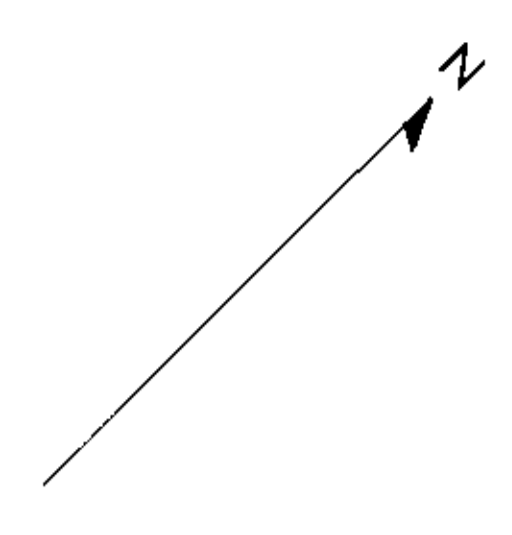
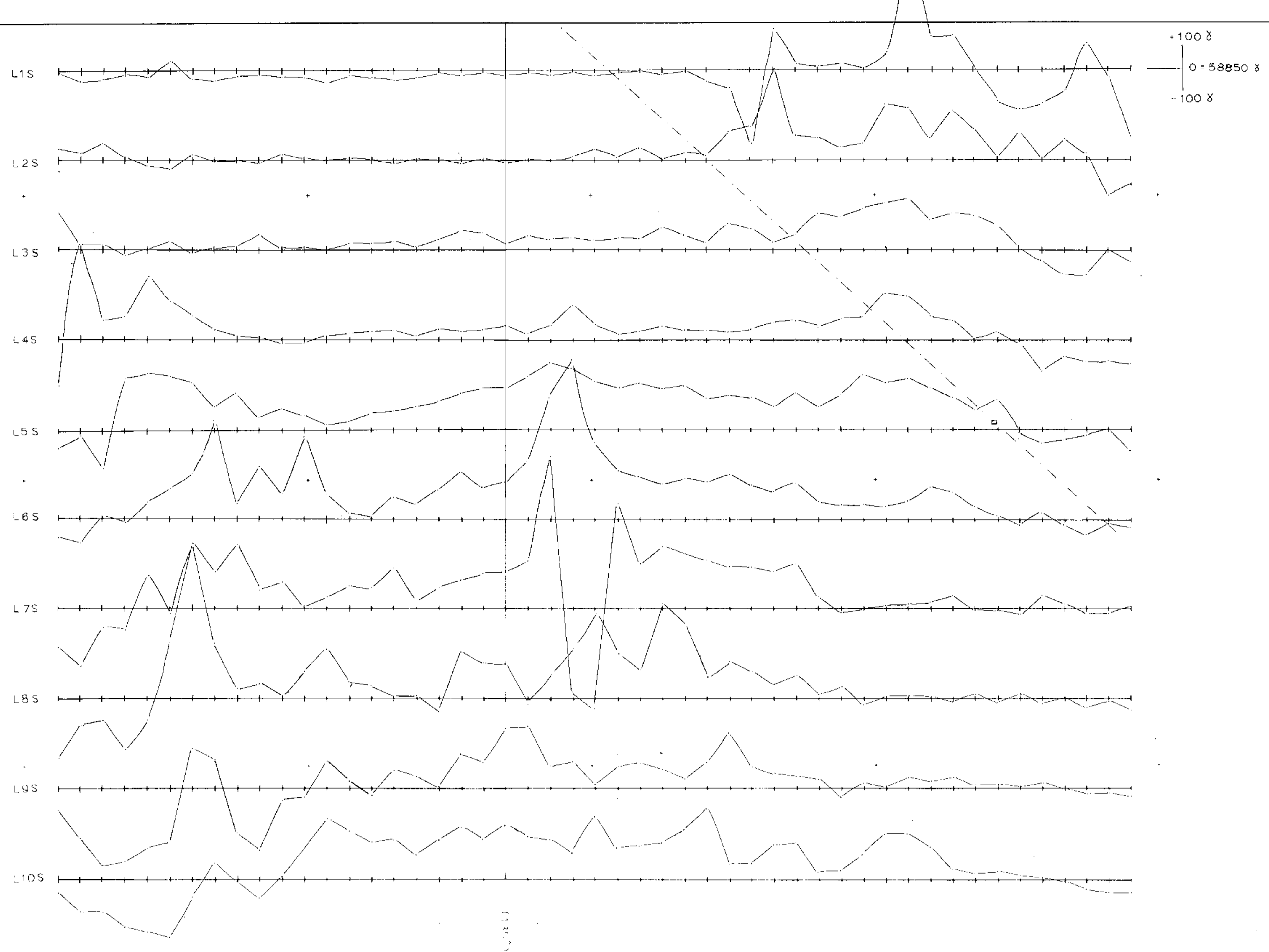
IMPERIAL OIL LIMITED - MINERALS
Bold Project
North Sheet

MAGNETOMETER CONTOUR MAP

Project No. 2144 Mining Division O.M./N.C.R.
Latitude 55° 37' Longitude 124° 23'
NTS 93N9W Scale 1:2500

In Anomalous A Report By *R. M. O'Leary*
Date: JULY 15-20, 1978
Map No. 2





GEOMAGNETIC SURVEY
PROFILE MAP
LEGEND
 INSTRUMENT : Geometrics G816
 Total Field Proton
 Precession Magnetometer
 VERTICAL SCALE : 1cm=100 γ
 BACKGROUND : 58°50' γ
 OPERATOR : J. Irish

SYMBOLS

Drift covered area: [Symbol]

Rock outcrop, area of outcrop: [Symbol]

Geological boundary (defined, approximate, interpreted): [Symbol]

Bedding (dip known, horizontal, inclined, vertical, overturned): [Symbol]

Dip unknown: [Symbol]

Bedding, dip unknown (inclined, vertical, dip unknown): [Symbol]

Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown): [Symbol]

Limestone, area of mass (horizontal, inclined, vertical): [Symbol]

Draped (arrow indicates plunge): [Symbol]

Fault (defined, approximate, interpreted): [Symbol]

Fault (inclined, vertical): [Symbol]

Fault (fault ends indicated downthrow side, arrow indicates relative movement): [Symbol]

Thrust fault (approximate, interpreted): [Symbol]

Shearing and dip: [Symbol]

Joint (horizontal, inclined, vertical, dip unknown): [Symbol]

Syncline (defined, approximate): [Symbol]

Anticline (defined, approximate): [Symbol]

Anticline and syncline (overturned): [Symbol]

Intensity weak, moderate, strong: [Symbol]

Trench: [Symbol]

Aid or kerrel: [Symbol]

Rock dump or talus: [Symbol]

Quarry or mine: [Symbol]

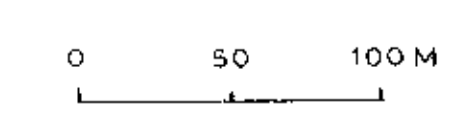
Shed, ramp, winery: [Symbol]

Diamond-drill hole: [Symbol]

Contours: 2500, C1
 Stream or creek (Perennial, intermittent): [Symbol]
 Marsh: [Symbol]
 Lake: [Symbol]
 Road: [Symbol]
 Deep Road: [Symbol]
 Trail: [Symbol]
 Fences: [Symbol]

Part 1 of 2
6941

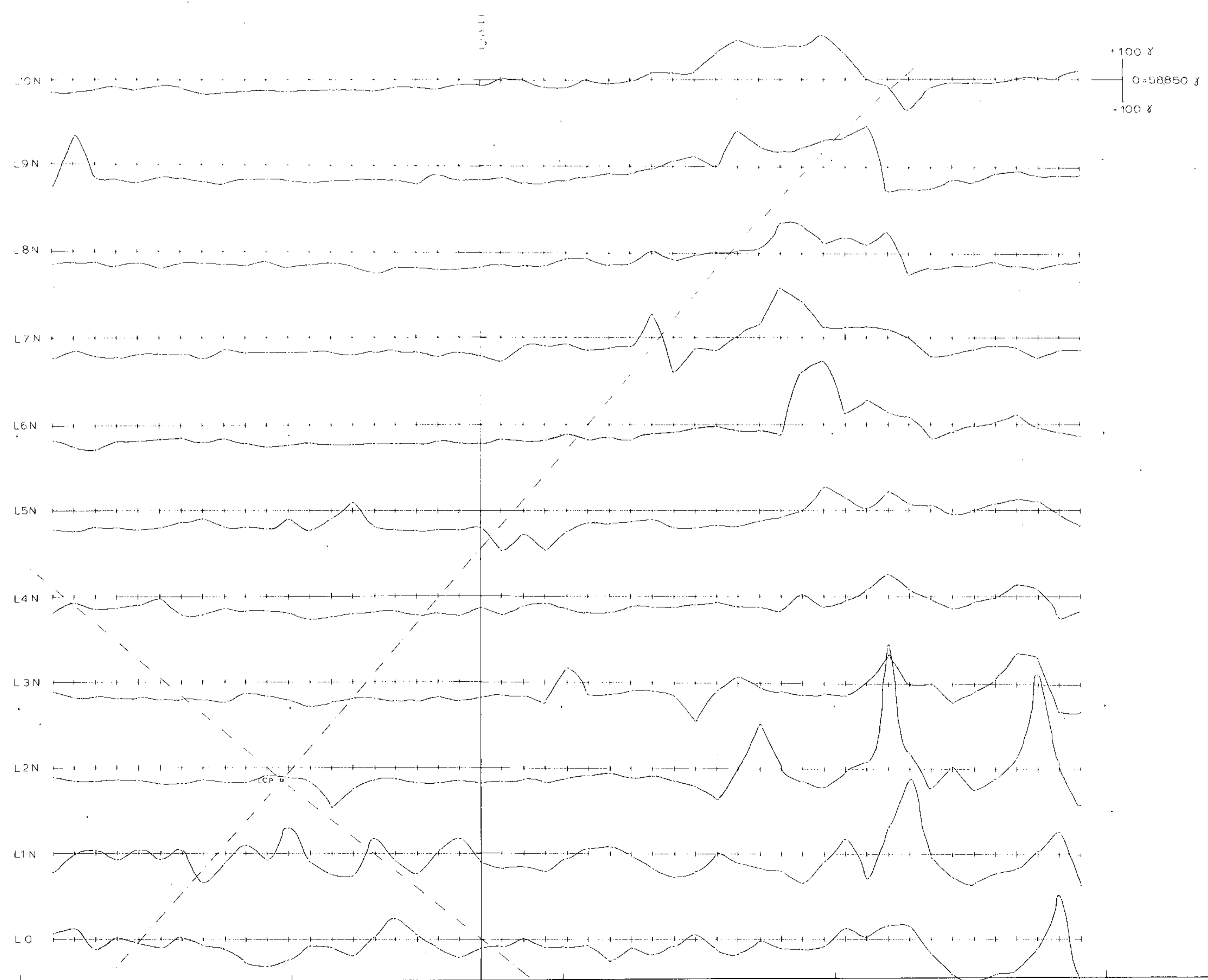
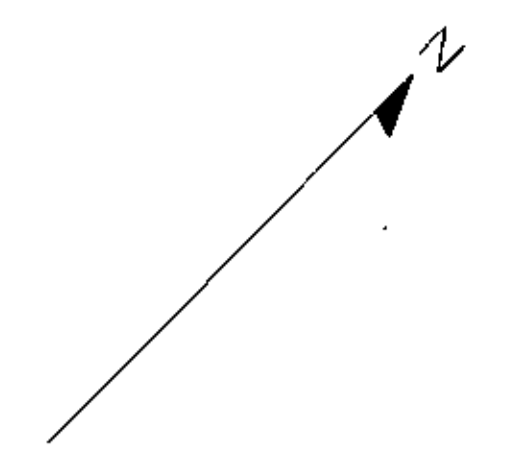
IMPERIAL OIL LIMITED - MINERALS
Bold Project
 South Sheet
 MAGNETOMETER PROFILE
 Project No. 2144 Mining Division Omega
 Latitude 55° 37' Longitude 124° 23'
 N15 93N 9W Scale 1:2500
 To Accompany A Report By R. A. [Name]
 Dated JULY 15, 20, 1978 Map No. 2



GEOMAGNETIC SURVEY
PROFILE MAP

INSTRUMENT Geometrics G816
Total Field Proton
Precession Magnetometer

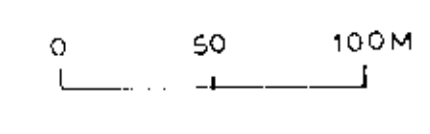
VERTICAL SCALE : 1cm = 100 γ
BACKGROUND = 58850 γ
OPERATOR : J. Irish



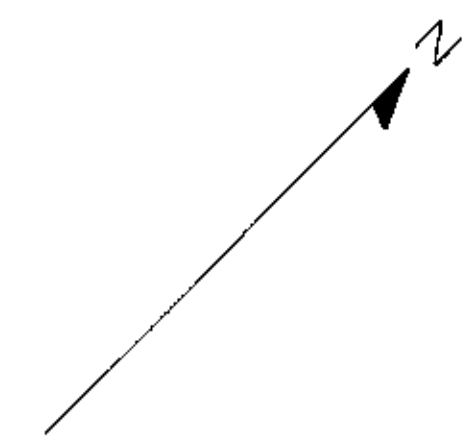
- SYMBOLS**
- Drift covered area
 - Rock outcrop - area of outcrop
 - Geological boundary - defined, approximately interpreted
 - Bedding, top known (horizontal, inclined, vertical, overturned), dip unknown
 - Bedding, top unknown (inclined, vertical, dip unknown)
 - Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown)
 - Lenses, veins of mass (horizontal, inclined, vertical)
 - Fault (defined, approximate, interpreted)
 - Fault (undefined, vertical)
 - Fault (solid circle indicating downthrow side, arrow indicate relative movement)
 - Thrust fault (approximate, interpreted)
 - Shoofly and dip
 - Joint (horizontal, inclined, vertical, dip unknown)
 - Syncline (defined, approximate)
 - Anticline (defined, approximate)
 - Anticline and syncline (overturned)
 - Intensely (weak, moderate, strong)

- Trench
- Adit or tunnel
- Rock dump or loading
- Quarry or mine
- Shaft, raise, winch
- Downed drill hole
- Contours 2500
- Stream or creek (Perennial, intermittent)
- Marsh
- Lake
- Road
- Jeep track
- Trail
- Fence

Part 1 of 2
6941



IMPERIAL OIL LIMITED - MINERALS
Bald Project
North Sheet
MAGNETOMETER PROFILE
Project No. 2144 Mining Division Omineca
Latitude 55° 37' Longitude 124° 23'
NTS 93N9W Scale 1:2500
An Accompanying Report By R. M. Kelly
Dated JULY 15-20, 1978 Map No. 10



GEO-CHEMICAL SURVEY
SOIL SURVEY
LEAD ppm

BACKGROUND - 76 ppm
THRESHOLD - 150 ppm



- SYMBOLS**
- Drill covered area
 - Rock outcrop area of various float
 - Geological boundary (defined, approximate, interpreted)
 - Bedding (top known, horizontal, inclined, vertical, overturned, dip unknown)
 - Bedding (top unknown, inclined, vertical, dip unknown)
 - Schistosity, gneissosity (showing, fabric, horizontal, inclined, vertical, dip unknown)
 - Lamination axes of some folds (horizontal, inclined, vertical)
 - Unsymmetrical folds (plunging)
 - Fault (defined, approximate, interpreted)
 - Fault (defined, vertical)
 - Fault (solid circle indicating downthrow side, arrows indicate relative movement)
 - Thrust fault (approximate, interpreted)
 - Showering and dip
 - Joint (horizontal, inclined, vertical, dip unknown)
 - Syncline (defined, approximate)
 - Anticline (defined, approximate)
 - Anticline and syncline (overturned)
 - Intensity (rock, material, string)

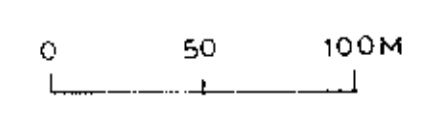
- Trench
- Aid or tunnel
- Rock dump or talus
- Quarry or mine
- Shall, raise, waste
- Diamond drill hole
- Contours 2500 C-1
- Stream or creek (Perennial, intermittent)
- Marsh
- Lake
- Road
- Imp. Road
- Tod
- Trees

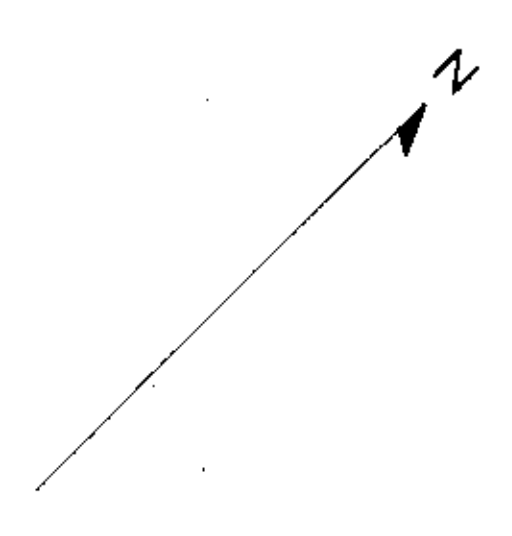
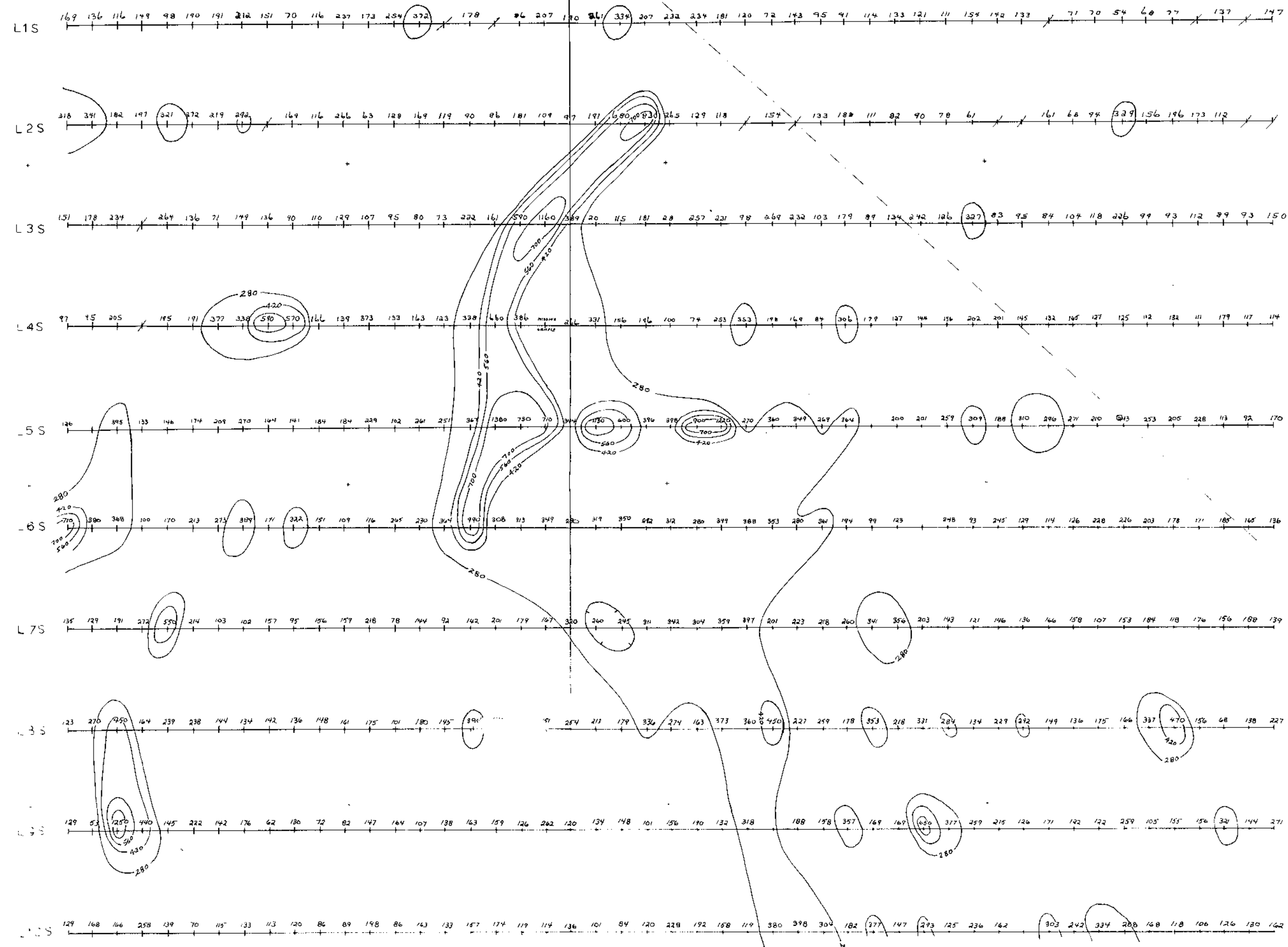
Part 2 of 2 **6941**

IMPERIAL OIL LIMITED - MINERALS
Bold Project
North Sheet
LEAD

Project No. 2144 Mining Division Omineca
Latitude 55° 37' Longitude 124° 23'
Nrs 93N9W Scale 1:2500

In Accompany A Report By *R. W. Gray*
Date: 8-7-78 Map No. 12





GEOCHEMICAL SURVEY
SOIL SURVEY
ZINC ppm

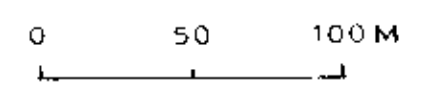
BACKGROUND - 139 ppm
THRESHOLD - 280 ppm

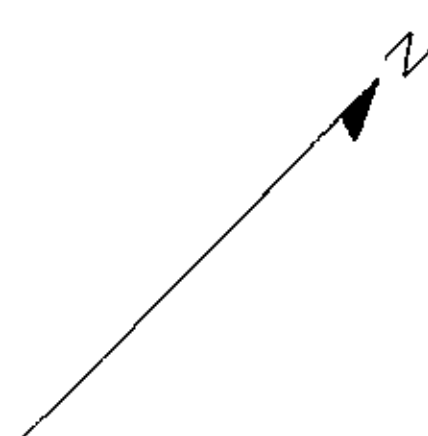
- SYMBOLS**
- Dirt covered area
 - Rock outcrop area of unknown, flat
 - Geological boundary (defined, approximate, interpreted)
 - Building, top known (horizontal, inclined, vertical, dip unknown)
 - Building, top unknown (inclined, vertical, dip unknown)
 - Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical, dip unknown)
 - Lamination, axes of mass folds (horizontal, inclined, vertical)
 - Drag fold (arrow indicates plunge)
 - Fault (defined, approximate, interpreted)
 - Fault (inclined, vertical)
 - Fault (fold circle) (indicates downthrow side, arrows indicate relative movement)
 - Fracture fault (approximate, interpreted)
 - Shearing and dip
 - Joint (horizontal, inclined, vertical, dip unknown)
 - Syncline (defined, approximate)
 - Anticline (defined, approximate)
 - Anticline and syncline (horizontal)
 - Intensity (weak, moderate, strong)

- Trench
- Aid or fence
- Rock dump or landing
- Quarry or mine
- Shaft, mine, water
- Unmined drill hole
- Contours
- Stream or creek (Perennial, intermittent)
- Marsh
- Line
- Road
- Iron Road
- Fence

Part 2 of 2 6941

IMPERIAL OIL LIMITED - MINERALS
Bold Project
 South Sheet
 ZINC
 Project No. 2144 Mining Division/Omineca
 Latitude 55° 37' Longitude 124° 23'
 N1S 93N 9W Scale 1:2500
 In Accordance With Report By R. W. Kelly
 Dated Sep 178 Map No. 13



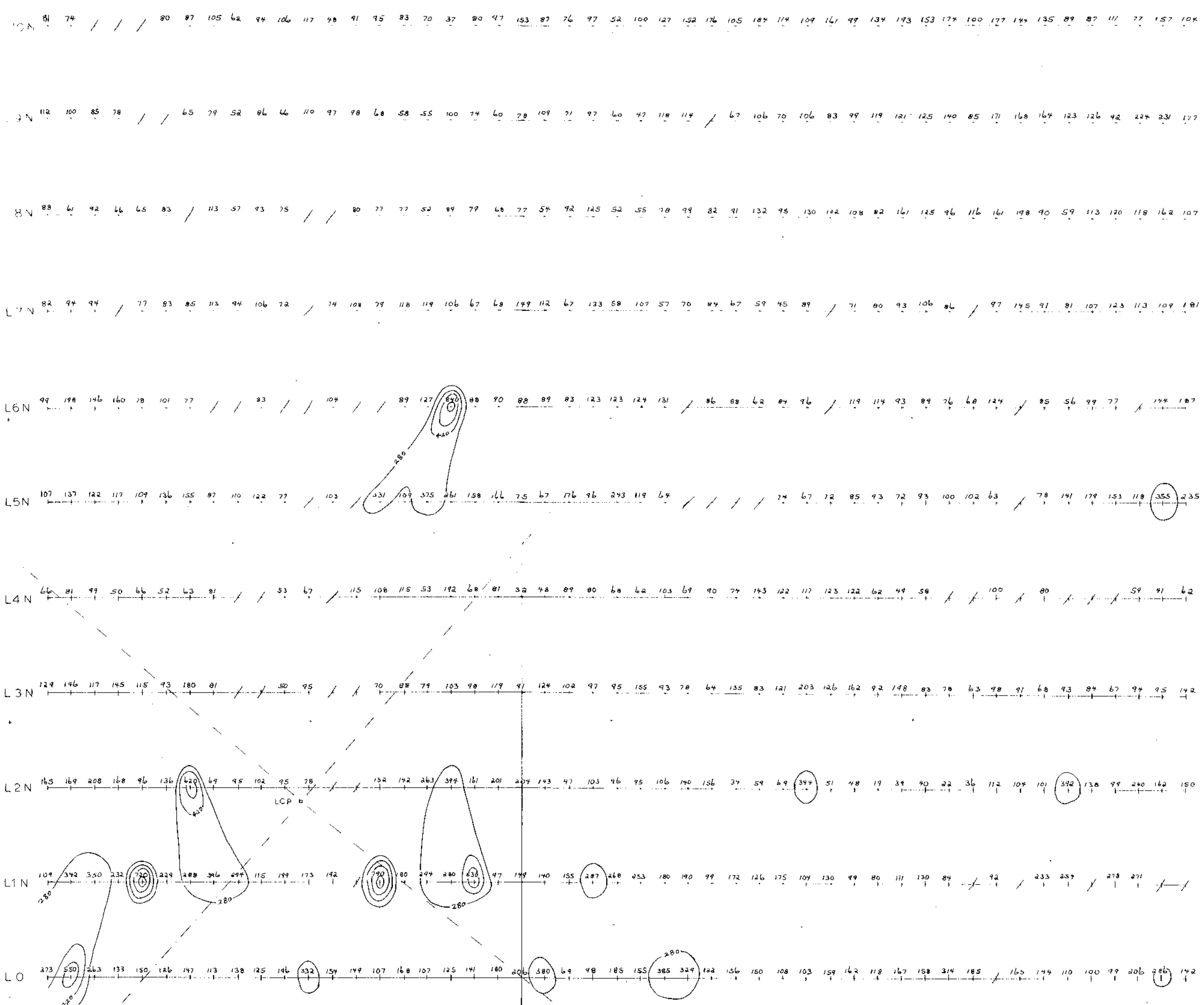


GEOCHEMICAL SURVEY

SOIL SAMPLES

ZINC ppm

BACKGROUND - 139 ppm
THRESHOLD - 280 ppm



SYMBOLS

- Blank (untested) area
- Blank (untested) area of outcrop (float)
- Geological boundary (defined, approximate relationship)
- Building (type known) (dimensioned, vertical, overturned, dip unknown)
- Building (type unknown) (vertical, dip unknown)
- Schistosity (direction, change, fold) (horizontal, inclined, vertical, dip unknown)
- Location (area of interest) (horizontal, vertical, overturned)
- Drainage (arrow indicates plunge)
- Fault (defined, approximate, unprojected)
- Fault (inclined, vertical)
- Fault (vertical, indicated downthrow side, arrows indicate relative movement)
- Thrust fault (approximate, unprojected)
- Shearing and dip
- Joint (horizontal, inclined, vertical, dip unknown)
- Syncline (defined, approximate)
- Anticline (defined, approximate)
- Anticline and syncline (overturned)
- Intensity (weak, moderate, strong)

- Trench
- Adit or tunnel
- Rock dump or tailing
- Quarry or mine
- Shaft, tunnel, winze
- Diamond drill hole
- Contours - 2000 - C.I.
- Stream or creek (Perennial, intermittent)
- Marsh
- Lake
- Reservoir
- Deep Reservoir
- Fault
- Fence

Part 2 of 2 6941

IMPERIAL OIL LIMITED MINERALS

Bold Project
North Sheet

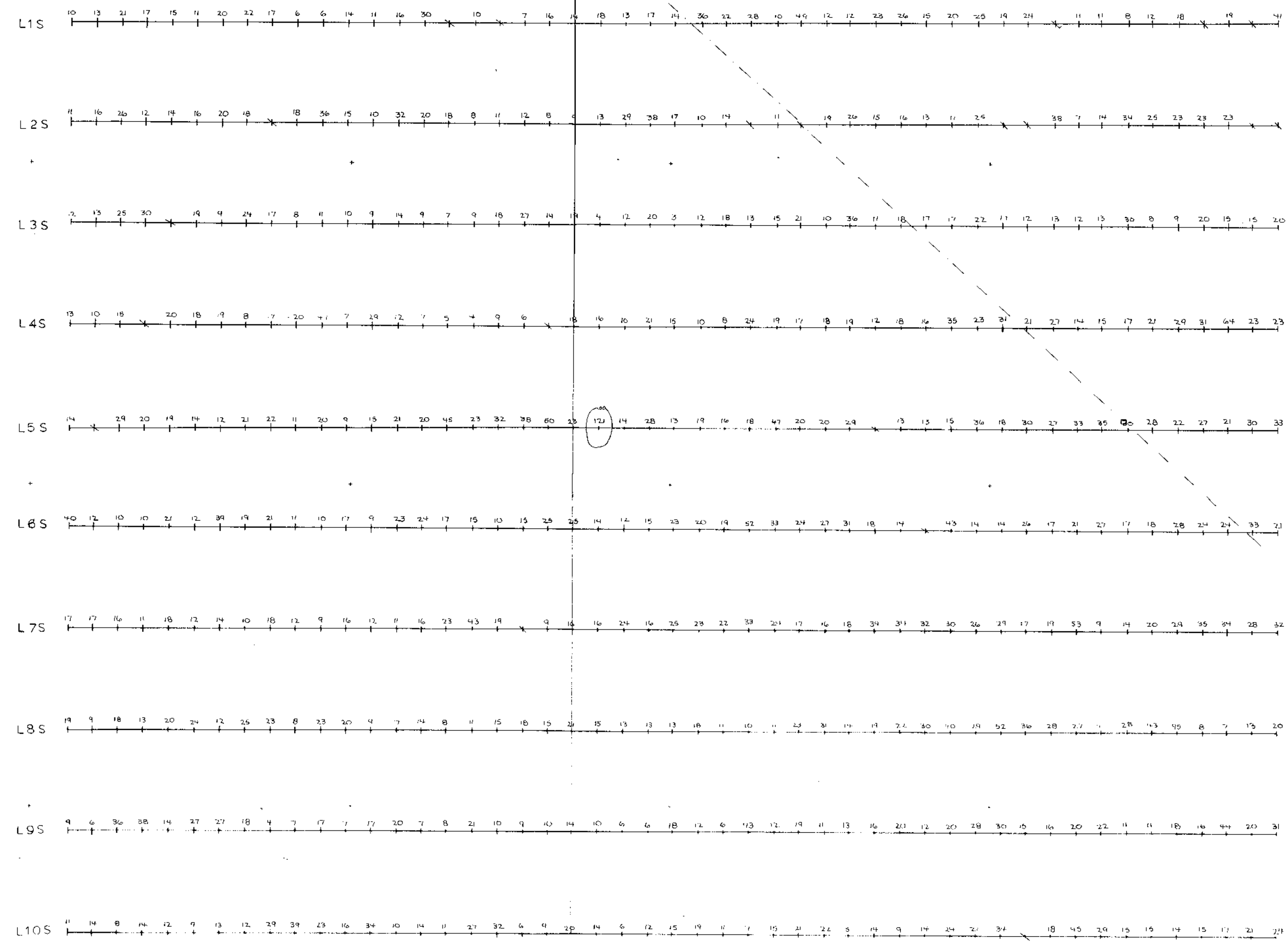
ZINC

Project No. 2144 Miney Division Omnica

Latitude 55° 37' Longitude 124° 23'

REF 93 N 9W Scale 1:2500

By *R. W. Kelly*
Date *Sept. 178* Map No. 14



(12)

GEO-CHEMICAL SURVEY
SOIL SURVEY
COPPER ppm

BACKGROUND - 15.5 ppm
THRESHOLD - 100 ppm

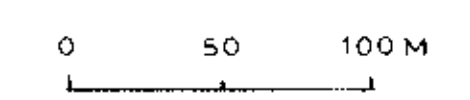
SYMBOLS

- Drift covered area
- Rock outcrop: area of outcrop float
- Geological boundary: definite, approximate, intersected
- Bedding: non-known (horizontal, inclined, vertical, overturned), dip unknown
- Bedding: toes unknown (inclined, vertical, dip unknown)
- Schistosity, gneissosity, cleavage: (dip/known) (horizontal, inclined, vertical, dip unknown)
- Lamination, axes of minor folds: (horizontal, inclined, vertical)
- Drag fold (arrow indicates plunge)
- Fault: (defined, approximate, intersected)
- Fault: (inclined, vertical)
- Fault: (with strike embedded, downthrow side, arrows indicate relative movement)
- Thrust fault (approximate, intersected)
- Shoring and dip
- Joint: (horizontal, inclined, vertical, dip unknown)
- Syncline: (defined, approximate)
- Anticline: (defined, approximate)
- Anticline and syncline (overturned)
- Intensity: (weak, moderate, strong)
- Trench
- Aid at tunnel
- Rock dump or talings
- Quarry or mine
- Shaft, raise, mine
- Diamond-drill hole
- Contours: 2500
- Stream or creek (Perennial, intermittent)
- Mark
- Line
- Road
- Jeep track
- Trail
- Fence

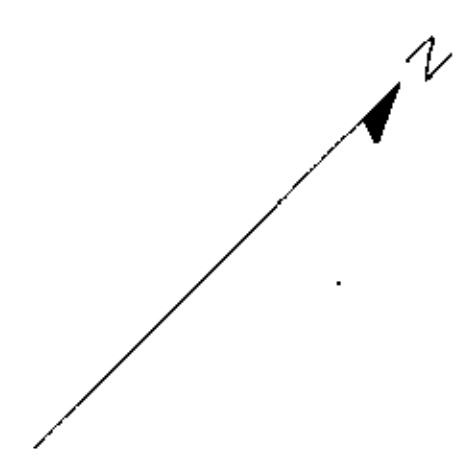
Part 2 of 2 6941

IMPERIAL OIL LIMITED - MINERALS
Bold Project
South Sheet
COPPER

Project No. 2144 Mining Division Omineca
Latitude 55° 37' Longitude 124° 23'
N15 93N 9W Scale 1:2500

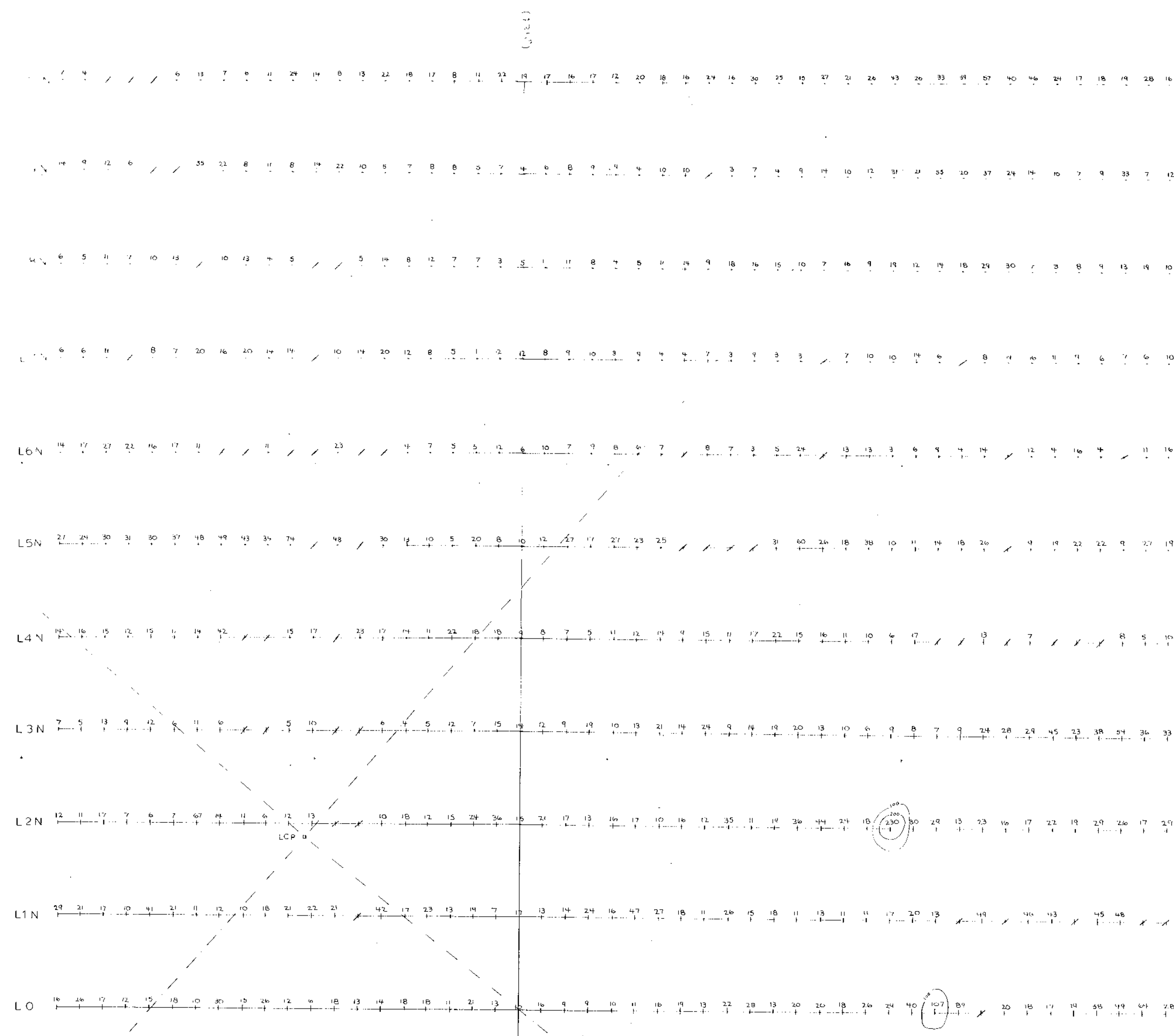


To Accompany A Report By R.W. Odley
Date 2/27/77 Map No. 15



GEO-CHEMICAL SURVEY
SOIL SURVEY
COPPER ppm

BACKGROUND — 15.5 ppm
THRESHOLD — 100 ppm



SYMBOLS

- Diagonal line (dashed) ---
- Flow indicator (arrow) X (X) X
- Contour boundary (dotted)
- Drilling log known (horizontal, vertical) vertical
- Dip unknown (arrow) >
- Drilling log unknown (horizontal, vertical) dip unknown >
- Substrate (horizontal, vertical) horizontal, vertical
- Location axes of mineral holes (horizontal, vertical) horizontal, vertical
- Shaded area (stippled) [stippled]
- Fault (dippled) [dippled]
- Fault (vertical) [vertical]
- Fault (horizontal) [horizontal]
- Fault (diagonal) [diagonal]
- Fault (unknown) [unknown]
- Flow (approximate) [approximate]
- Measuring and dip [measuring and dip]
- Scale (horizontal, vertical) [horizontal, vertical]
- Scale (diagonal) [diagonal]
- Antifer (horizontal) [horizontal]
- Antifer and vertical (vertical) [vertical]
- Intensity (horizontal) [horizontal]

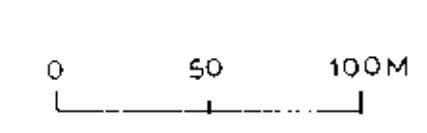
- French [French]
- Aid or tunnel [Aid or tunnel]
- Rock dump or talump [Rock dump or talump]
- Quarry or mine [Quarry or mine]
- Shall, hole, mine [Shall, hole, mine]
- Diamond drill hole [Diamond drill hole]

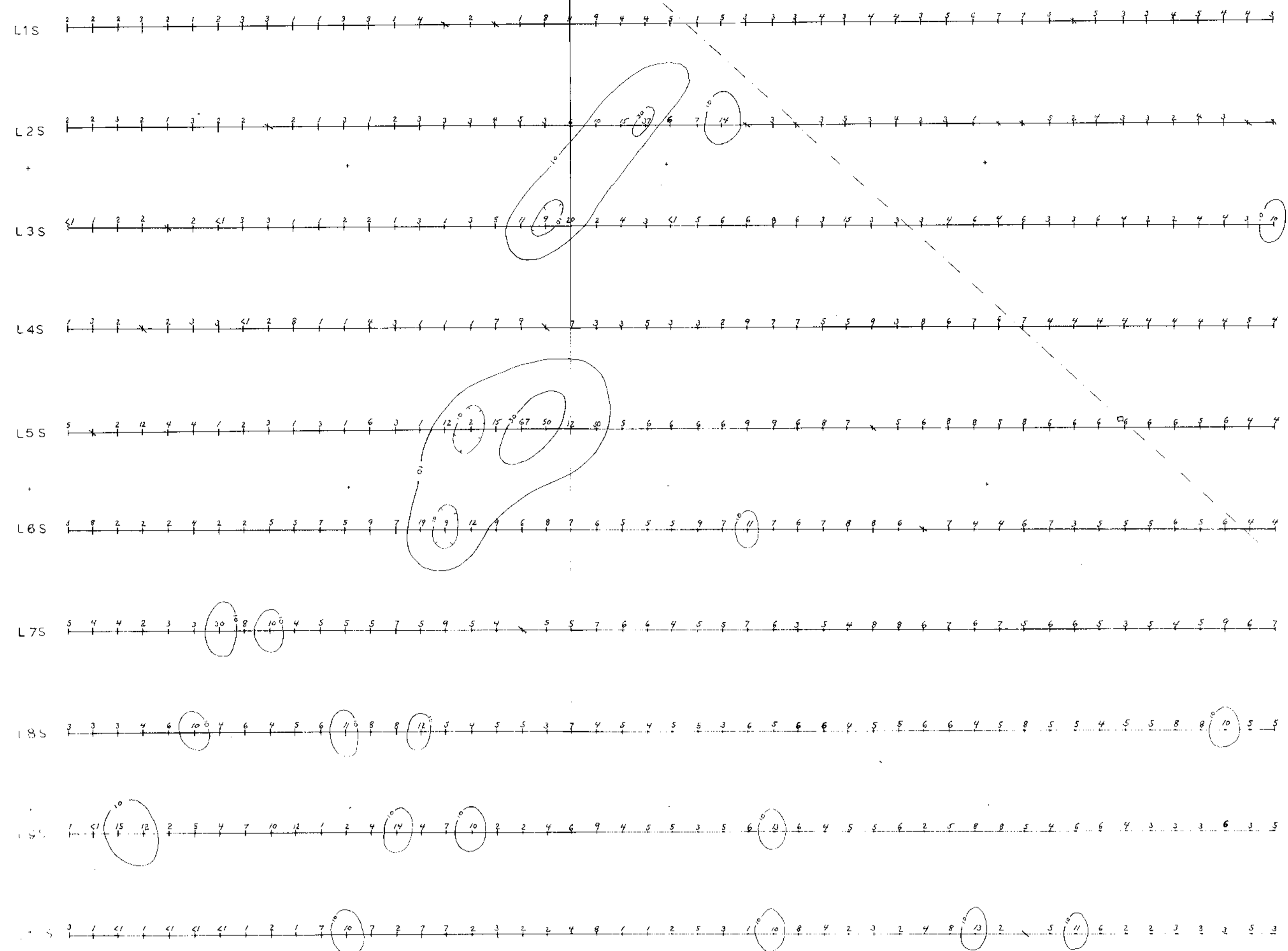
- Contours [Contours]
- Stream or creek (horizontal, vertical) [Stream or creek]
- Marsh [Marsh]
- Lake [Lake]
- Road [Road]
- Jump Road [Jump Road]
- Trail [Trail]
- Fence [Fence]

Part 2 of 2 694

IMPERIAL OIL LIMITED - MINERALS
Bold Project
North Sheet
COPPER

Project No 2144 Mine Division Omineca
Latitude 55° 37' Longitude 124° 23'
N.T.S. 93N9W Scale 1:2500
In Accompanying Report By R.W. Kelly
Date: Sept 1981 Map No 16





GEOCHEMICAL SURVEY

SOIL SAMPLING

MOLYBDENUM ppm

BACKGROUND - 4.7 ppm

THRESHOLD - 10 ppm

- SYMBOLS**
- Diffused area
 - Back-slope area of surface fault
 - Geological boundary, defined approximate
 - Building top known horizontal inclined vertical uncertain
 - Building top unknown
 - Building top unknown inclined vertical dip unknown
 - Schistosity, gneissosity, cleavage, foliation, horizontal inclined, vertical dip unknown
 - Lamination axes of minor fold (horizontal, inclined, vertical)
 - Deep fold (arrow indicates plunge)
 - Fault (defined approximate interpreted)
 - Fault (defined vertical)
 - Fault (solid circle indicates downthrow side, arrow indicates relative movement)
 - Normal fault (approximate interpreted)
 - Shearing and dip
 - Joint (horizontal inclined vertical dip unknown)
 - Syncline (defined approximate)
 - Anticline (defined approximate)
 - Anticline and syncline (reversed)
 - Intensify break anticlastic strong

- Contours
- Stream or creek (Perennial, intermittent)
- Marsh
- Low
- Road
- Deep Road
- Trail
- Fence

Part 2 of 2 6941

IMPERIAL OIL LIMITED MINERALS

Bold Project

South Sheet

MOLYBDENUM

Project No 2144 Mining Division Omineca

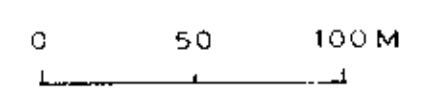
Latitude 55° 37' Longitude 124° 23'

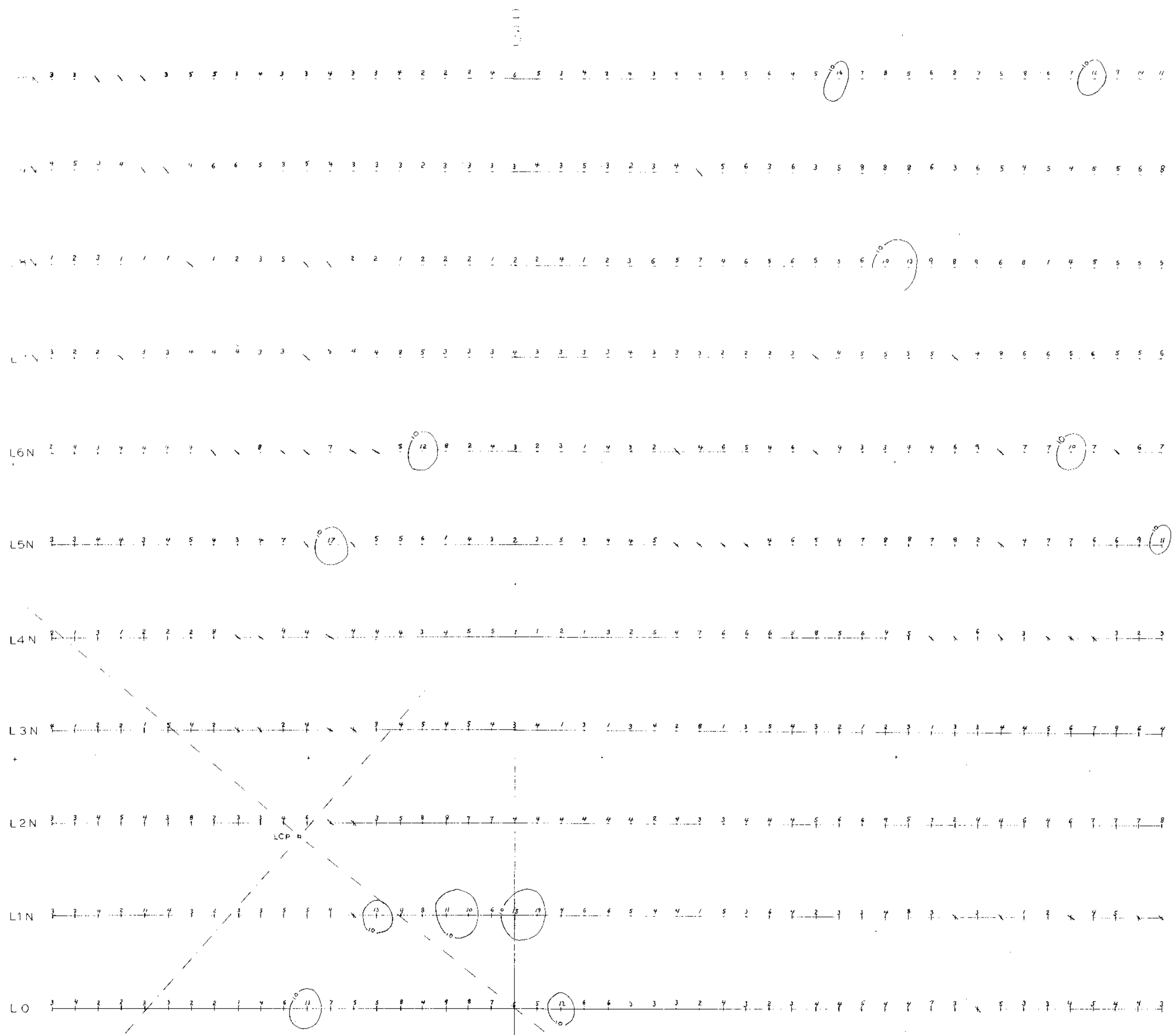
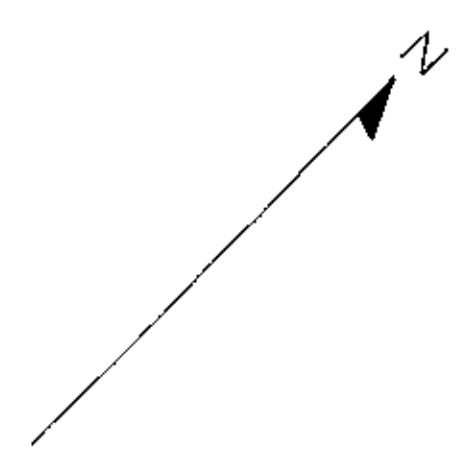
N.T.S. 93N 9W Scale 1:2500

In Accordance A Report By R. A. Gaddy

Dated 5/27/78

Map No. 17





GEOCHEMICAL SURVEY

SOIL SAMPLING

MOLYBDENUM ppm

BACKGROUND - 4.7 ppm
THRESHOLD - 10 ppm

SYMBOLS

Unfractured zone (XXXX)

Rock outcrop, out of outcrop, flat (X(X)(X)X)

Geological boundary, defined, approximate, interpreted (---)

Boundary, top known (horizontal), inclined, vertical, overthrust (---)

Top unknown (---)

Strike-slip, top unknown (vertical), dip unknown (---)

Subsidence, intensity, change, isolation (horizontal), inclined, vertical, dip unknown (---)

Unconformity (---)

Unconformity, top of mass fault, horizontal, inclined, vertical (---)

Diapir, bottom, indicates, plunger (---)

Fault, defined, approximate, interpreted (---)

Fault, defined, vertical (---)

Fault, fault, each, indicated, downthrow, side, arrows, indicate, relative, movement (---)

Fault, fault, approximate, interpreted (---)

Overhang and dip (---)

Acid, horizontal, inclined, vertical, dip, unknown (---)

Syncline, defined, approximate (---)

Anticline, defined, approximate (---)

Anticline and syncline, overthrust (---)

Intensity (weak, moderate, strong) (---)

Trench (---)

Add or remove (---)

Block, slump or talus (---)

Quarry or mine (---)

Shaft, core, mine (---)

Drilled, drill, hole (---)

Contours (---)

Stress or strain (horizontal, intersection) (---)

Mark (---)

Lake (---)

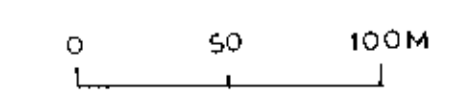
Head (---)

Deep, head (---)

Trail (---)

Fence (---)

Part 2 of 2 (814)



IMPERIAL OIL LIMITED MINERALS

Boid Project
North Sheet

MOLYBDENUM

Project No. 2144 Mining Division Omineca

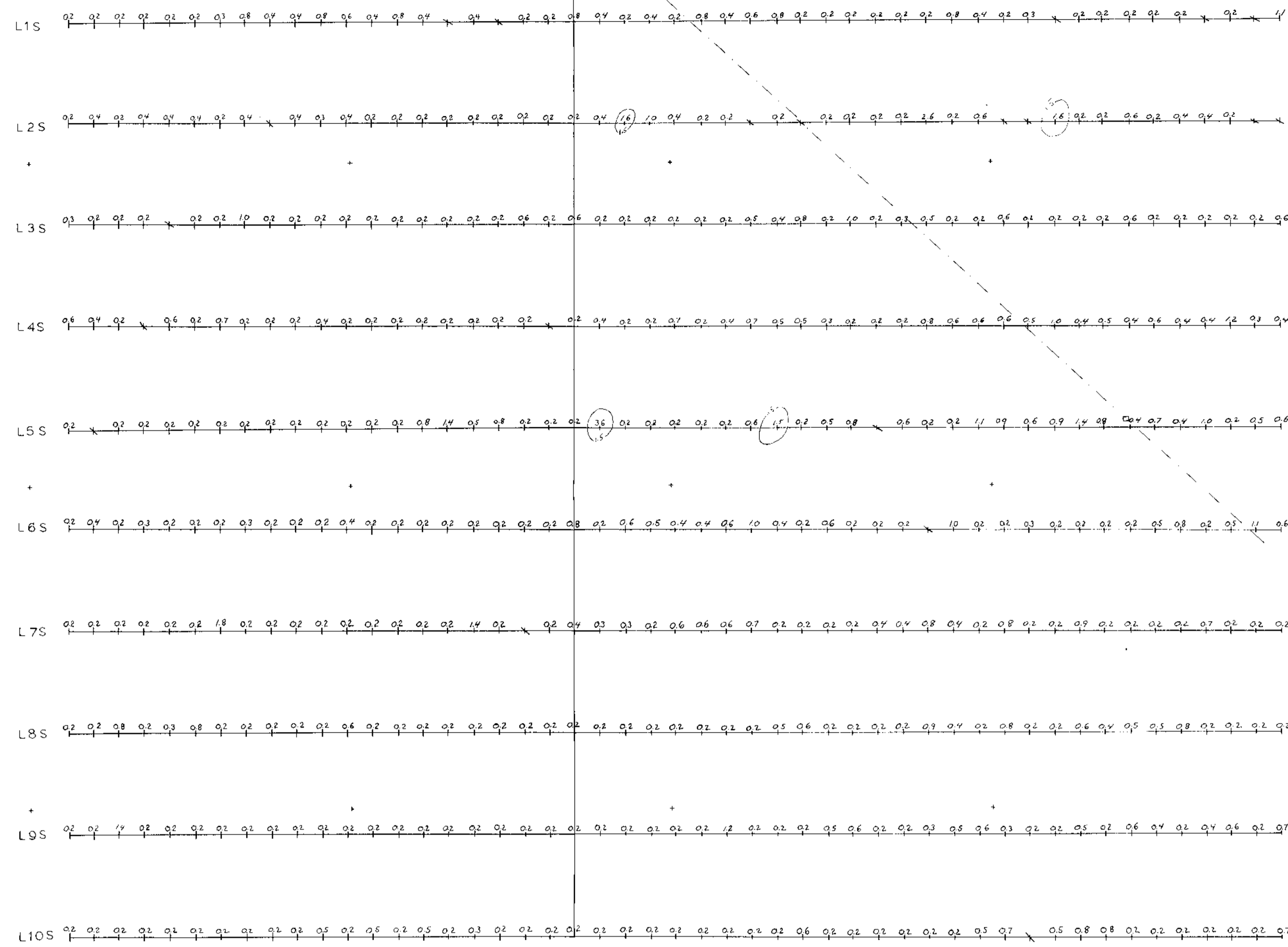
Latitude 55° 37' Longitude 124° 23'

NTS 93N9W Scale 1:2500

As Accompany A Report By *[Signature]*

Dated 4-27-72

Map No. 12



(135)

GEOCHEMICAL SURVEY

SOIL SAMPLING

SILVER ppm

BACKGROUND - 0.2 ppm

THRESHOLD - 1.5 ppm

SYMBOLS

- Drift covered area
- Block outline, area of interest, float
- Geological boundary (defined, approximate, interpreted)
- Harding top, known (horizontal, inclined, vertical, overturned, dip unknown)
- Harding top, unknown (horizontal, vertical, dip unknown)
- Shearing, generally, oblique, lateral (horizontal, inclined, vertical, dip unknown)
- Faults, axes of minor folds (horizontal, inclined, vertical)
- Disjunctive zone (steep)
- Fault (defined, approximate, interpreted)
- Fault (inclined, vertical)
- Fault (dip circle and strike-slip, sense, strike-slip movement)
- Horizontal fault (dip, interpreted)
- Shearing and dip
- Spur (defined, approximate)
- Anticline and syncline
- Interspersed zone

- Drift
- Area of float
- Block outline or fault
- Quarry or mine
- Shaft, level, mine
- Drained sink hole

- Contours
- Stream or creek (perennial, intermittent)
- Marsh
- Lake
- Flow
- Area flood
- Flood
- Frost

Part 2 of 2 6941

IMPERIAL OIL LIMITED - MINERALS

Bold Project

South Sheet

SILVER

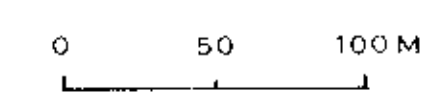
Project No. 2144 Mining Division Omineca

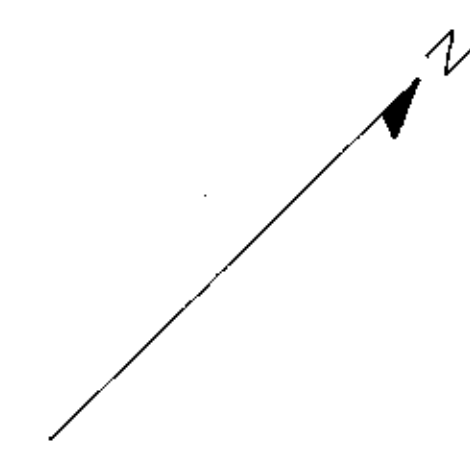
Latitude 55° 37' Longitude 124° 23'

N1S 93N 9W Scale 1:2500

To Accompany A Report By: S. H. Kelly

Date: Sept 1978 Map No. 12





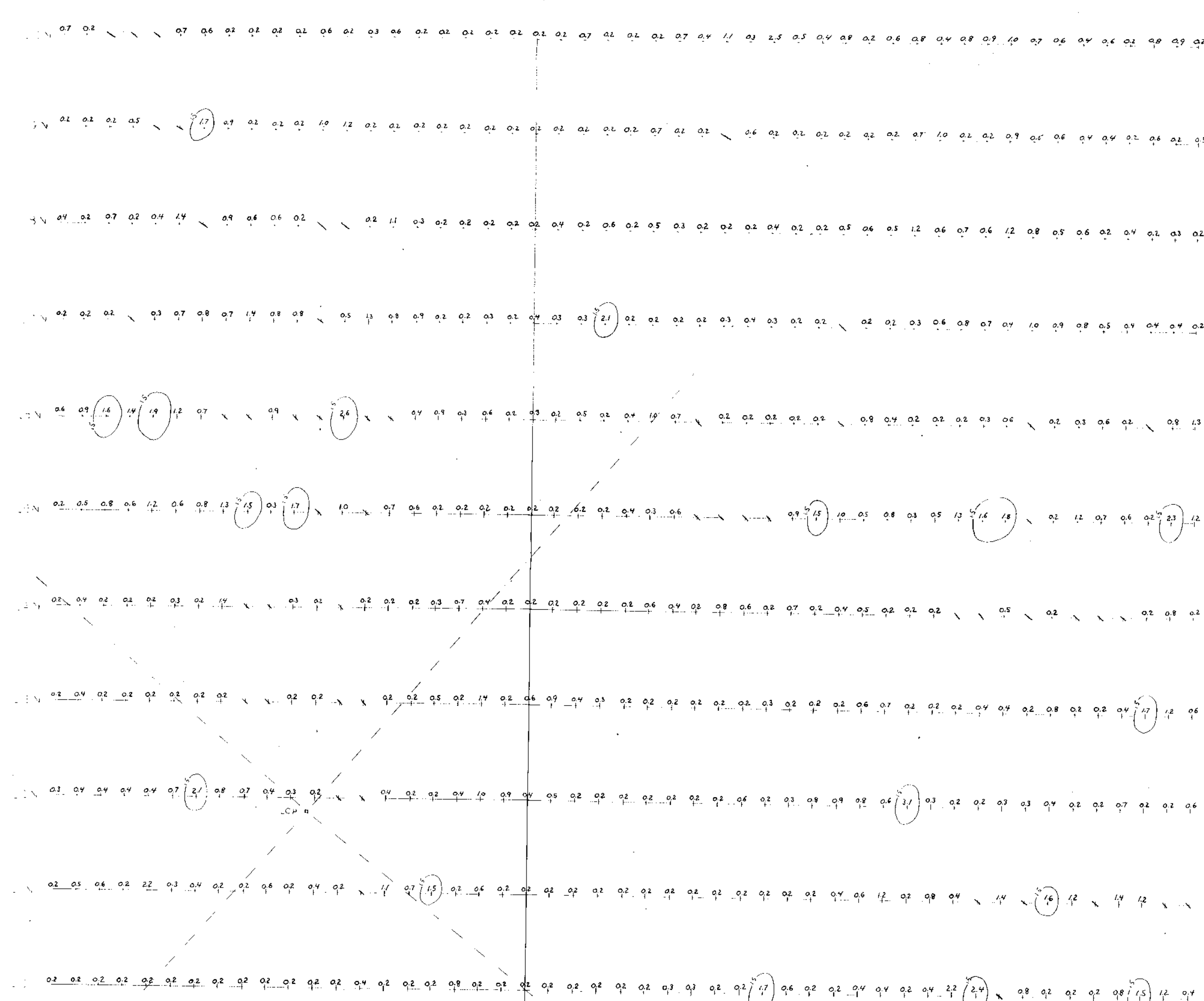
GEOCHEMICAL SURVEY

SOIL SAMPLING

SILVER ppm

BACKGROUND - 0.2 ppm

THRESHOLD - 1.5 ppm



SYMBOLS

- Dredged area
- Block (intercept area of unknown flow)
- Geological boundary (dotted, approximate interpretation)
- Excavation (top unknown, vertical, dip unknown)
- Building (top unknown, vertical, dip unknown)
- Schistosity, gneissosity, cleavage, foliation (horizontal included, vertical dip unknown)
- Lamination (level of some beds, horizontal, vertical)
- Way fold (arrow indicates plunge)
- Fault (vertical, approximate interpretation)
- Fault (vertical, vertical)
- Fault (vertical, vertical, dip unknown)
- Fault (vertical, vertical, dip unknown)
- Shear and dip
- Joint (horizontal, vertical, dip unknown)
- Syncline (dipform, approximate)
- Anticline (dipform, approximate)
- Anticline and syncline (vertical)
- Intensity (rock, moderate - strong)
- Fracture
- Adit or tunnel
- Flow (dip to right)
- Quarry or mine
- Shelf, ramp, window
- Diamond drill hole
- Contours
- Structure or creek (topographical interpretation)
- Marsh
- Lake
- Flow
- Arch flow
- Flow
- Flow

Part 2 of 2 **6941**

IMPERIAL OIL LIMITED MINERALS

Bold Project
North Sheet
SILVER

Project No. 2144 Mining Division OPH/1262/1
Latitude 55° 37' Longitude 124° 23'
N15 93N9W Scale 1:2500

Approved by: *R. W. Dwyer*
Date: *Sept 178* Map No. *20*

