93L/13E

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY ON THE LOU GROUP, SMITHERS AREA, B.C.

FOR

CANADIAN SUPERIOR EXPLORATION LTD.

2937

BY

ASHTON W. MULLAN, B.Sc.,

AND

PHILIP G. HALLOF, Ph.D.

NAME AND LOCATION OF PROPERTY

LOU GROUP #3 & 4, SMITHERS AREA, B.C.

OMINECA MINING DIVISION, 54°N, 127° W - NW

DATE STARTED: JANUARY 24, 1971.

DATE FINISHED: MARCH 4, 1971.

TABLE OF CONTENTS

McPHAR GEOPHYSICS

NOTES ON THE THEORY, METHOD OF FIELD OPERATION, AND PRESENTATION OF DATA FOR THE INDUCED POLARIZATION METHOD

Induced Polarization as a geophysical measurement refers to the blocking action or polarization of metallic or electronic conductors in a medium of ionic solution conduction.

This electro-chemical phenomenon occurs wherever electrical current is passed through an area which contains metallic minerals such as base metal sulphides. Normally, when current is passed through the ground, as in resistivity measurements, all of the conduction takes place through ions present in the water content of the rock, or soil, i.e. by ionic conduction. This is because almost all minerals have a much higher specific resistivity than ground water. The group of minerals commonly described as "metallic", however, have specific resistivities much lower than ground waters. The induced polarization effect takes place at those interfaces where the mode of conduction changes from ionic in the solutions filling the interstices of the rock to electronic in the metallic minerals present in the rock.

The blocking action or induced polarization mentioned above, which depends upon the chemical energies necessary to allow the ions to give up or receive electrons from the metallic surface, increases with the time that a d. c. current is allowed to flow through the rock; i. e. as ions pile up against the metallic interface the resistance to current flow increases. Eventually, there is enough polarization in the form of excess ions at the interfaces, to appreciably reduce the amount of current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

When the d. c. voltage used to create this d. c. current flow is cut off, the Coulomb forces between the charged ions forming the polarization cause them to return to their normal position. This movement of charge creates a small current flow which can be measured on the surface of the ground as a decaying potential difference.

From an alternate viewpoint it can be seen that if the direction of the current through the system is reversed repeatedly before the polarization occurs, the effective resistivity of the system as a whole will change as the frequency of the switching is changed. This is a consequence of the fact that the amount of current flowing through each metallic interface depends upon the length of time that current has been passing through it in one direction.

The values of the per cent frequency effect or F. E. are a measurement of the polarization in the rock mass. However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass it is found that the metal factor values or M. F. are the most useful values in determining the amount of polarization present in the rock mass. The MF values are obtained by normalizing the F. E. values for varying resistivities.

The induced polarization measurement is perhaps the most powerful geophysical method for the direct detection of metallic sulphide mineralization, even when this mineralization is of very low concentration. The lower limit of volume per cent sulphide necessary to produce a recognizable IP anomaly will vary with the geometry and geologic environment of the source, and the method of executing the survey. However, sulphide mineralization of less than one per cent by volume has been detected by the IP method under proper geological conditions.

The greatest application of the IP method has been in the search for disseminated metallic sulphides of less than 20% by volume. However, it has also been used successfully in the search for massive sulphides in situations where, due to source geometry, depth of source, or low resistivity of surface layer, the EM method can not be successfully applied. The ability to differentiate ionic conductors, such as water filled shear zones, makes the IP method a useful tool in checking EM

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In normal field applications the IP method does not differentiate between the economically important metallic minerals such as chalcopyrite, chalcocite, molybdenite, galena, etc., and the other metallic minerals such as pyrite. The induced polarization effect is due to the total of all electronic conducting minerals in the rock mass. Other electronic conducting materials which can produce an IP response are magnetite, pyrolusite, graphite, and some forms of hematite.

In the field procedure, measurements on the surface are made in a way that allows the effects of lateral changes in the properties of the ground to be separated from the effects of vertical changes in the properties. Current is applied to the ground at two points in distance (X) apart. The potentials are measured at two other points (X) feet apart, in line with the current electrodes is an integer number (n) times the basic distance (X).

The measurements are made along a surveyed line, with a constant distance (nX) between the nearest current and potential electrodes. In most surveys, several traverses are made with various values of (n); i.e. (n) = 1, 2, 3, 4, etc. The kind of survey required (detailed or reconnaissance) decides the number of values of (n) used.

In plotting the results, the values of the apparent resistivity, apparent per cent frequency effect, and the apparent metal factor measured for each set of electrode positions are plotted at the intersection of grid lines, one from the center point of the current electrodes and the other from the center point of the potential electrodes. (See Figure A.) The resistivity values are plotted above the line as a mirror image of the metal factor values below. On a second line, below the metal factor values, are plotted the values of the per cent frequency effect. In some cases the values of per cent frequency effect are plotted as superscripts of the metal factor value. In this second case the frequency effect values are not contoured. The lateral displacement of a given value is determined by the location along the survey line of the center point between the current and potential electrodes. The distance of the value from the line is determined by the distance (nX) between the current and potential electrodes when the measurement was made.

The separation between sender and receiver electrodes is only one factor which determines the depth to which the ground is being sampled in any particular measurement. The plots then, when contoured, are not section maps of the electrical properties of the ground under the survey line. The interpretation of the results from any given survey must be carried out using the combined experience gained from field results, model study results and theoretical investigations. The position of the electrodes when anomalous values are measured is important in the interpretation.

In the field procedure, the interval over which the potential differences are measured is the same as the interval over which the electrodes are moved after a series of potential readings has been made. One of the advantages of the induced polarization method is that the same equipment can be used for both detailed and reconnaissance surveys merely by changing the distance (X) over which the electrodes are moved each time. In the past, intervals have been used ranging from 25 feet to 2000 feet for (X). In each case, the decision as to the distance (X) and the values of (n) to be used is largely determined by the expected size of the mineral deposit being sought, the size of the expected anomaly and the speed with which it is desired to progress.

The diagram in Figure A demonstrates the method used in plotting the results. Each value of the apparent resistivity, apparent metal factor, and apparent per cent frequency effect is plotted and identified by the position of the four electrodes when the measurement was made. It can be seen that the values measured for the larger values of (n) are plotted farther from the line indicating that the thickness of the layer of the earth that is being tested is greater than for the smaller values of (n); i.e. the depth of the measurement is increased. When the F.E. values are plotted as superscripts to the MF values the third section of data values is not presented and the F.E. values are not contoured.

The actual data plots included with the report are prepared utilizing an IBM 360/75 Computer and a Calcomp 770/763 Incremental Plotting System. The data values are calculated, plotted, and contoured according to a programme developed by McPhar Geophysics. Certain symbols have been incorporated into the programme to explain various situations in recording the data in the field.

The IP measurement is basically obtained by measuring the difference in potential or voltage (ΔV) obtained at two operating frequencies. The voltage is the product of the current through the ground and the apparent resistivity of the ground. Therefore in field situations where the current is very low due to poor electrode contact, or the apparent resistivity is very low, or a combination of the two effects; the value of (ΔV) the change in potential will be too small to be measurable. The symbol "TL" on the data plots indicates this situation.

In some situations spurious noise, either man made or natural, will render it impossible to obtain a reading. The symbol "N" on the data plots indicates a station at which it is too noisey to record a reading. If a reading can be obtained, but for reasons of noise there is some doubt as to its accuracy, the reading is bracketed in the data plot ( ).

In certain situations negative values of Apparent Frequency Effect are recorded. This may be due to the geologic environment or spurious electrical effects. The actual negative frequency effect value recorded is indicated on the data plot, however the symbol "NEG" is indicated for the corresponding value of Apparent Metal Factor. In contouring negative values the contour lines are indicated to the nearest positive value in the immediate vicinity of the negative value.

The symbol "NR" indicates that for some reason the operator did not attempt to record a reading although normal survey procedures would suggest that one was required. This may be due to inaccessible topography or other similar reasons. Any symbol other than those discussed above is unique to a particular situation and is described within the body of the report.

METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS

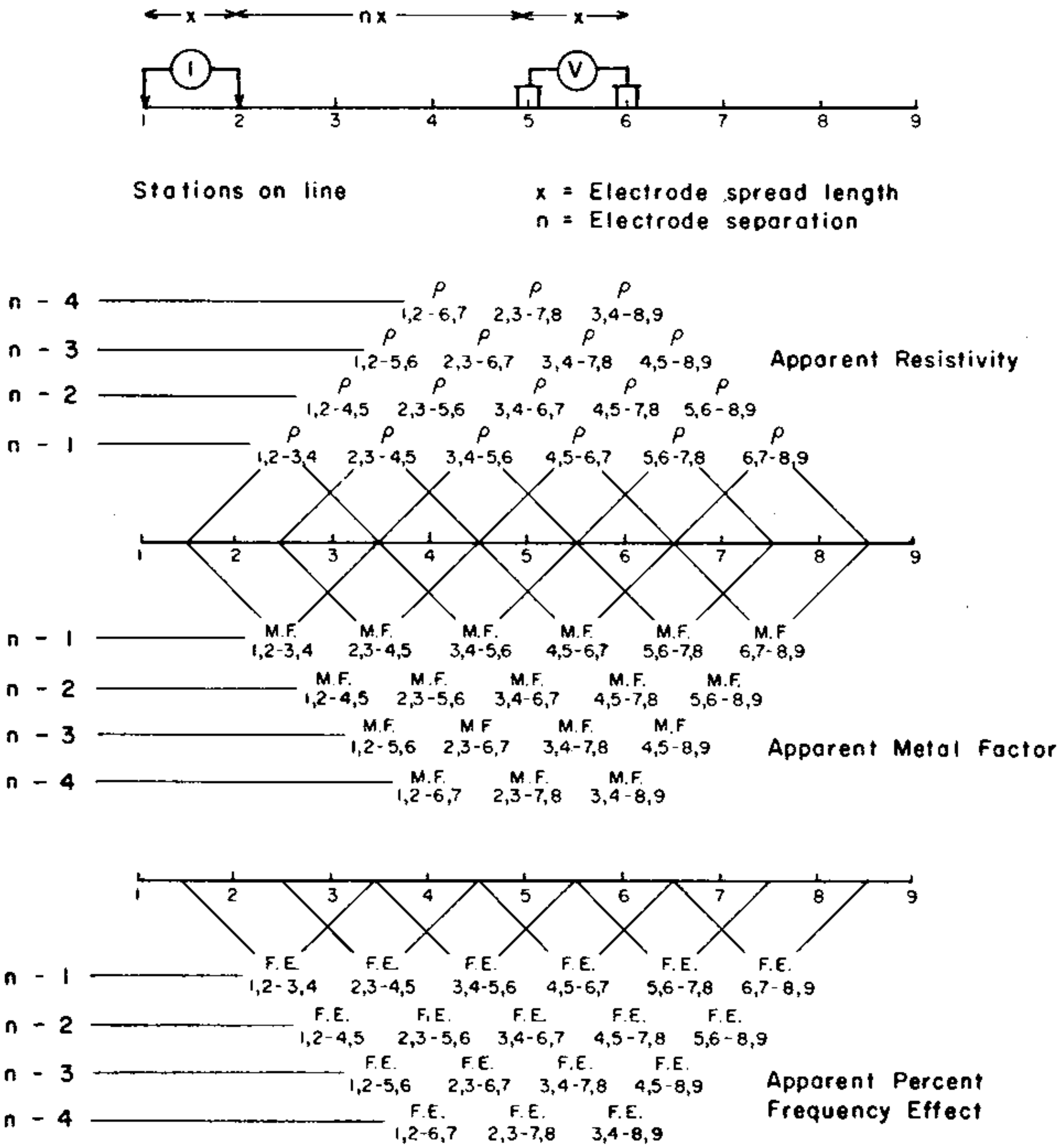

Fig. A

McPHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY LOU GROUP NOS. 3 & 4, SMITHERS AREA, B.C. 1971 SURVEY GRID FOR CANADIAN SUPERIOR EXPLORATION LTD.

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1. INTRODUCTION:

An induced polarization (IP) and resistivity survey has been carried out on Groups 3 & 4 of the LOU claims by Canadian Superior Exploration Ltd. The property is located about 20 miles west northwest of the town of Smithers, B.C. in the Omineca Mining Division. The centre of the Lou Group of claims is situated in the northwest quadrant of the 1^{o} quadrilateral whose southeast corner is at 54^{o} N latitude and 127^{o} W longitude.

A reconnaissance IP survey was carried out by McPhar Geophysics Ltd. west of the 1971 grid during the winter of 1970. The present survey was carried out by Canadian Superior's own geophysical field crew using a McPhar variable frequency IP unit operating at 0.3 and 5.0 CPS.

This report is being written at the request of Mr. J. Murphy, Regional Manager for Canadian Superior Exploration Ltd.

The 1971 survey grid covers in whole or in part the following mineral claims:

LOU GROUP - 52-60 inclusive, 73-82 inclusive,
84, 93 - 104 inclusive and
113 - 123 inclusive.

The area of the 1971 grid is underlain by an older andesitic lava and by younger tuffs and agglomerates. A younger feldspar porphyry is believed to intrude all the above rock units.

2. PRESENTATION OF RESULTS:

The induced polarization and resistivity results are shown on the following data plots in the manner described in the notes preceeding this report.

LINE	ELECTRODE INTERVAL
132E	200 Ft.
140E	200 Ft.
148E	200 Ft.
156E	200 Ft.
164E	200 Ft.
172E	200 Ft.
180E	200 Ft.
188E	200 Ft.
196E	200 Ft.

Enclosed with this report is a plan map of the 1971 survey grid at a scale of 1 inch equals 400 feet. The definite and possible induced polarization anomalies are indicated by solid and broken bars respectively on this plan map as well as the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the induced polarization measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the spread length; i. e. when using 200 ft. spreads the position of a narrow sulfide body can only be determined to lie between two stations 200 ft. apart. In order to locate sources at some depth, larger spreads must be used, with a corresponding increase in the uncertainties of location. Therefore, while the centre of the indicated anomaly probably corresponds fairly well with the source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

3. DISCUSSION OF RESULTS:

The area covered by the 1971 survey grid contains numerous IP anomalies. Magnitudes vary from very weak possible IP effects to moderate. There are no strong broad zones similar to zones A-1 and A-2 located in the adjoining area to the west by a previous IP survey.

The relatively wide line spacing of 800 feet in an area of numerous IP anomalies makes correlation into zones very difficult. In fact several alternate strike correlations are possible. For this reason each separate profile of IP data is discussed separately.

The survey area is characterized by low apparent resistivities, usually less than 100 ohm feet. All the moderate magnitude IP anomalies occur within a resistivity environment of from 10 - 50 ohm feet. The weaker anomalies occur in a wider resistivity range of from 10 - 150 ohm feet.

Bedrock exposure is generally sparse. Based on the geological map supplied by Canadian Superior, the older andesite and the northerly feldspar porphyry outcrops occur within a resistivity environment of over 50 ohm feet. The only observed bedrock exposure that occurs in the less than 50 ohm feet environment is the altered feldspar porphyry located at 160 + 00E and 60 + 00N. This outcrop is described as a feldspar porphyry showing intense argillic alteration and fracturing.

A magnetometer survey has been conducted over the 1971 grid by Canadian Superior Exploration. A number of relatively weak 500 - 1000 gamma anomalies were outlined of varying widths. There seems to be some correlating IP response with most of the magnetic highs. There are, however, some IP anomalies with no coincident magnetic high.

LINE 132 + 00E

A moderate magnitude IP response occurs between 64 and 70N within the east end of Louise Lake. The anomaly pattern is not complete due to electrode contact difficulties. The IP source is shallow relative to the 200 foot electrode intervals and it lies on strike of a similar feature outlined by the previous years survey.

Weak IP effects were recorded at 57N and at the extreme south end of the line.

LINE 140 + 00E

Moderate magnitude IP anomalies are centred at 48N and 59N. The anomalous response at 48N is complex with a suggestion of both a shallow and a deep source. The anomaly at 59N is relatively shallow and narrow.

Weak shallow anomalies were located at 51N and 70N. A weak zone consisting in part of some doubtful readings occurs at depth below 78N.

LINE 148 + 00E

A moderate magnitude complex anomaly centred at 48N is similar to the anomaly at the same location on adjoining line 140E.

A wide shallow anomaly with a stronger north side was located between 36N and 42N.

A weak IP anomaly with some depth to the source is centred at 82N and may correlate with a similar feature at 78N on line 140E.

Weak possible IP effects were recorded at 33N, 65N, and 71N.

LINE 156 + 00E

A weak to moderate magnitude shallow IP anomaly centred at 40N is similar to the IP response at the same location on line 148E.

Weak moderately deep IP anomalies consisting in part of doubtful readings occur at 46 + 50N and 53 + 50N.

A shallow moderate magnitude anomaly with an adjoining weaker section to the south was located between 59N and 64N.

A shallow weak anomaly that appears narrow occurs between 72N and 86N. Shallow weak possible anomalies are centred at 72N and 86N.

LINE 164 + 00E

Weak possible IP anomalies with shallow sources were located between 38N and 46N, 60N and 66N, and a narrow weak response centred at 85N. Two similar magnitude anomalies with some depth to the source are centred at 49 + 50N and 69N.

A shallow anomaly of moderate magnitude is centred at 54N. Poor contacts resulted in a number of unobtainable readings.

LINE 172 + 00E

An anomaly of moderate magnitude and depth was outlined between 50N and 56N. It appears to correlate with the adjacent anomaly on line 164E.

Weak shallow zones of increased IP effects occur centred at 43N, 60N and 68N.

LINE 180 + 00E

A wide anomalous IP zone extends from 43N to 64N. Within the zone, moderately strong sources are centred at 46N (deep), 49N (shallow), 53N (deep), 57N(moderate), and 61N (deep). Again doubtful IP readings due to poor contacts result in incomplete patterns. This anomalous feature could be a wider extension to the east of the IP anomalies centred at 54N on line 164E and 53N on line 172E.

LINE 188 + 00E

A wide IP zone variable both as to depth and magnitude extends from 34N to 44N. A moderate magnitude source composed in part of doubtful IP readings is centred at 40N.

A narrow well defined IP zone of low to moderate magnitude and relatively shallow was located at 53N.

A weak possible IP zone of moderate depth and composed of some doubtful readings is centred at 59N.

Weak shallow possible IP zones are centred at 49N, 71N and 75N. The latter two anomalies could be part of a twin lobe pattern representing one single shallow source. Shorter spread detail would be necessary to test this possibility.

LINE 196 + 00E

A wide shallow IP anomaly was outlined from 41N to 50N. It consists of a stronger central core with weaker effects on the margins.

A moderate magnitude shallow anomaly extends north from 64N to beyond the grid.

A zone of weak shallow IP response can be traced from 51 + 50N to 57 + 50N.

SUMMARY AND RECOMMENDATIONS:

Numerous weak to moderate IP anomalies have been located within the 1971 survey grid area. A correlation of the anomalies into zones has not been attempted because of the wide line spacing, the variable nature of the many anomalies and uncertainties of expected strike direction.

The survey area is characterized by generally low resistivities. A magnetometer survey carried out by Canadian Superior Exploration Ltd. shows a number of moderate magnitude magnetic anomalies with a relief of up to 1000 gammas. The contribution of magnetite to IP effect varies with grain size and resistivity environment. Fine grained magnetite in a low resistivity environment will contribute more to the IP effect than will a similar volume of coarser material in a higher resistivity environment. Since most magnetic anomalies have a correlating IP anomaly, it is believed that at least part of the IP effect is caused by contained magnetite. However, a number of moderate magnitude IP anomalies show relatively little corresponding magnetic relief. This would suggest that other metallic minerals are also contributing to the IP effect.

When considering IP anomalies in areas of this type all possible supporting information is required to assist in the evaluation of these features. Certainly the existence or not of correlating geochemical anomalies, favourable geological conditions etc. materially assist in choosing targets that justify further investigation.

The following targets are recommended for initial investigation based mainly on the IP characteristics, and supporting magnetometer and geological data. These recommendations should be modified if other supporting data would so indicate.

PROPOSED DRILL INVESTIGATION PROGRAM:

1) - Line 132E - The anomaly would appear to be a continuation of the A-2 zone located by the previous years IP survey. The zone is stronger and could be better checked on line 108E.

2) - Line 140E - The IP anomaly located between 46N and 50N appears to be part of a zone that extends east to line 148E. Line 132E did not extend far enough to the south to check the west extension. This anomaly could be checked by a 45° hole drilled south from 50 + 50N to 550'. Alternatively the anomaly could be investigated by two vertical holes collared at 47 + 50N and 49N and drilled to depths of 400 ft. and 200 ft. respectively.

3) - Line 156E - The anomaly between 59N and 64N is located just to the NW of the altered feldspar porphyry outcrop. Suggest an angle hole drilled south at 45° from 64 + 50N to a depth of 400 feet.

4) - Line 180E - The wide IP anomaly with 4 or 5 variable zones should be initially tested by drilling as follows:

- Drill 500 ft. hole at 45° to intersect a point 300 ft. below 58+50N
- Drill 350 ft. hole at 45° to intersect a point 200 ft. below 49+00N.

Additional drilling would be required to investigate IP anomalies that might have correlating geochemical anomalies.

Further investigation will depend largely on information obtained from the above described drill tests. If economic mineralization is intersected in these drill tests, it is recommended that the intermediate 400 ft. spaced lines should be surveyed to facilitate correlation of IP anomalies into zones.

McPHAR GEOPHYSICS LIMITED

A. W. Mullan, B.Sc., P. Eng.
Geologist.

P. G. Hallof, Ph.D., P. Eng.
Geophysicist.

Dated: March 12th, 1971.

Expiry Date: February 25, 1972

CERTIFICATE

I, Ashton W. Mullan, of the City of Vancouver, in the Province of British Columbia, hereby certify:

1. That I am a geologist and a fellow of the Geological Association of Canada with a business address at 837 West Hastings Street, Vancouver, B.C.

2. That I am registered as a member of the Association of Professional Engineers of the Province of Ontario and British Columbia.

3. That I hold a B.Sc. degree from McGill University.

4. That I have been practising my profession as a geologist for about twenty years.

5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly, in the property or securities of Canadian Superior Exploration Limited or any affiliate.

6. The statements made in this report are based on a study of published geological literature and unpublished private reports.

7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

Dated at Vancouver

This 12th day of March, 1971.

A.W. Mullan, B.Sc.

CERTIFICATE

I, Philip George Hallof, of the City of Toronto, Province of Ontario, do hereby certify that:

1. I am a geophysicist residing at 5 Minorca Place, Don Mills, (Toronto) Ontario.

2. I am a graduate of the Massachusetts Institute of Technology with a B.Sc. Degree (1952) in Geology and Geophysics, and a Ph.D. Degree (1957) in Geophysics.

3. I am a member of the Society of Exploration Geophysicists and the European Association of the Exploration Geophysicists.

4. I have been practising my profession for ten years.

5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the property of securities of Canadian Superior Exploration Ltd. or any affiliate.

6. The statements made in this report are based on a study of published geological literature and unpublished private reports.

7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

Dated at Vancouver

This 12th day of March 1971.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
PHILIP G. HALLOF

Philip G. Hallof, Ph.D.

Expiry Date: February 25, 1972

APPENDIX I

ASSESSMENT DETAILS

PROPERTY NAME:	Lou Group (Groups 3 and 4)
OWNER:	Leitch Mines Ltd. 300 - 999 West Pender St. Vancouver 1, B. C.
OPERATOR:	Canadian Superior Exploration Ltd. 2201 - 1177 West Hastings St. Vancouver 1, B.C.
LOCATION:	Smithers Area Omineca Mining Division British Columbia
NUMBER OF CLAIMS:	80
NATURE OF SURVEY:	Induced Polarisation
INSTRUMENT:	McPhar variable frequency I.P. (0.3 and 5.0 cps.)
LINE MILES SURVEYED:	9

APPENDIX II

LABOUR COST

Work Unit	Man Days	Rate/Day	Cost	Cost/Work Unit
Cooking	55	$22.00	1210.00	$1210.00
Camp Constr. & Maintenance	10	22.00	220.00	220.00
I. P. Survey	52	22.00	1144.00	
	140	17.00	2380.00	3524.00
Expediting	9	22.00	198.00	198.00
Supervision	5	47.00	235.00	
	12	32.00	384.00	619.00
			Total Labor Cost	$5771.00

Personnel

Geophysical Technicians
- R.J. Collen
- R. Major

Geophysical Operators
- G. Alstad
- R. Loewen
- K. Mjolsness
- D. Williamson

Cook
- M. Kehoe

Linecutters (under Contract)
- G. Auger
- N. Renaud
- A. Dennis

Supervision
- J.D. Murphy
- R.J. Overstall

APPENDIX III

COST STATEMENT

Labour Cost as Appendix II		$5771.00
Linecutting - by contract		
145.67 line miles at $110.00/mile		$1564.00
Expendable Material		
Groceries, fuel, etc.		$1225.19
Re-usuable Material		
Hardware, tools, wire, etc.		$ 537.77
Travel		
Fixed wing charter	$345.40	
Helicopter charter	$228.93	
Freight	$ 39.40	
Hotel and meals	$174.00	$ 787.73
Equipment Rental		
H.P.I.P P660 unit (Jan. 8 to Mar. 8 1971)		$1670.00
Radio		$ 153.00
Draughting and Reporting		$ 724.12
	Total cost	$12,231.81

This total is prorated between the two claim groupings as follows:

Group 3 - 2/3 of total	$8,154.54
Group 4 - 1/3 of total	$4,077.27

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.
OMINECA M.D. B.C.

LINE NO. – L-188 E

ELECTRODE CONFIGURATION
X – NX – X
PLOTTING POINT
X = 200'

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED:

APPROVED:

DATE: Mar 10, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.
OMINECA M.D. B.C.

LINE NO. - L-140 E

ELECTRODE CONFIGURATION

PLOTTING POINT

X = 200'

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB. 1971

APPROVED:

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

DATE:

PROVINCE OF BRITISH COLUMBIA, A. W. MULLAN, PROFESSIONAL ENGINEER

INDUCED POLARIZATION AND RESISTIVITY SURVEY

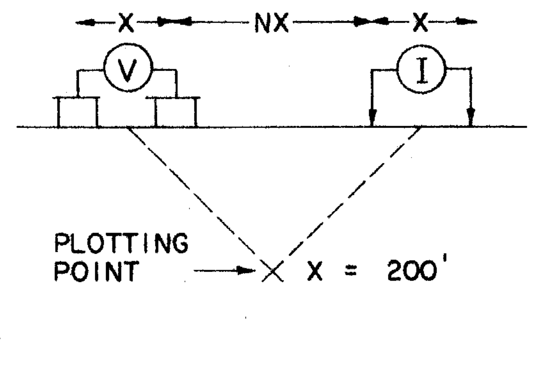
CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.

OMINECA M.D. B.C.

LINE NO. - L-148 E

ELECTRODE CONFIGURATION



FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB. 1971

APPROVED:

DATE:

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. W. MULLAN

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

INDUCED POLARIZATION AND RESISTIVITY SURVEY

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.

OMINECA M.D. B.C.

LINE NO. L-172 E

ELECTRODE CONFIGURATION

X — NX — X

PLOTTING POINT — X = 200'

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB 1971

APPROVED:

DATE: Mar. 10, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — A. W. MULLAN

INDUCED POLARIZATION AND RESISTIVITY SURVEY

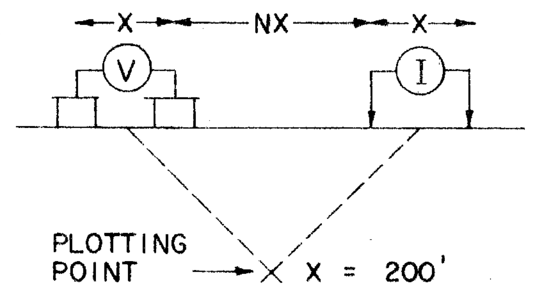
CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.

OMINECA M.D. B.C.

LINE NO. - L-196 E

ELECTRODE CONFIGURATION



FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB. 1971

APPROVED:

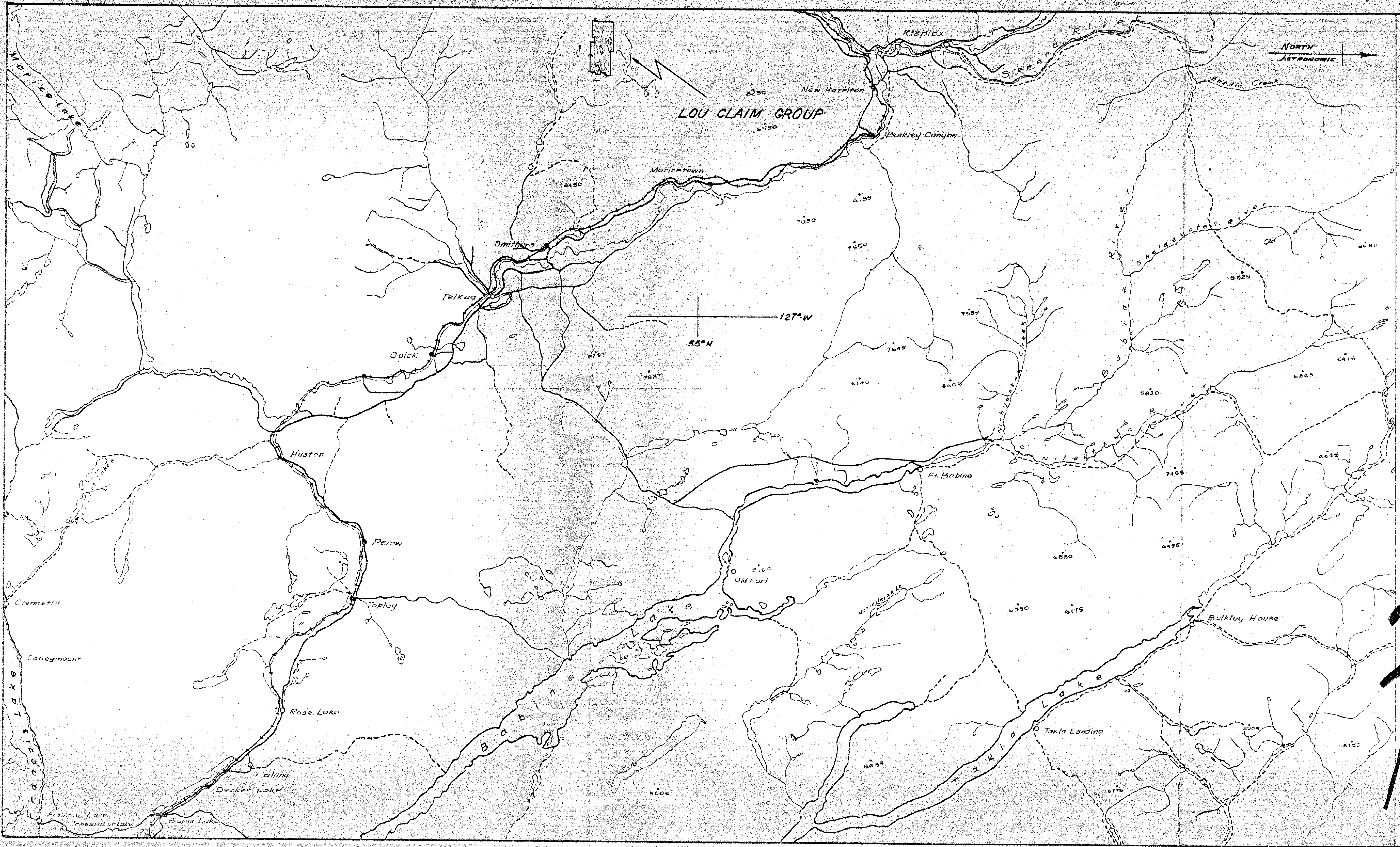
PROFESSIONAL PROVINCE OF BRITISH COLUMBIA

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

DATE: Mar 10, 1971

2937

INDUCED POLARIZATION AND RESISTIVITY SURVEY



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2937 MAP #1

2937

M-1

CANADIAN SUPERIOR EXPLORATION LTD.
SMITHERS REGIONAL OFFICE

Location Map
LOU CLAIM GROUP

JDM	1 IN. = 8 MILES	FEBRUARY 1971

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.

OMINECA M.D. B.C.

LINE NO. – L-180 E

ELECTRODE CONFIGURATION

X – NX – X

PLOTTING POINT — X = 200'

FREQUENCIES: 0.31-5.0 CPS

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

DATE SURVEYED: FEB. 1971

APPROVED:

PROFESSIONAL ENGINEER · PROVINCE OF BRITISH COLUMBIA · A.W. MULLAN

DATE: Mar 10, 1971

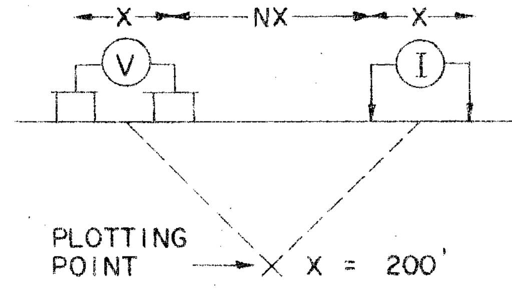
INDUCED POLARIZATION AND RESISTIVITY SURVEY

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.

OMINECA M.D. B.C.

LINE NO. - L - 132 E



FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB. 1971

APPROVED:

DATE: Mar. 10, 1971

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

INDUCED POLARIZATION AND RESISTIVITY SURVEY

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.
OMINECA M.D. B.C.

LINE NO. – L-156 E

ELECTRODE CONFIGURATION
X — NX — X
PLOTTING POINT
X = 200'

FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB. 1971

APPROVED:

DATE:

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

PROFESSIONAL ENGINEER, BRITISH COLUMBIA

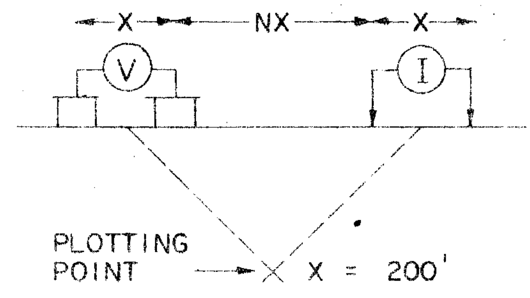
INDUCED POLARIZATION AND RESISTIVITY SURVEY

CANADIAN SUPERIOR EXPLORATION LTD.

LOU CLAIM GROUP, SMITHERS AREA.
OMINECA M.D. B.C

LINE NO. L-164 E

ELECTRODE CONFIGURATION



FREQUENCIES: 0.31-5.0 CPS

DATE SURVEYED: FEB 1971

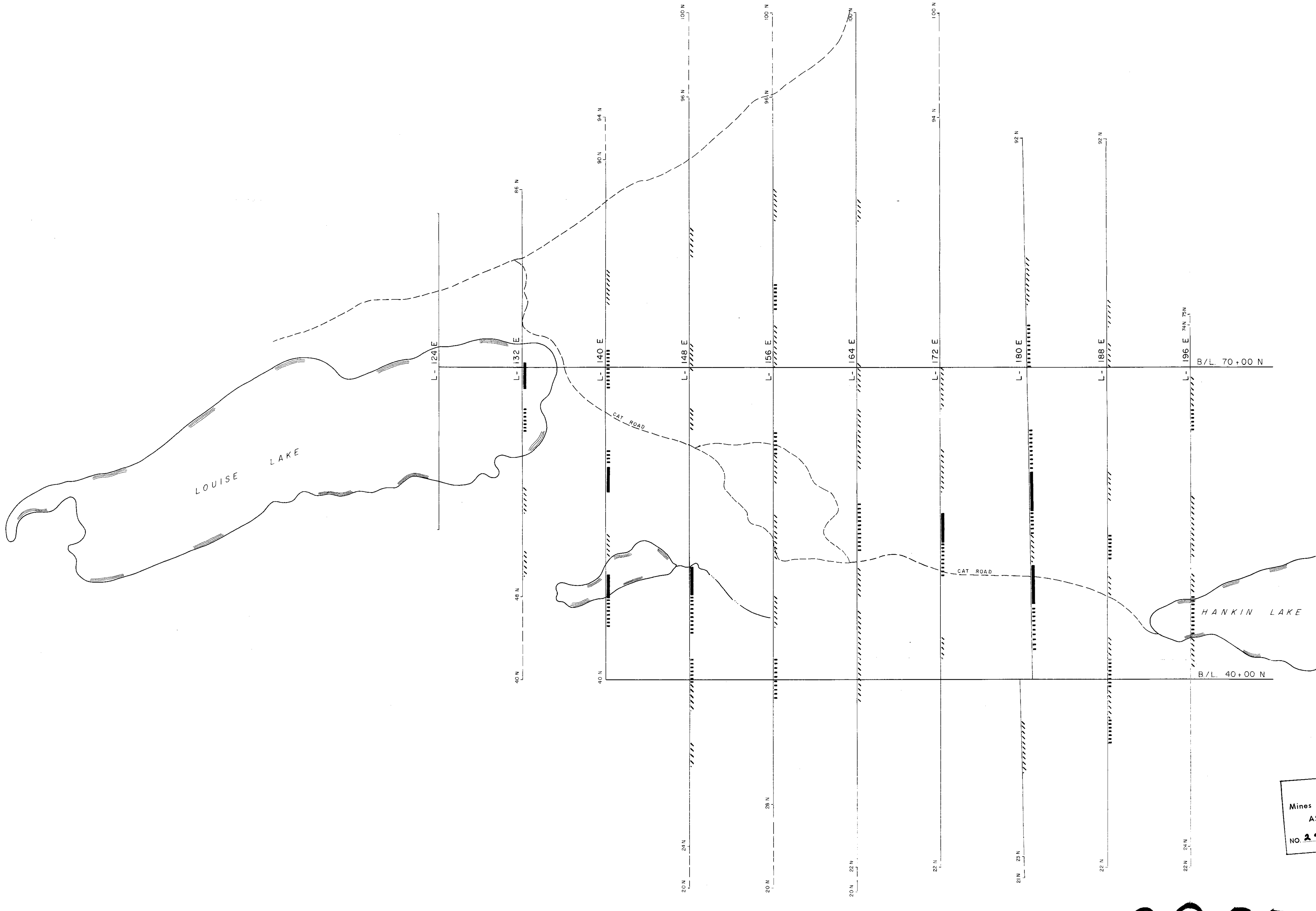
APPROVED:

DATE:

A. W. MULLAN
BRITISH COLUMBIA
ENGINEER

NOTE: CONTOURS AT LOGARITHMIC INTERVALS 1.-1.5-2.-3.-5.-7.5-10

INDUCED POLARIZATION AND RESISTIVITY SURVEY



LEGEND

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

DEFINITE ANOMALOUS ZONE
LESS DEFINITE ANOMALOUS ZONE

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2937 MAP #2

2937
M-2

CANADIAN SUPERIOR EXPLORATION LIMITED
SMITHERS REGIONAL OFFICE

LOU GROUP

INDUCED POLARIZATION AND
RESISTIVITY SURVEY
PLAN MAP

DRAUGHTSMAN:	SCALE: 1" = 400'	DATE: 10/3/71	

LOUISE LAKE
HANKIN LAKE
CAT ROAD
B/L 70+00 N
B/L 40+00 N
L-124 E
L-132 E
L-140 E
L-148 E
L-156 E
L-164 E
L-172 E
L-180 E
L-188 E
L-196 E
LEGEND
SURFACE PROJECTION OF ANOMALOUS ZONES
DEFINITE
PROBABLE
POSSIBLE
DEFINITE ANOMALOUS ZONE
LESS DEFINITE ANOMALOUS ZONE
M-3
2937
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2937 MAP #3
CANADIAN SUPERIOR EXPLORATION LIMITED
SMITHERS REGIONAL OFFICE
LOU GROUP
INDUCED POLARIZATION AND
RESISTIVITY SURVEY
PLAN MAP
DRAUGHTSMAN:
SCALE. 1" = 400'
DATE. 10/3/71