# **GOLDVALE PROPERTY**

# 1995 INDUCED POLARIZATION SURVEY GEOPHYSICAL ASSESSMENT REPORT

MAY - 2 1996

Gold Commissioner's Office VANCOUVER, B.C.

RECEIVED MINECA MINING DIVISION BRITISH COLUMBIA **BRITISH COLUMBIA** CANADA

> NTS 94D/9, 10 Latitude 56°40' N Longitude 126°34' W

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORTS

> DATE RECEIVED MAY 15 1996

### MINERAL CLAIMS

GOLDVALE 1 - 10 GOLDVALE 11 - 18 GOLDVALE 20 - 29

## TENURE NUMBERS

335766 - 335775 335782 - 335789 341385 - 341394

Owner - Operator

Consolidated North Coast Industries Ltd. 1020-800 West Pender St. Vancouver, B.C. V6C 2V6

December, 1995

bv

R. J. Haslinger, P.Eng. R. C. DeLong, B. Sc.

C. M. Rebagliato P.F.O. L. O. GIC 2. I BRAN & SSESSMENT REPOR

**FILMED** 

# GOLDVALE PROPERTY 1995 INDUCED POLARIZATION SURVEY GEOPHYSICAL ASSESSMENT REPORT

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#### 1.0 SUMMARY

The Goldvale Property is located in the Southern Toodoggone mining camp in the Omineca Mining Division in north central British Columbia. The property is composed of 28 mineral claims totalling 322 units owned 100% by Consolidated North Coast Industries Ltd. on NTS map sheets 94D/9, 10.

This area, located about 35 kilometers southeast of the Kemess South Deposit in the Kemess Porphyry District, is a favorable geological environment for hosting precious and base metal deposits.

The 1995 exploration program on the Goldvale property included preparing 37.4 line kilometers of cut line and Induced Polarization (IP) survey grid and completing an IP survey on this grid.

The IP survey outlined two main zones of increased chargeability that may represent good porphyry style targets for further exploration by drilling.

Additional IP surveying is recommended to close off the anomalies that remain open. Given the wide spacing of grid lines on this initial survey, fill-in lines are also recommended to further define the anomalies prior to drilling.

#### 2.0 INTRODUCTION

The Goldvale Property is located in the Southern Toodoggone mining camp in the Omineca Mining Division in north central British Columbia. The property is composed of 28 mineral claims totalling 322 units owned 100% by Consolidated North Coast Industries Ltd. This area is a favorable geological environment for hosting precious and base metal deposits.

Consolidated North Coast Industries Ltd. 1995 exploration program on the Goldvale property included preparing 37.4 line kilometers of cut line and Induced Polarization (IP) survey grid and completing an IP survey on this grid.

This work program was undertaken as a primary assessment of the property. The results from this program will be used to guide future exploration.

#### 3.0 LOCATION AND ACCESS

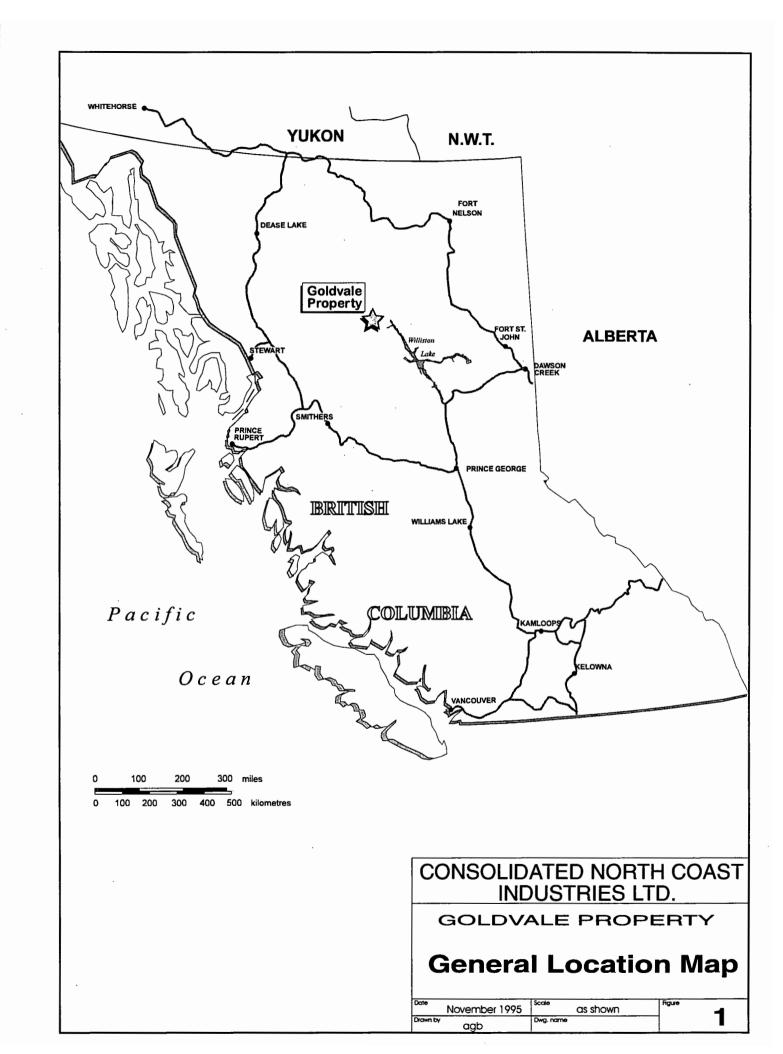
The Goldvale property is located in north central British Columbia in the Southern Toodoggone mining camp at latitude 56°40' north, longitude 126°34' west. The property lies in the Omineca Mining Division, approximately 200 km north northeast of Smithers and 400 km northwest of Prince George (Figures 1.0 and 2.0).

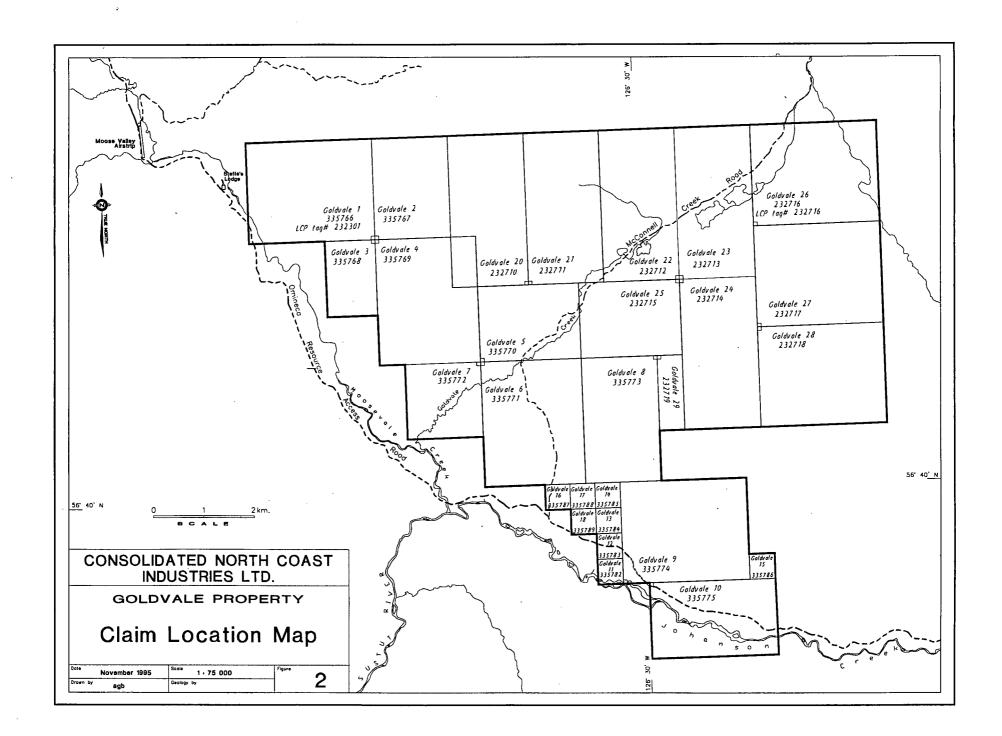
Access to the property is by the Omineca Resource Access Road (ORAR) and the McConnell Creek Road (MCR). The ORAR traverses the southwest edge of the property, while the MCR branches off the ORAR at about kilometer 420 and traverses northeast across the centre of the property. Access by fixed wing aircraft is facilitated by the Moose Valley and Sturdee Valley airstrips, both located adjacent to the ORAR approximately 2 and 40 km northwest of the property, respectively. These airstrips can be used by commuter-type aircraft based in Smithers and Vancouver.

Elevations range from 1,200 metres to 1,900 metres above mean sea level. The treeline is at about 1,600 metres with alpine meadows extending beyond.

The climate is generally moderate although highly changeable. Temperatures range from +30° to -35° Celsius. Precipitation is usually moderate and more or less uniformly distributed throughout the year. With appropriate planning, drilling and other exploration activities could be carried out year round.

The topography is moderate to steep.





# 4.0 CLAIM DATA

The Goldvale Property comprises 28 mineral claims totaling 322 units. These claims are owned 100% by Consolidated North Coast Industries Ltd. and are situated in the Omineca Mining Division on NTS map sheets 94D/9, 10 (Figure 2.0). Claim data are as follows:

Claim	Units	Record	Completion	Expiry
Name		Number	Date	Date
GOLDVALE 1	20	335766	04-May-95	04-May-99*
GOLDVALE 2	12	335767	04-May-95	04-May-99*
GOLDVALE 3	20	335768	04-May-95	04-May-99*
GOLDVALE 4	6	335769	04-May-95	04-May-99*
GOLDVALE 5	12	335770	05-May-95	05-May-99*
GOLDVALE 6	20	335771	05-May-95	05-May-99*
GOLDVALE 7	9	335772	05-May-95	05-May-99*
GOLDVALE 8	15	335773	04-May-95	04-May-99*
GOLDVALE 9	20	335774	05-May-95	05-May-99*
GOLDVALE 10	15	335775	06-May-95	06-May-99*
GOLDVALE 11	1	335782	05-May-95	05-May-99*
GOLDVALE 12	1	335783	05-May-95	05-May-99*
GOLDVALE 13	1	335784	05-May-95	05-May-99*
GOLDVALE 14	1	335785	05-May-95	05-May-99*
GOLDVALE 15	1	335786	05-May-95	05-May-99*
GOLDVALE 16	1	335787	04-May-95	04-May-99*
GOLDVALE 17	1	335788	05-May-95	05-May-99*
GOLDVALE 18	1	335789	05-May-95	05-May-99*
GOLDVALE 20	18	341385	20-Oct-95	20-Oct-99*
GOLDVALE 21	18	341386	20-Oct-95	20-Oct-99*
GOLDVALE 22	18	341387	19-Oct-95	19-Oct-99*
GOLDVALE 23	18	341388	19-Oct-95	19-Oct-99*
GOLDVALE 24	18	341389	19-Oct-95	19-Oct-99*
GOLDVALE 25	12	341390	19-Oct-95	19-Oct-99*
GOLDVALE 26	20	341391	19-Oct-95	19-Oct-99*
GOLDVALE 27	20	341392	20-Oct-95	20-Oct-99*
GOLDVALE 28	20	341393	20-Oct-95	20-Oct-99*
GOLDVALE 29	3	341394	20-Oct-95	20-Oct-99*

<sup>\*</sup> subject to acceptance of this assessment report.

#### 5.0 EXPLORATION HISTORY

Placer gold was discovered in 1889 at the mouth of McConnell Creek, located about 18 kilometers north of the property. This led to a brief gold rush in 1907.

A gold-silver-copper prospect was discovered at the source of Menard Creek in the 1940's and staked as the Marmot property in 1966 (Church, 1973). This property, immediately north of the Goldvale Property, was explored by a number of mining companies including Falconbridge Minerals who last explored the property in the 1980's.

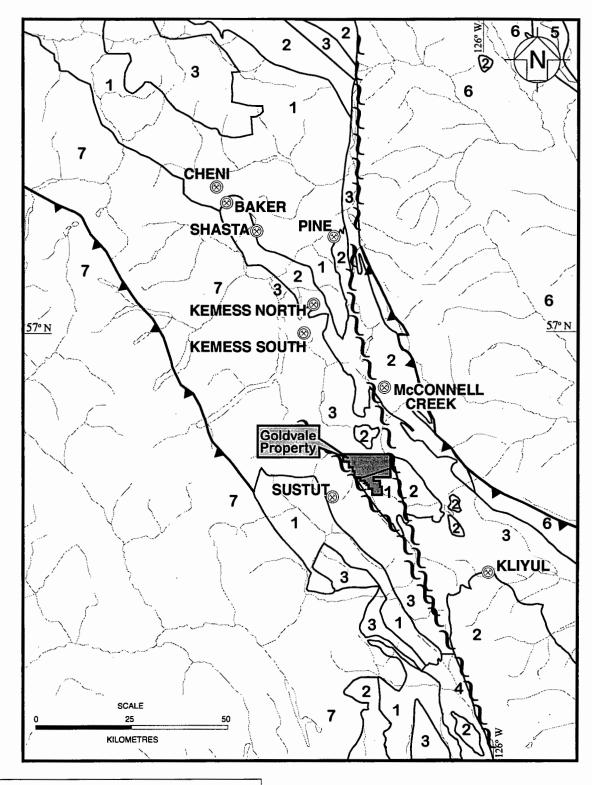
In 1968, Kennco Explorations Limited discovered the Chapelle epithermal gold-silver vein deposit, located roughly 70 kilometers northwest of the property, while searching for copper-molybdenum deposits in the Toodoggone District. This deposit was mined as the Baker Mine by Dupont of Canada Ltd. between 1980 and 1984. By 1985 several major exploration companies had explored the region for precious and base metal occurrences. Their work resulted in the discovery of several epithermal gold-silver prospects, as well as the Kemess North, Kemess South and other porphyry gold-copper prospects.

In 1990 and 1991, El Condor Resources Ltd. delineated the Kemess South gold-copper deposit, located about 35 kilometers to the northwest (Rebagliati, 1993, Figure 3.0). The deposit is currently being developed for mining by Royal Oak Mines Ltd.

#### 6.0 GEOLOGICAL SETTING

The property area, as summarized from Richards (1975), is underlain by mixed mafic flows and pyroclastics and interbedded marine sediments, mainly argillite. These rocks are locally intruded by small quartz diorite to monzodiorite stocks, and just to the north of Menard Creek by quartz monzodiorite of the Johanson Lake Stock. The property is flanked along the southwest by the Moose Valley Fault, a north northwesterly trending splay off the Pinchi Fault. Sustut Group sediments cover the basement rocks on the west side of the Moose Valley fault along the west edge of the property.

For copper-gold porphyry exploration, the property is favorably located in the Kemess Porphyry District within the productive Takla volcanic rocks, in an area containing major structures and porphyry style stocks.



#### LEGEND

- 1 Hazelton Group
- 2 Intrusive
- 3 Takla Group
- 4 Cache Creek Group
- 5 Earn and Road River Groups
- 6 Paleozoic Sediments (Includes Atan, Kechika, Lay Range Assemblage and Undivided Paleozoic Sediments)
- 7 Hazelton Group

~ Faul

Thrust Fault

Major Mines / Deposits

# CONSOLIDATED NORTH COAST INDUSTRIES LTD.

**GOLDVALE PROPERTY** 

**Regional Setting** 

November 1995	Scale as shown	Figure
Drawn by agb	Dwg. name	3

#### 7.0 INDUCED POLARIZATION SURVEY

In November and December 1995, Consolidated North Coast Industries Ltd. contracted Coureur Des Bois Ltd. of Whitehorse to prepare a grid on the Goldvale property and then contracted Lloyd Geophysics of Vancouver to complete an Induced Polarization (IP) survey of the grid. The location of the IP survey grid with respect to the Goldvale claims is shown in Figure 4.

A detailed documentation and explanation of the IP survey and analysis of the survey results are given in Appendix 1.

The IP survey outlined two main zones of increased chargeability that may represent good porphyry style targets for further exploration by drilling.

Additional IP surveying is recommended to close off the anomalies that remain open. Given the wide spacing of grid lines on this initial survey, fill-in lines are also recommended to further define the anomalies prior to drilling.

#### 8.0 CONCLUSIONS

The IP survey outlined two main zones of increased chargeability that may represent good porphyry style targets for further exploration by drilling.

Additional IP surveying is recommended to close off the anomalies that remain open. Given the wide spacing of grid lines on this initial survey, fill-in lines are also recommended to further define the anomalies prior to drilling.

# 9.0 STATEMENT OF COSTS

# GOLDVALE PROPERTY (November to December 1995)

Cut line and grid preparation by Coureur Des Bois line cutters 116 man days at \$250.00 per man day		\$ 29,000.00
Helicopter mobilization and camp support		11,120.00
Camp services including room and board and first aid		16,300.00
Lloyd Geophysics IP survey		40,810.00
		<del></del>
	Total	\$ 97,230.00

#### 10.0 REFERENCES

- Church, B. N., 1973; Energy, Mines and Petroleum Resources Annual Report, p. 434.
- Rebagliati, C. M., 1993; Phase 6, 1993 Exploration Diamond Drilling on the Kemess South Property, Unpublished report, El Condor Resources Ltd. and St. Philips Resources Inc.
- Richards, T., 1975; McConnell Creek Map Area (94D/E), 1:250,000 scale geology, Geological Survey of Canada.

#### 11.0 STATEMENT OF QUALIFICATIONS

I, Richard Josef Haslinger, of 821 West 19th Avenue, Vancouver, B.C., hereby certify that:

- I am a Geological Engineer employed by Consolidated North Coast Industries Ltd., a mineral exploration company with offices at 1020 - 800 West Pender Street, Vancouver, B.C.
- 2. I am a graduate of the University of British Columbia (B. Sc., Geological Engineering, 1986).
- 3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia.
- 4. I have practiced my profession continuously since graduation.
- 5. The foregoing report is based on:
  - a) A study of available company and government reports.
  - b) My personal knowledge of the area resulting from my direct supervision of and participation in exploration on the property from August to December, 1995.

R. J. Haslinger, P.Eng. December 22, 1995

R. J. HASLINGER

# **APPENDIX 1.0**

A GEOPHYSICAL ASSESSMENT REPORT ON AN INDUCED POLARIZATION SURVEY ON THE GOLDVALE PROPERTY

 $\mathbf{BY}$ 

LLOYD GEOPHYSICS INC.

# CONSOLIDATED NORTH COAST INDUSTRIES LTD.

A GEOPHYSICAL ASSESSMENT REPORT
ON AN INDUCED POLARIZATION SURVEY
ON THE GOLDVALE PROPERTY
OMINECA MINING DIVISION,
BRITISH COLUMBIA

LATITUDE 56°40'N LONGITUDE 126°34'W NTS 94D9W & 94D10E

BY

LLOYD GEOPHYSICS INC.

Daniel A. Klit, B.Sc. and John Lloyd, M.Sc., P.Eng.

DECEMBER, 1995



#### **SUMMARY**

During the period November 17, to December 4, 1995, Lloyd Geophysics conducted an Induced Polarization (IP) survey on the Goldvale property, in the Omineca Mining Division, British Columbia, for Consolidated North Coast Industries Ltd.

The IP survey outlined two main zones of increased chargeability which have been interpreted as being good porphyry style targets for further exploration by drilling.

Additional IP surveying has been recommended to close off the anomalies where they remain open. Fill-in lines are also recommended to further define the anomalies and any relationships or trends associated with them.



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#### 1.0 INTRODUCTION

During the period November 17 to December 4, 1995, Lloyd Geophysics Inc. conducted an Induced Polarization (IP) survey on the Goldvale property, located in the Omineca Mining Division, British Columbia, which is 100% owned by Consolidated North Coast Industries Ltd.

#### 2.0 PROPERTY LOCATION AND ACCESS

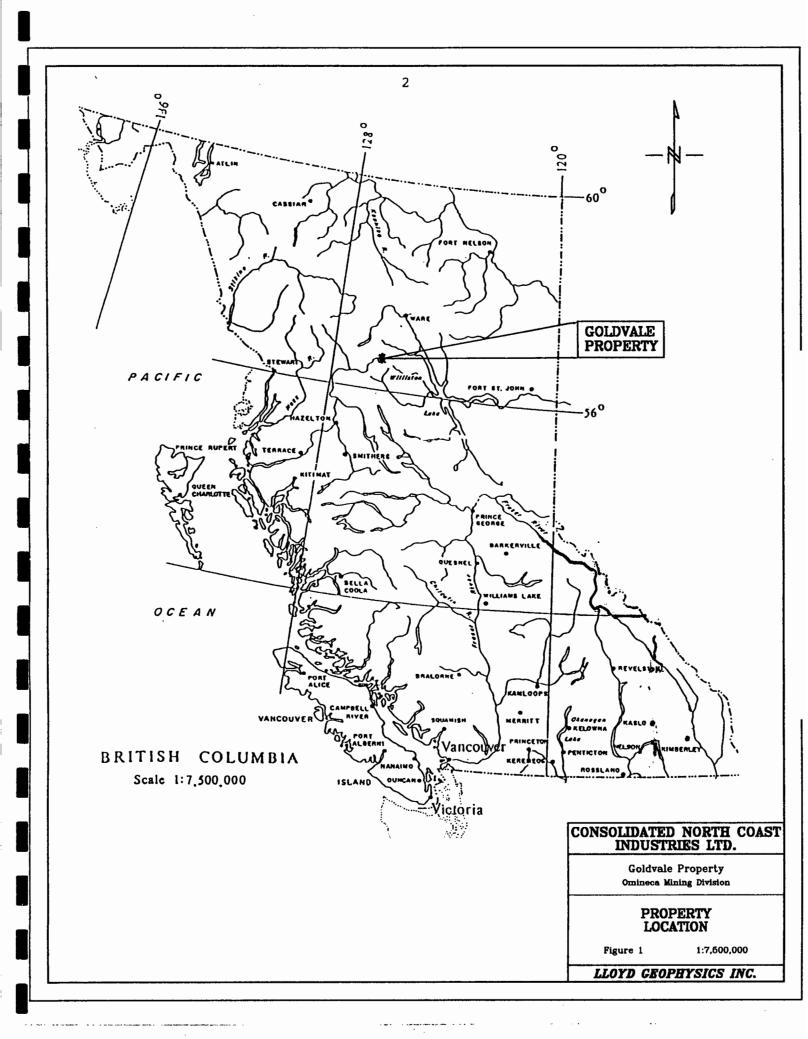
The Goldvale property is located in north central British Columbia in the Southern Toodoggone mining camp at latitude 56°40' north, longitude 126°34' west. The property lies in the Omineca Mining Division, approximately 200 km north north-east of Smithers and 400 km northwest of Prince George (Fig 1).

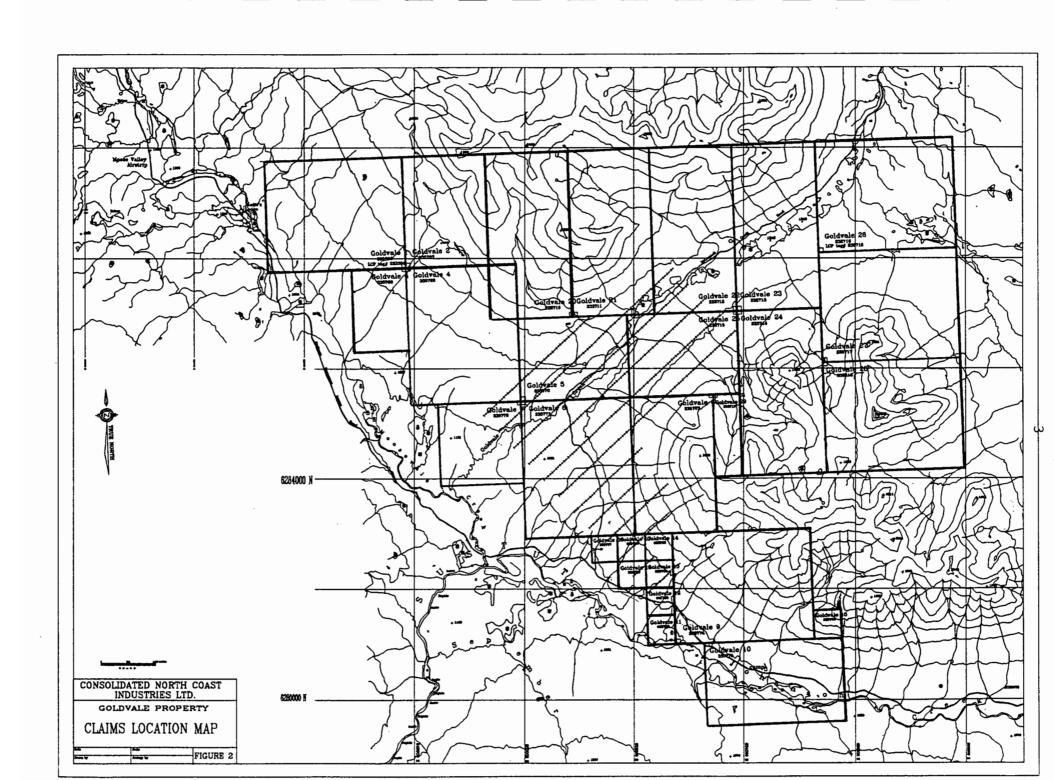
Access to the property is by the Omineca Resource Access Road (ORAR) and the McConnell Creek Road (MCR). The ORAR traverses the southwest edge of the property, while the MCR branches off the ORAR at about kilometre 420 and traverses northeast across the centre of the property. Access by fixed wing aircraft is facilitated by the Moose Valley and Sturdee Valley airstrips, both located adjacent to the ORAR approximately 2 and 40 km northwest of the property, respectively. These airstrips can be used by commuter-type aircraft based in Smithers and Vancouver.

#### 3.0 PROPERTY STATUS AND CLAIM HOLDINGS

The Goldvale property comprises 28 modified grid claims totalling 322 units. These claims are owned 100% by Consolidated North Coast Industries Ltd. and are situated in the Omineca Mining Division on NTS map sheet 94D9 and 94D10 (Fig 2). Pertinent claim information as provided by Consolidated North Coast Industries Ltd is outlined below:







Claim Name	Record Number	No. of Units	Expiry Date
GOLDVALE 1	335766	20	04-May-96
GOLDVALE 2	335767	12	04-May-96
GOLDVALE 3	335768	20	04-May-96
GOLDVALE 4	335769	06	04-May-96
GOLDVALE 5	335770	12	05-May-96
GOLDVALE 6	335771	20	05-May-96
GOLDVALE 7	335772	09	05-May-96
GOLDVALE 8	335773	15	04-May-96
GOLDVALE 9	335774	20	05-May-96
GOLDVALE 10	335775	15	06-May-96
GOLDVALE 11	335782	01	05-May-96
<b>GOLDVALE 12</b>	335783	01	05-May-96
GOLDVALE 13	335784	01	05-May-96
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<b>GOLDVALE 16</b>	335787	01	04-May-96
<b>GOLDVALE 17</b>	335788	01	05-May-96
<b>GOLDVALE 18</b>	335789	01	05-May-96
<b>GOLDVALE 20</b>	341385	18	20-Oct-96
<b>GOLDVALE 21</b>	341386	18	20-Oct-96
<b>GOLDVALE 22</b>	341387	18	19-Oct-96
<b>GOLDVALE 23</b>	341388	18	19-Oct-96
<b>GOLDVALE 24</b>	341389	18	19-Oct-96
<b>GOLDVALE 25</b>	341390	12	19-Oct-96
<b>GOLDVALE 26</b>	341391	20	19-Oct-96
<b>GOLDVALE 27</b>	341392	20	20-Oct-96
<b>GOLDVALE 28</b>	341393	20	20-Oct-96
<b>GOLDVALE 29</b>	341394	03	20-Oct-96



#### 4.0 GEOLOGICAL SETTING

The property area, as summarized from Richards (1975), is underlain by mixed mafic flows and pyroclastics and interbedded marine sediments, mainly argillite. These rocks are locally intruded by small quartz diorite to monzodiorite stocks, and just to the north of the Menard Creek by quartz monzodiorite of the Johanson Lake Stock. The property is flanked along the southwest by the Moose Valley Fault, a north northwesterly trending splay off the Pinchi Fault. Sustut Group sediments cover the basement rocks on the west side of the Moose Valley fault along the west edge of the property.

For copper-gold porphyry exploration, the property is favourably located in the Kemess Porphyry District within the productive Takla volcanic rocks, an area containing major structures and porphyry style stocks.

#### 5.0 INSTRUMENT SPECIFICATIONS

The equipment used was a time domain measuring system consisting of a Wagner Leland/Onan motor generator set and a Mark II transmitter manufactured by Huntec Limited, Toronto, Canada and a 6 channel IP-6 receiver manufactured by BRGM Instruments, Orleans, France. The Wagner Leland/Onan motor generator supplies in excess of 7.5 kilowatts of 3 phase power to the ground at 400 hertz via the Mark II transmitter.

The transmitter was operated with a cycle time of 8 seconds and the duty cycle ratio: [(time on)/(time on + time off)] was 0.5 seconds. This means the cycling sequence of the transmitter was 2 seconds current "on" and 2 seconds current "off" with consecutive pulses reversed in polarity.

The IP-6 receiver can read up to 6 dipoles simultaneously. It is microprocessor controlled, featuring automatic calibration, gain setting, SP cancellation and fault diagnosis. To



accommodate a wide range of geological conditions, the delay time, the window widths and hence the total integration time is programmable via the keypad. Measurements are calculated automatically every 2 to 4 seconds from the averaged waveform which is accumulated in memory.

The window widths of the IP-6 receiver can be programmed arithmetically or logarithmically. For this particular survey the instrument was programmed arithmetically into 10 equal window widths or channels,  $Ch_0$ ,  $Ch_1$ ,  $Ch_2$ ,  $Ch_3$ ,  $Ch_4$ ,  $Ch_5$ ,  $Ch_6$ ,  $Ch_7$ ,  $Ch_8$ ,  $Ch_9$  (see Figure 3). These may be recorded individually and summed up automatically to obtain the total chargeability. Similarly, the resistivity  $(\rho_8)$  in ohm-metres is also calculated automatically.

The instrument parameters chosen for this survey were as follows:

Cycle Time  $(T_c)$  = 8 seconds

Ratio (Time On) = 1:1 (Time Off)

**Duty Cycle Ratio** 

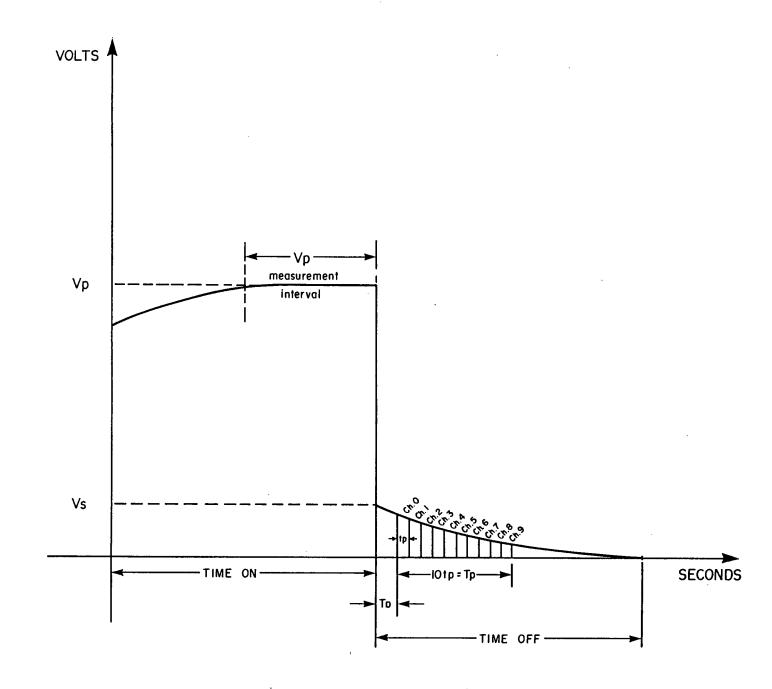
 $\frac{\text{(Time On)}}{\text{(Time On)} + \text{(Time Off)}} = 0.5$ 

Delay Time  $(T_D)$  = 120 milliseconds

Window Width  $(t_p)$  = 90 milliseconds

Total Integration Time = 900 milliseconds





# **BRGM IP-6 RECEIVER PARAMETERS**

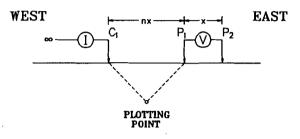
Figure 3



#### **6.0 SURVEY SPECIFICATIONS**

The configuration of the pole-dipole array used for the survey is shown below:

# POLE-DIPOLE ARRAY



$$x = 50$$
 metres  $n = 1,2,3,4$  and 5

The dipole length (x) is the distance between  $P_1$  and  $P_2$  and mainly determines the sensitivity of the array. The electrode separation (nx) is the distance between  $C_1$  and  $P_1$  and mainly determines the depth of penetration of the array.

On the Goldvale property the Induced Polarization survey was carried out with the current electrode,  $C_1$ , west of the potential measuring dipole  $P_1P_2$ . Here the survey lines were 400 metres apart and measurements were taken for x = 50 metres and n = 1,2,3,4 and 5.

#### 7.0 DATA PROCESSING

The data collected was processed in the field at the end of each survey day using a portable 486 computer and a Fujitsu printer.

The IP pseudo-sections were plotted out in the field and contoured using in-house software based



on the mathematical solution known as kriging.

Provide Sections (Scale 1.2500)

In the office, the data was transferred to mylar using a PENTIUM P90 computer coupled to an HP Design Jet plotter for preparation of the final pseudo-sections and contour plan maps.

#### **8.0 DATA PRESENTATION**

The data obtained from the survey described in this report is presented on 12 pseudo-sections and 2 plan maps as outlined below:

Pseudo-sections	(Scale 1:2300)		
Line No	Dwg No	Line No	Dwg No
42400N	95378-01	44800N	95378-07
42800N	95378-02	45200N	95378-08
43200N	95378-03	45600N	95378-09
43600N	95378-04	46000N	95378-10
44000N	95378-05	46400N	95378-11
44400N	95378-06	46800N	95378-12

#### Plan Maps (Scale 1:5000)

Chargeability 15 Point Triangular Filter 95378-13
Resistivity 15 Point Triangular Filter 95378-14

#### 9.0 DISCUSSION OF RESULTS

An IP response depends largely on the following factors:

- 1. The volume content of sulphide minerals
- 2. The number of pore paths that are blocked by sulphide grains



- 3. The number of sulphide faces that are available for polarization
- 4. The absolute size and shape of the sulphide grains and the relationship of their size and shape to the size and shape of the available pore paths
- 5. The electrode array employed
- 6. The width, depth, thickness and strike length of the mineralized body and its location relative to the array
- 7. The resistivity contrast between the mineralized body and the unmineralized host rock

The sulphide content of the underlying rocks is one the critical factors that we would like to determine from the field measurements. Experience has shown that this is both difficult and unreliable because of the large number of variables, described above, which contribute to an IP response. The problem is further complicated by the fact that rocks containing magnetite, graphite, clay minerals and variably altered rocks produce IP responses of varying amplitudes.

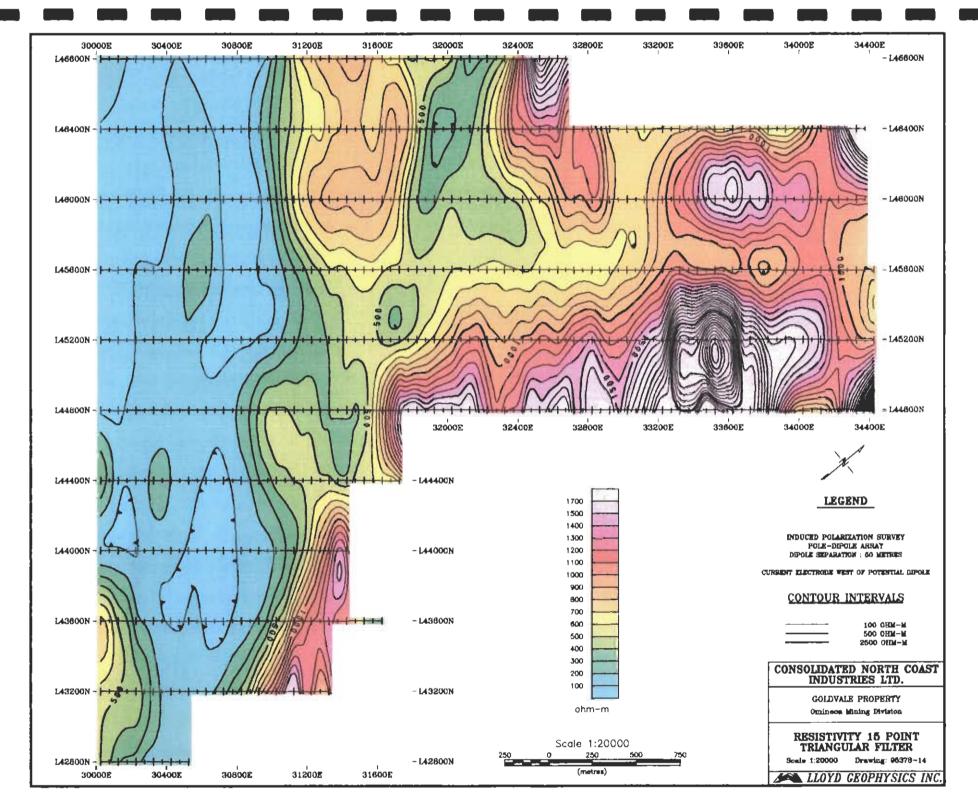
A detailed study has been made of the pseudo-sections which accompany this report. These pseudo-sections are not sections of the electrical properties of the sub-surface strata and cannot be treated as such when determining the depth, width and thickness of a zone which produces an anomalous pattern. The anomalies are classified into 4 groups: definite, probable, and possible anomalies and anomalies which have a much deeper source. These latter anomalies are mostly related to deeper overburden cover.

This classification is based partly on the relative amplitudes of the chargeability and to a lesser degree on the resistivity response. In addition the overall anomaly pattern and the degree to which this pattern may be correlated from line to line is of equal importance.

The IP survey on the Goldvale property outlined two large low amplitude chargeability anomalies with coincident resistivity highs (Figs 4 and 5).

The main anomaly on the grid is centred at about 33200E on line 45200N and is almost circular in shape with a diameter of about 800 metres. Anomalous chargeability values here are from





8 milliseconds to over 15 milliseconds with background varying from 3 to 6 milliseconds. It comes to surface at about 32800E on line 45200N with the central core of the anomaly appearing to be covered by a relatively thin layer of overburden and the outer peripheries being much deeper. With respect to the overall size, shape and porphyry style signature of the IP anomaly, it is a good target for further exploration by drilling.

Two smaller, near surface anomalies exist to the north on line 46000N between 33700E and 34100E. These anomalies are also coincident with a resistivity high and may be related to the larger main anomaly. Further IP surveying on 200 metres lines would help to determine this. If these smaller anomalies are associated with the main anomaly then they define a north-south trend which can be projected to a well defined low amplitude anomaly on the east end of the line 44400N which is open to the east. This line was not completed during the present survey due to winter conditions at the time of the survey.

The second large chargeability anomaly is centred at 32450E on line 46400N. The anomaly is well defined with anomalous values ranging from 8 to over 17 milliseconds within a resistivity high and remains open to the north and to the west. Geophysical responses of this and larger main anomaly are very similar suggesting that they may be derived from and share a common source at depth. The porphyry style signature and probable relationship with the main anomaly makes this an attractive target for further exploration by drilling.

#### 10.0 CONCLUSIONS AND RECOMMENDATIONS

Two large zones of increased chargeability were outlined by the IP survey and have been interpreted as having porphyry style signatures making them excellent targets for further exploration by drilling.

Initially, a fence of 3 to 4 holes over the core of each anomaly is recommended to determine the source of the anomalies. If favourable results are encountered then step out holes increasing



in depth are recommended.

Further exploration by IP is recommended to close off the anomalies as well as fill in lines on 200 metre spacings to better define any relationships and trends associated with them.

Respectfully submitted,

LLOYD GEOPHYSICS INC.

Daniel a. Ko

Daniel A. Klit, B.Sc.

John Lloyd, M.Sc., P.Eng.

# APPENDIX A

# PERSONNEL EMPLOYED ON SURVEY

<u>Name</u>	Occupation	Address	Dates Worked
J. Lloyd	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Dec 18/95
D. Klit	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 18 - Dec 4/95 Dec 12-14/95
J. Cornock	Geophysicist	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29 - Dec 3/95
A. Lloyd	Geophysical Technician	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 18 - Dec 4/95
C. Bilquist	Geophysical Technician	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29 - Dec 3/95
B. Westerber	g Geophysical Technician	#445-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 18 - Dec 4/95
S. Garrett	Geophysical Technician	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29 - Dec 3/95
M. Torney	Helper	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 18 - Dec 4/95
M Dolphin	Helper	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 18 - Dec 4/95
T. Vanderwa	rt Helper	#455-409 Granville Street Vancouver, B.C.V6C 1T2	Nov 29 - Dec 3/95
M. Lapointe	Helper	#455-409 Granville Street Vancouver, B.C. V6C 1T2	Nov 29 - Dec 3/95



## APPENDIX B

#### **COST OF SURVEY AND REPORTING**

Lloyd Geophysics Inc. contracted the mobilization/demobilization and the IP data acquisition on a per diem basis. Truck charges, living and travelling expenses, data processing, computer plotting, map reproduction and interpretation and report writing were additional costs. The breakdown of these costs is as follows:

Mobilization/Demobilization and Data Acquisition	\$ 32750.00
Truck	2174.77
Living and Travelling	488.39
Data Processing and Computer Plotting	536.25
Consumables	747.71
Interpretation and Report Writing	1450.00
Subtotal	\$ 38147.12
G.S.T.	2670.29
Total Cost:	\$ 40817.41



#### APPENDIX C

#### **CERTIFICATION OF AUTHORS**

- I, John Lloyd, of #455 409 Granville Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:
- 1. I graduated from the University of Liverpool, England in 1960 with a B.Sc. in Physics and Geology, Geophysics Option.
- 2. I obtained the diploma of the Imperial College of Science, Technology and Medicine(D.I.C.), in Applied Geophysics from the Royal School of Mines, London University in 1961.
- 3. I obtained the degree of M.Sc. in Geophysics from the Royal School of Mines, London University in 1962.
- 4. I am a member in good standing of the Association of Professional Engineers in the Province of British Columbia, the Society of Exploration Geophysicists of America, the European Association of Exploration Geophysicists and the Canadian Institute of Mining and Metallurgy.
- 5. I have been practising my profession for over thirty years.

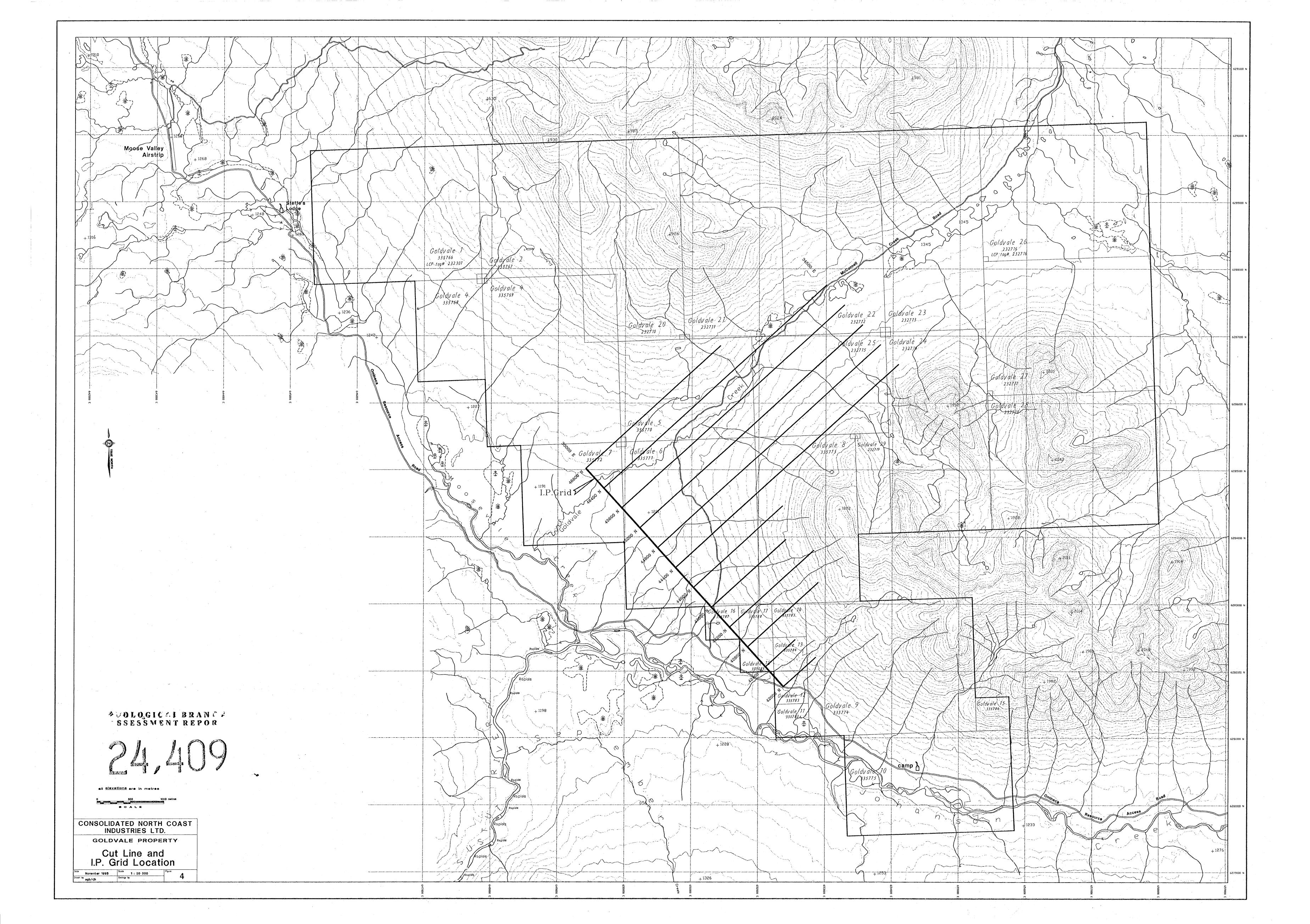
Vancouver, B.C.

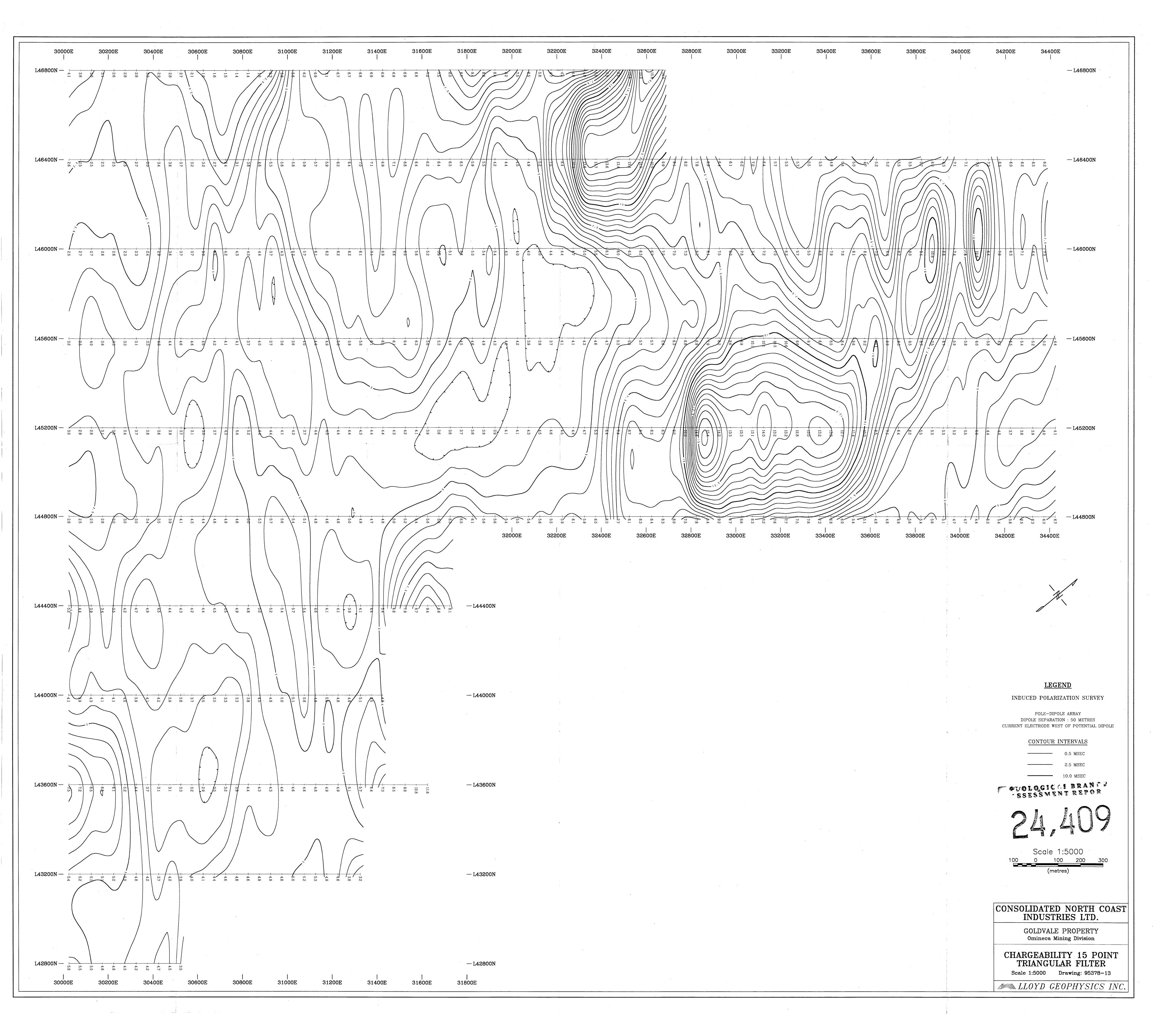


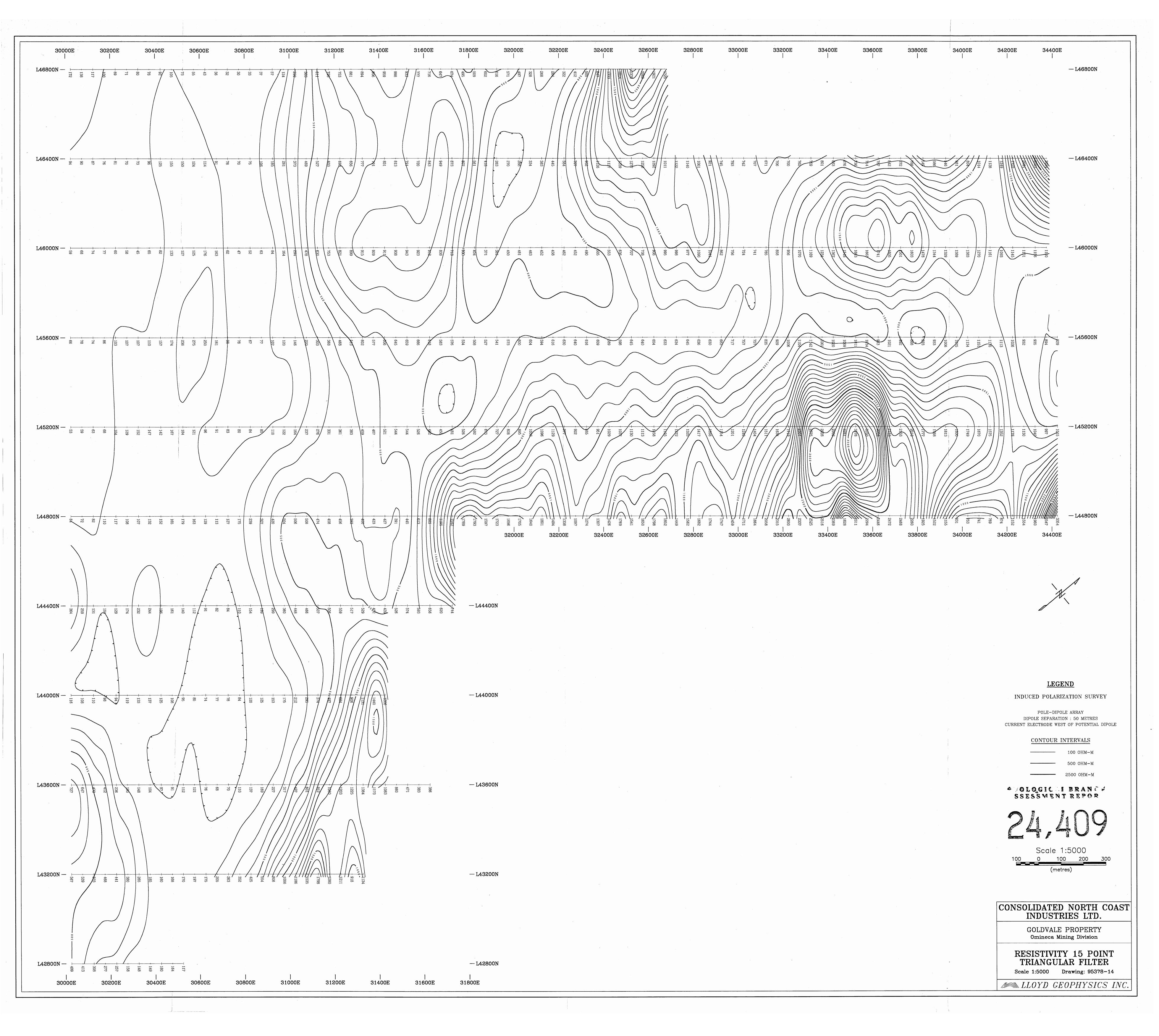
- I, Daniel A. Klit, of #455 409 Granville Street, in the City of Vancouver, in the Province of British Columbia, do hereby certify that:
- 1. I graduated from the University of British Columbia in 1987 with a B.Sc. in Geophysics.
- 2. I am a member in good standing of the Society of Exploration Geophysicists of America, British Columbia Geophysical Society, British Columbia and Yukon Chamber of Mines and the Northwest Mining Association.
- 3. I have practiced my profession continuously since 1986.

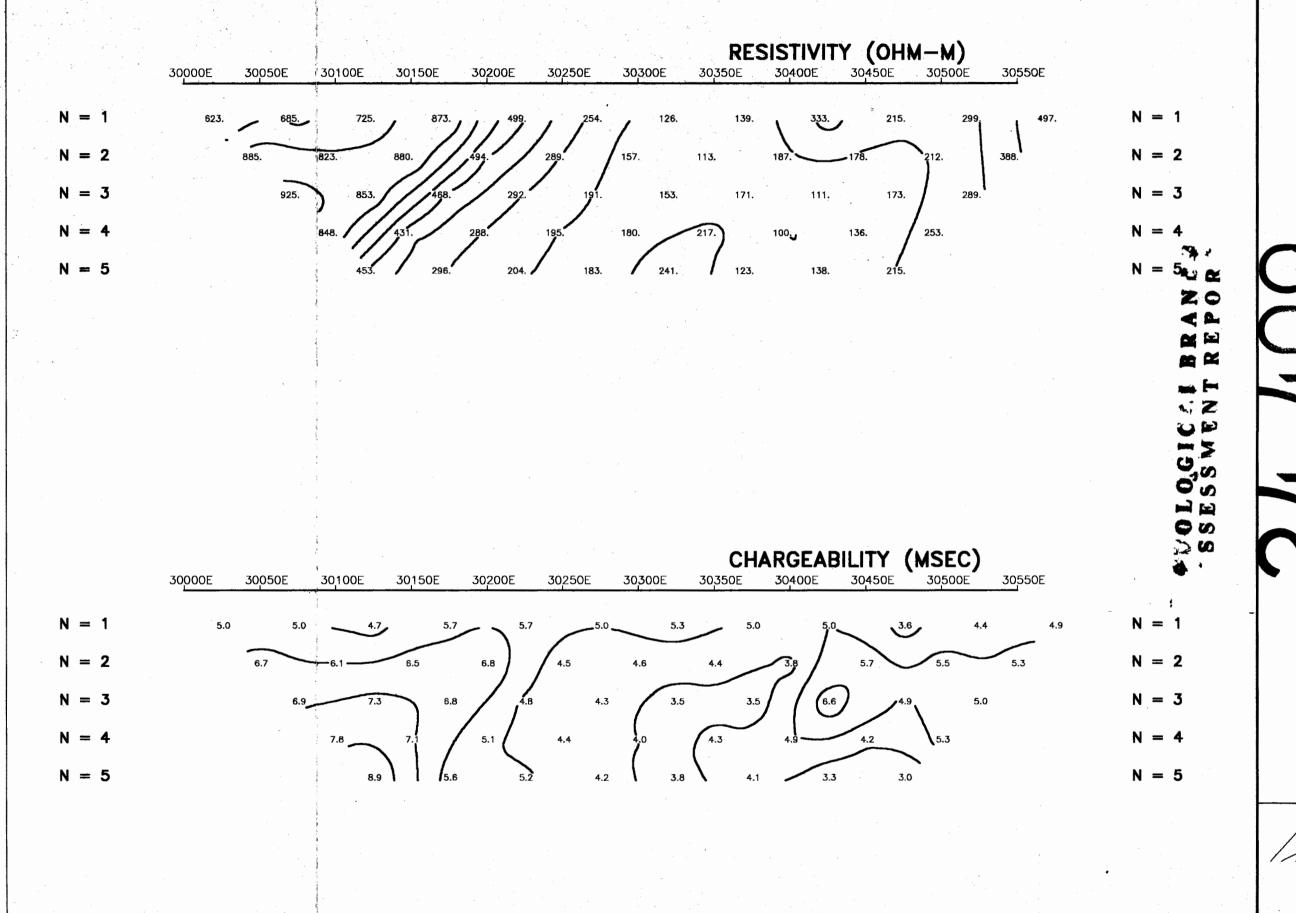
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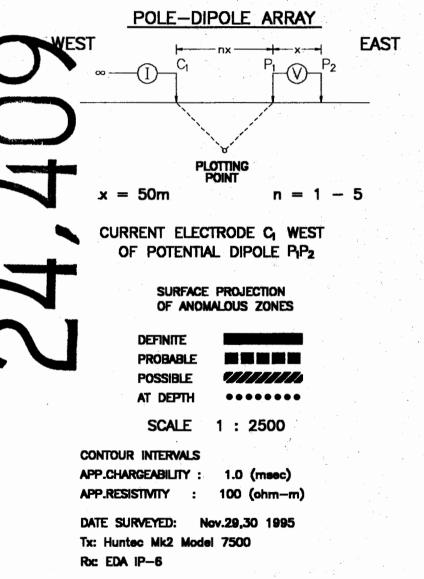




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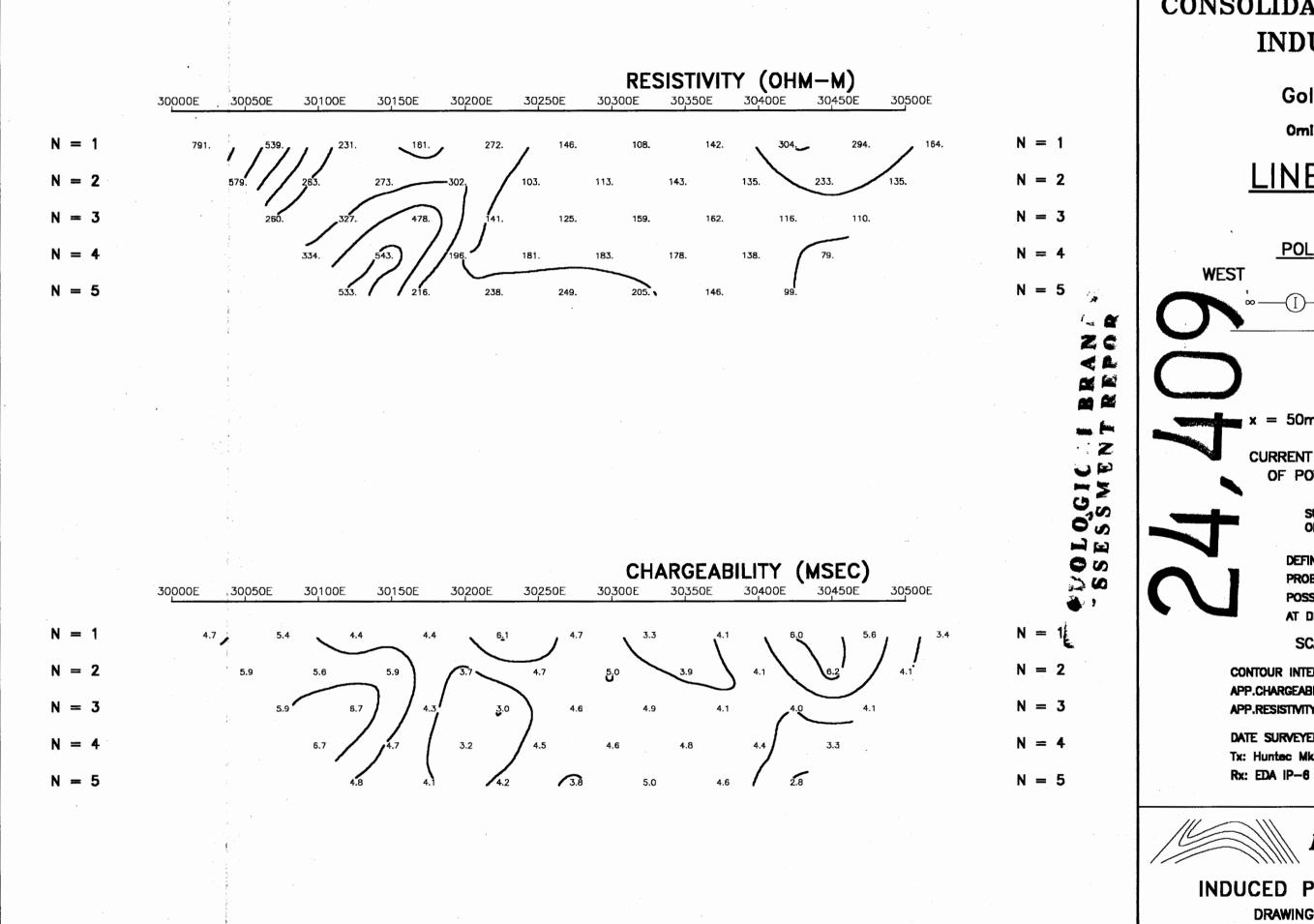




LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

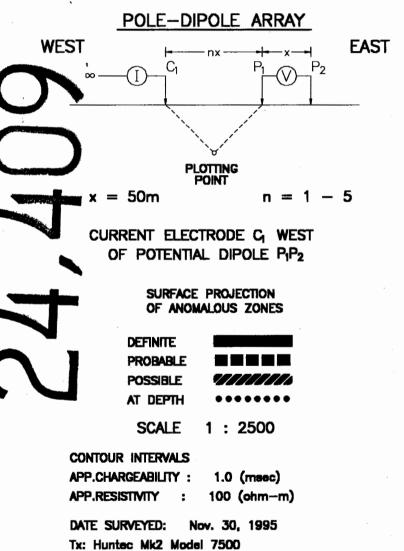
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LLOYD GEOPHYSICS INC.

INDUCED POLARIZATION SURVEY

DRAWING NUMBER: 95378-02

