Summary Geophsyical Report
on an
Induced Polarization Survey
conducted on behalf of

HINTERLAND RESOURCE SERVICES LIMITED

Lunar Creek Project, Cassiar Mt. Range
Liard Mining Division, NTS 94 E/14
Latitude 57°45'N, Longitude 127°19'W

AUTHOR: E. Trent Pezzot, B.Sc.,
Geophysicist

DATE OF WORK: August 02-10, 1981

DATE OF REPORT: September 11, 1981

82-272-10467

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ILLUSTRATIONS

HINTERLAND RES. SERVICES LTD.

LUNAR CREEK PROJECT

LIARD MINING DIVISION — BRITISH COLUMBIA

LOCATION MAP

Glen E. White
geophysical consulting
&
services ltd

FIG. 1

INTRODUCTION

During the period August 02 to August 10, 1981, Glen E. White Geophysical Consulting & Services Ltd. undertook approximately 10 kilometers of induced polarization survey on behalf of Hinterland Resource Services Ltd. across a portion of their Lunar Creek Project area. The survey was conducted across a previously established grid for the purpose of locating and delineating a subsurface source of anomalous geochemistry observed in the soils.

LOCATION & ACCESS

The project area is located approximately 200 miles due north of Smithers, B.C. in the Liard Mining Division and NTS 94 E/14. Approximate geographical co-ordinates are latitude 57°45'N and longitude 127°19'W, (Figure 1).

The geophysical crew was mobilized by helicopter into a temporary exploration camp and it is believed by the author that no ground access to the property is available at this time.

SURVEY GRID

A grid comprised of seven lines, trending north-south and spaced at 200 meter intervals was established with lines labelled 9+00W to 3+00E inclusive. Stations surveyed were at 50 meter intervals and labelled 0+00N through 12+00N inclusive as shown on the geophysical interpretation maps, Figures 2 and 3.

INDUCED POLARIZATION SURVEY

The equipment used on this survey was the Mark IV 2.5 kw transmitter and Mark III receiver. Power was obtained from a Briggs and Stratton motor coupled to a 2.5 kw 400 cycle, three phase generator, providing a maximum of 2.5 kw D.C. to the ground. The cycling rate is 1.5 seconds "current on" and 0.5 seconds "current off", the pulse reversing continuously in polarity. Power was transmitted to the ground through two potential electrodes, P_1 and P_2, which were deployed in the pole-dipole array with an "a" spacing of 100 m and separations of n = 1. One line was detailed with n = 1, 2 and 3.

The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes C_1 and C_2, the primary voltage (V_p) appearing between electrodes P_1 and P_2 during the "current on" part of the cycle, and the secondary voltage (V_s) appearing between electrodes P_1 and P_2 during the "current off" part of the cycle. A cycle time of 4 seconds was and with a duty ratio of 2.2-1, Tp .20ms and Td 60ms.

The apparent chargeability (M') in milliseconds, is calculated by T_p $(M1 + 2M_2 + 4M_3 + 8M_4) = M'$, where T_p is the basic integrating time in tenths of seconds. M_1, M_2, M_3 and M_4 are the chargeability effects at various times on the voltage decay curve following switch off of the transmitter, measured as a percentage of the primary voltage, V_p recorded during the "current on" time. By the use of these factors, one can gain an estimate of the decay curve in terms of chargeability for the given time T_p. This gives a quantitative value to the data measured.

The apparent resistivity, in ohm-meters is proportional to the ratio of the primary voltage to the measured current, the proportionality factor depending on the geometry of the electrode array used. The chargeability and resistivity obtained are called "apparent" as they are values which that portion of the earth sampled by the array would have if it were homogeneous. As the earth sample is usually inhomogeneous, the calculated apparent chargeability and apparent resistivity are functions of the actual chargeabilities and resistivities of the rocks sampled and of the geometry of the rocks.

DISCUSSION OF RESULTS

Seven lines were surveyed with the induced polarization method deployed in the pole-dipole electrode array. An "a" spacing of 100 meters and an n value of 1 was used across the entire grid and the chargeability and apparent resistivity data gathered is presented in contour form as Figures 2 and 3 respectively. Line 7+00W was vertically profiled by surveying with additional n values of 2 and 3. The resulting profile is presented as Figure 4.

A high chargeability trend defined by 15 ms and 20 ms contours over background values of 10 ms and less is observed to extend from the northwest corner of the grid in an east-southeasterly direction. A second strong anomaly appears to trend perpendicular to the main zone, extending northwest from line 8+00W near station 4+00N. The highest chargeability value recorded was 28.7 ms, which was observed on line 7+00W at station 7+75N. This position is very near the projected intersection of the two trends described above.

By expanding the electrode array both high chargeability trends observed on line 7+00W were vertically profiled as shown on Figure 4. The apparent dip in the plane of line 7+00W is approximately 70°S for the major trend and 55°S for the second, smaller trend. These dip estimates are calculated relative to the surface plane and both topographic and strike corrections will be necessary to calculate an actual dip.

A number of relatively weak chargeability highs are observed in the southeast corner of the survey grid. These values align to form a narrow trend presently considered open to the east and south.

Low resistivity trends defined by the 150 ohm-meter and 100 ohm-meter contours on Figure 3 delineate trends which correlate very closely with the high chargeability trends defined above. There is also an additional low resistivity trend noted in the southwest corner of the grid which extends northeast to line 5+00W station 4+00N.

SUMMARY & CONCLUSIONS

Three trends were delineated which exhibit coincident anomalous values of chargeability and apparent resistivity. The largest trend extends from the northwest corner of the grid to the easternmost lines and is considered open at both ends. It is likely this response reflects a chargeable and conductive lithologic unit which contains localized concentrations of polarizable materials. It is unlikely that a second unit, trending roughly perpendicular to the major zone reflects a lithological unit unless it and the above mentioned zone are separated by an unconformity. More likely this northwest trending feature reflects a cross

fault since the orientation of the major trend is altered slightly near the intersection of the two zones.

A low resistivity trend parallel to the interpretted fault does not exhibit any associated chargeability anomalies. The response may be reflecting a near surface conductive layer or possibly a second fault which has not intersected the main zone and henceforth not accumulated any polarizeable materials.

The third chargeability and low resistivity trend is weaker and smaller than the first two described above. It occurs in the southeast corner of the grid and appears to be parallel to the major trend. The anomaly is open to the south and east and could be reflecting a second lithological unit similar to the interpretted zone to the north.

The position, concentration and elemental distribution of the anomalous soil geochemistry is unknown to the author at this time. Subsequently it is beyond the scope of this report to recommend an exploratory drilling program. The data gathered during this survey should be correlated to known geology, geochemical and any other geophysical information available before finalizing any further exploration of this property.

Respectfully submitted,

E. Trent Pezzot, B.Sc.,
Geophysicist

STATEMENT OF QUALIFICATIONS

NAME: PEZZOT, E. Trent

PROFESSION: Geophysicist - Geologist

EDUCATION: University of British Columbia - B.Sc. - Honors Geophysics and Geology

PROFESSIONAL ASSOCIATIONS: Society of Exploration Geophysicists

EXPERIENCE: Three years undergraduate work in geology - Geological Survey of Canada, consultants.

Three years Petroleum Geophysicist, Senior Grade, Amoco Canada Petroleum Co. Ltd.

Two years consulting geophysicist, Consulting geologist - B.C., Alberta, Saskatchewan, N.W.T., Yukon, western U.S.A.

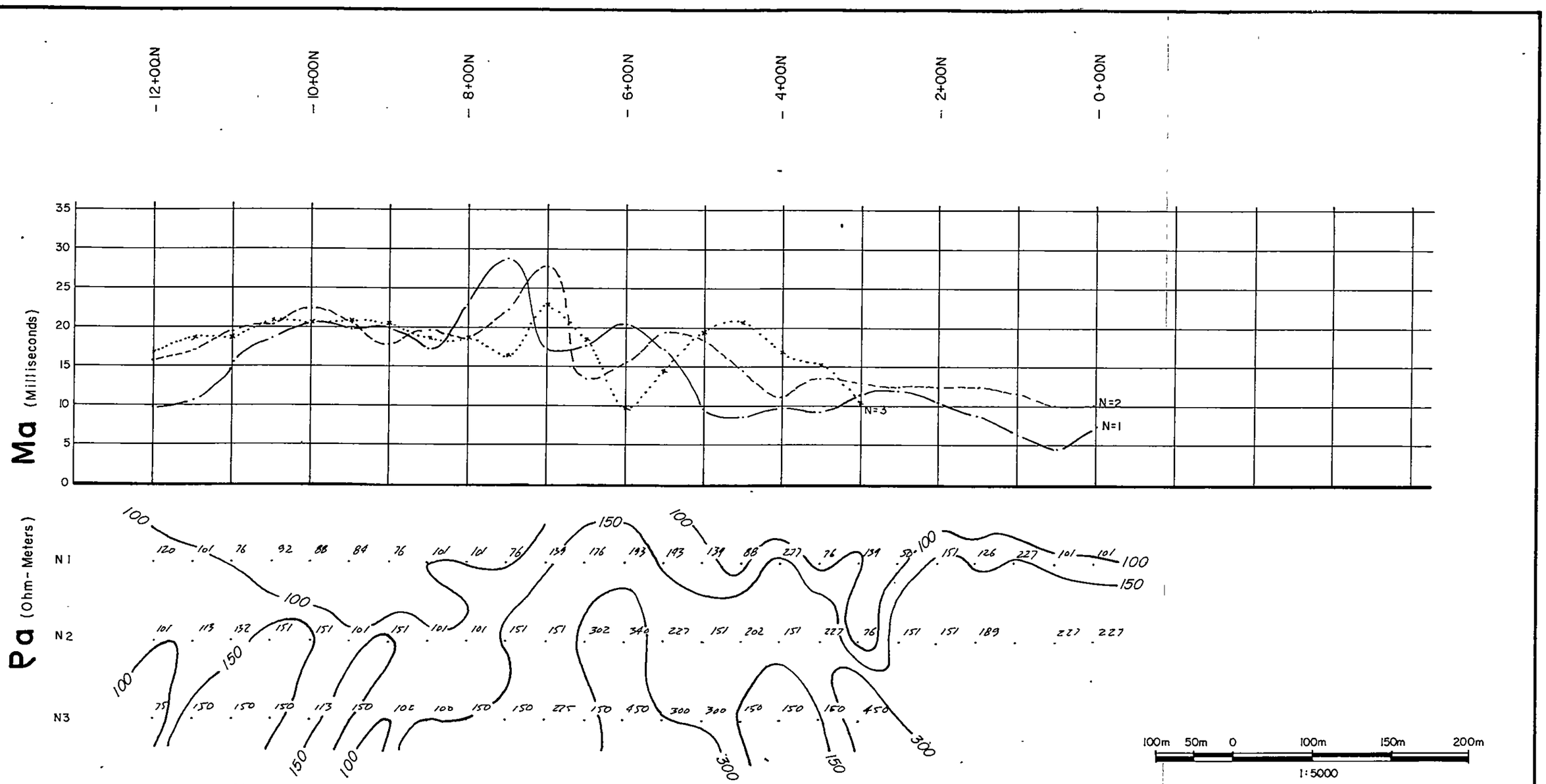
Two years geophysicist with Glen E. White Geophysical Consulting & Services Ltd.

COST BREAKDOWN

PERSONNEL	DATES	RATE/DAY	TOTAL
M. Gray	July 30 - Aug. 13/81	$170.00	$2,550.00
B. Evans	July 30 - Aug. 13/81	$130.00	$1,950.00

Equipment 15 days @ $210.00	$3,150.00
Airfares	$ 441.00
Shipping	$ 222.00
Meals and Accommodations	$ 152.00
Drafting and Materials	$ 150.00
Reproduction and Binding	$ 50.00
Interpretation and Report	$ 350.00
Total	$9,015.00

Note: Cost of camp expenses, helicopter charges and extra 2 men for crew was responsibility of Hinterland Resource Services Limited.



INSTRUMENT HUNTEC 2.5 KW TIME DOMAIN
(a=100m) N=1

C2 ← I — V
C1 Pole P2 Dipole P1

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 10,467

Glen E. White geophysical consulting & services ltd.

HINTERLAND RES. SERVICES LTD.

LUNAR CREEK PROJECT

LIARD MINING DIVISION — BRITISH COLUMBIA

INDUCED POLARIZATION PROFILE

— LINE 7+00W —

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY	E.T.P
DRAWN BY	N.L.P
CHECKED BY	E.T.P
DATE	AUG. '81
FIG. NO	4

BREAKDOWN OF EXPENSES ON THE EXPLORATION

of the

LUNAR MINERAL CLAIMS

1. LABOUR $23,436.00

   Line Cutting for I.P. Survey: 23,436 x 40% $9,374.40

2. Helicopter Support $20,509.78

   Charged to I.P. and Line Cutting: $20,509.78 x 40% ... 8,204.00

3. Camp Supplies $1,911.49

   Charged to I.P. Survey: $1.911.49 x 40% 765.00

4. Supervision $2,261.80

   Charged to I.P. Survey : 2,261.80 x 40% 904.72

5. Induced Polarization Survey 9,015.00
   (per invoice by Glen E. White Geophysical
   Consulting and Services Ltd.)

TOTAL COST OF PROGRAMME $28,263.12

Submitted by: E. D. Cruz, P.Eng.

INVOICE

№ 196

HINTERLAND RESOURCE SERVICES LTD.

11691 Trumpeter Drive
Richmond, B.C. V7E 3X4
Telephone (604) 271-5922

IN ACCOUNT WITH:
West Lake Resources Inc.,
790 - 885 Dunsmuir Street,
Vancouver, B. C.

LUNAR

FILE:
DATE: Aug. 26, 1981

Attention: Mr. E. Cruz

Re: Lunar Cfeek Project

Services of A. Bolton, J. Barker, D. Nelles, G. Siemens, J. Bolton, and L. Haney	
137 man/days @ $171	$23,436.00
Vehicle, 2 wheel drive, Mobilization and Demobilization 5 days @ $35.00/day	$ 175.00
Gas & Oil	$ 885.62
Airfares for J. Barker, D. Nelles, A. Bolton	$ 550.75
Room & Board when travelling	$ 931.53
Hardware for camp set-up	$ 342.57
Camp Set Up, Equipment, Supplies, Field Sheets, Sample Bags, Etc.	$ 1,911.49
Min-En Labs Inv. 8524, 8607, 8666	$ 3,805.75
Misc.:	
Mine Recorder, maps	$ 2.00
Taxi Fares	$ 44.00
Recording Lunar 9-10	$ 35.00
Recording Lunar 11-16	$ 40.00
Freight	$ 31.62

OUR FEE: $32,191.33

Less advances already invoices of $10,000.00
Balance due on this invoice is $22,191.33

NET: 15 DAYS

NOTE:
1-1/2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

E & O E

INVOICE

№ 195

HINTERLAND RESOURCE SERVICES LTD.

11691 Trumpeter Drive
Richmond, B.C. V7E 3X4
Telephone (604) 271-5922

IN ACCOUNT WITH: LUNAR CREEK

FILE:

DATE: Aug 26, 1981

West Lake Resources Inc,
790 - 885 Dunsmuir Street,
Vancouver, B. C.

Attention Mr. E. Cruz

Re. Lunar Creek Project, Supervision of Field Crews

July 15, July 16, July 30, Aug. 1,2,3.

V. Ryback-Hardy, 6 days @ $300.00/day	$1,800.00
Airfare	$220.30
Vehicle , 2 days @ $35.00/day	$ 70.00
Gas & Oil	$ 15.50
Room & Board	$ 90.00
Phone Calls	$ 66.00

OUR FEE: $2,261.80

NET: 15 DAYS

NOTE

1-1/2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

E&OE V. Ryback-Hardy

INVOICE

№ 200

HINTERLAND RESOURCE SERVICES LTD.

11691 Trumpeter Drive
Richmond, B.C. V7E 3X4
Telephone (604) 271-5922

IN ACCOUNT WITH:

FILE:

DATE: Aug. 26, 1981

West Lake Resources Inc.,
790 - 885 Dunsmuir Street,
Vancouver, B. C.

Attention: Mr. E. Cruz

Re: Lunar Creek Project

Invoice # H22098, Okanagan Helicopters Ltd. $5,277.35

OUR FEE: $5,277.35

NET: 15 DAYS

NOTE:
1-1/2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

E &O E

INVOICE

FS1

№ 179

HINTERLAND RESOURCE SERVICES LTD.

11691 Trumpeter Drive
Richmond, B.C. V7E 3X4
Telephone (604) 271-5922

IN ACCOUNT WITH:

FILE:

DATE: Aug. 17/81

West Lake Resources Inc.,
790 - 885 Dunsmuir Street,
Vancouver, B. C.

Attention: Mr. E. Cruz

For: Helicopter charges to Lunar Creek $3,624.03

OUR FEE: $3,624.03

NET: 30 DAYS

NOTE

1-1/2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

E&OE

INVOICE

№ 173

HINTERLAND RESOURCE SERVICES LTD.

11691 Trumpeter Drive
Richmond, B.C. V7E 3X4
Telephone (604) 271-5922

IN ACCOUNT WITH:

FILE:

DATE: Aug. 10/81

West Lake Resources Inc.,
790 - 885 Dunsmuir Street,
Vancouver, B. C.

Attention: Mr. E. Cruz

Re: Lunar Creek Claims

Paid on your behalf

Smithers Air Services Ltd. $1,958.20

Okanagan Helicopters Ltd. $9,650.20

Pd. Aug 14/81
CK #30

OUR FEE: $11,608.40

NET: 15 DAYS

NOTE:
1-1/2% PER MONTH CHARGED ON OVERDUE ACCOUNTS

E & O E

HINTERLAND RESOURCE SERVICES LTD.

SUPERVISOR'S PROJECT TIME SHEET

****

SUPERVISOR: GEORGE SIEMENS

FOR PERIOD COVERING: JULY 2 TO JULY 15

CLIENT: JOB NO. Lunar Creek 36

PERSONNEL	2	3	4	5	6	7	8	9	10	11	12	13	14	15			TO
G. SIEMENS	T	T	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
A. BOLTON	T	T	T		✓	✓	✓	✓	✓								
L. BOLTON	T	T	T		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
J. BARKER					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
TOTALS																	

VEHICLES																	
FORD P/U	✓	✓	✓	✓	✓	✓											
TOTALS																	

EQUIPMENT																	
2 CHAINSAWS						✓	✓	✓	✓	✓	✓	✓	✓				
TOTALS																	

ACCOMMOD.																	
TOTALS																	

HINTERLAND RESOURCE SERVICES LTD.

SUPERVISOR'S PROJECT TIME SHEET

****

SUPERVISOR: GEORGE SIEMENS

FOR PERIOD COVERING: July 16 TO July 31

CLIENT: JOB NO. Lunar Creek

PERSONNEL	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		TOT
G. SIEMENS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		15
J. BOLTON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		15
J. BARKER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			14
D. NELLES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		15
L. HANEY												☐	✓	✓	✓		5
TOTALS																	75

VEHICLES																	
																	36
																	29
																	14
TOTALS																	

EQUIPMENT																	
CHAIN SAW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
TOTALS																	

ACCOMMOD.																	
TOTALS																	

HINTERLAND RESOURCE SERVICES LTD.

SUPERVISOR'S PROJECT TIME SHEET

****

SUPERVISOR: GEORGE SIEMENS

FOR PERIOD COVERING: AUG 1 TO AUG 15

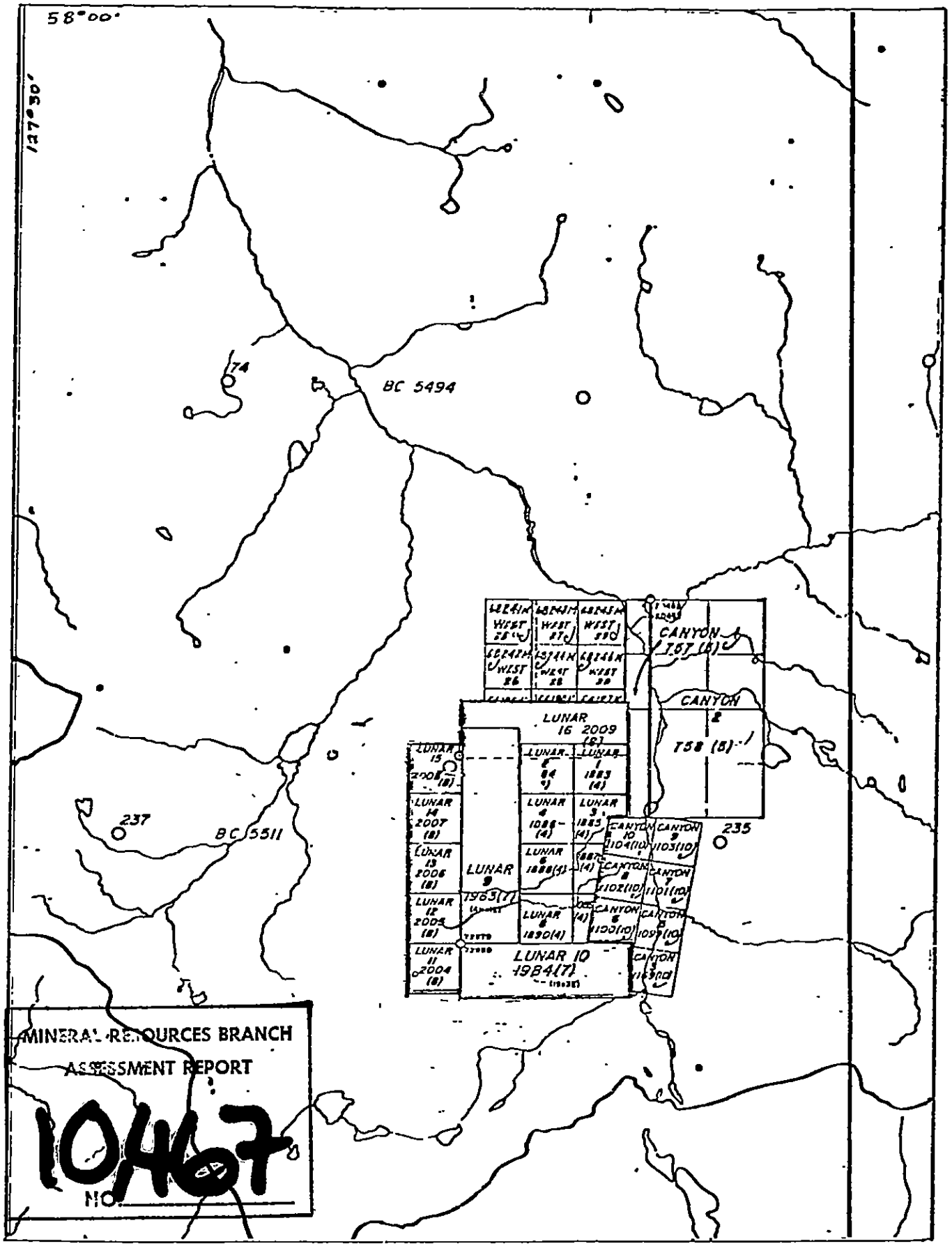
CLIENT: JOB NO. Lunar Creek

PERSONNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		TOT
G. SIEMENS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		13
J. BOLTON	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		13
D. NELLES	✓	✓	✓	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~								7
V. HARDY	✓	✓	✓	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~									
B. EVANS (I.P.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					24
M. GRAY (I.P.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
L. HANEY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TOTALS																	

VEHICLES																	
TOTALS																	

EQUIPMENT																	
TOTALS																	

ACCOMMOD.																	
TOTALS																	



CLAIM MAP
LUNAR CLAIMS
Pitman River Area
Liard M.D.
Scale: 1:50,000

9+00W — 7+00W — 5+00W — 3+00W — 1+00W — 1+00E — 3+00E

12+00N —
10+00N —
8+00N —
6+00N —
4+00N —
2+00N —
0+00N —

LUNAR 15
LUNAR 14
LUNAR 13
LUNAR 9
LUNAR 16
LUNAR 2
LUNAR 4
LUNAR 6
LUNAR 1
LUNAR 3
LUNAR 5

LEGEND:

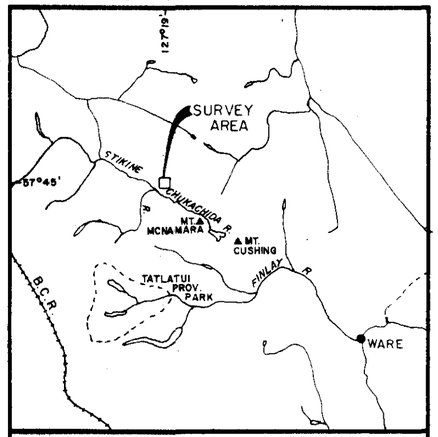
GULLEY
STREAM

CHARGE ABILITY KEY
25
20
15
10
5
(MILLISECONDS)

INSTRUMENT . HUNTEC 2.5 KW TIME DOMAIN
(a=100m) N=1

C2 ← I — V
C1 Pole
P2 Dipole
P1

N.T.S. 94 E/14



LOCATION MAP
1" = 32 mi.

100m 50m 0 100m 200m 300m
1 : 5000

HINTERLAND RES. SERVICES LTD.

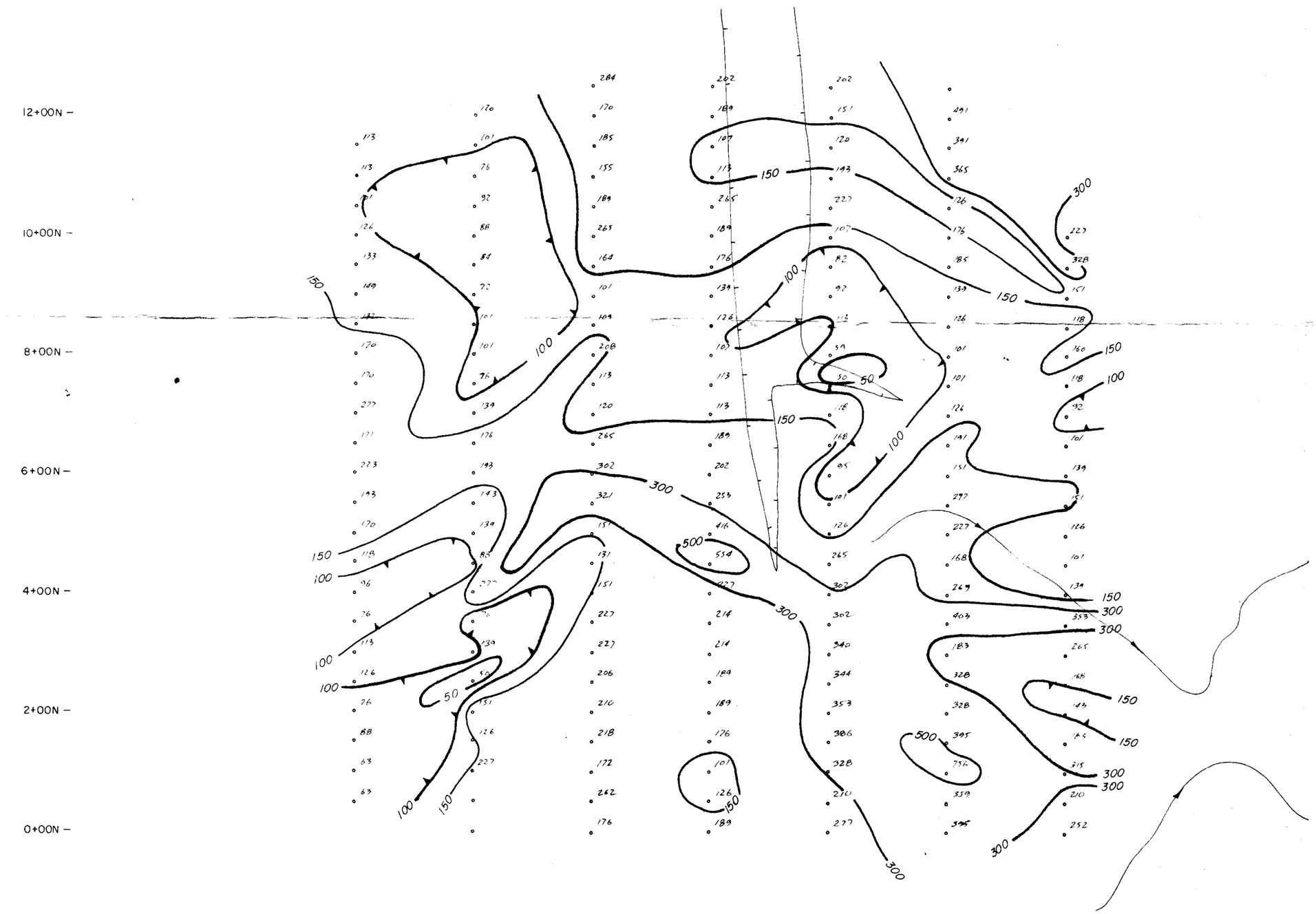
LUNAR CREEK PROJECT
LIARD MINING DIVISION – BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY
CHARGEABILITY
(MILLISECONDS)

Glen E. White
geophysical consulting
&
services ltd.

Interpreted By	E.T.P.
Drawn By	N.L.P.
Checked By	E.T.P.
Date	AUG./81
Fig. No.	2

VANCAL 7134



LEGEND:

GULLEY

STREAM

RESISTIVITY KEY

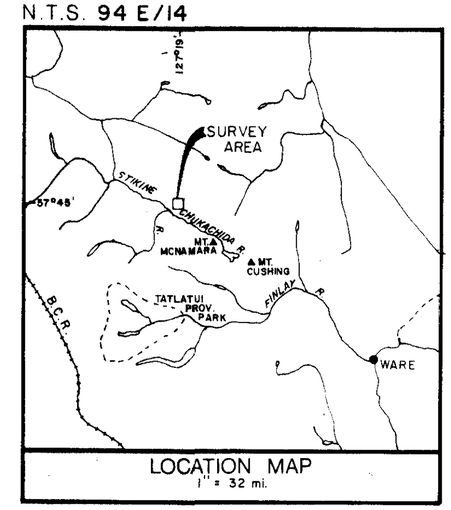
500
300
150
100
50

(OHM-METERS)

INSTRUMENT HUNTEC 2.5 KW TIME DOMAIN
(a=100m) N=1

C2 ← I → V
C1 Pole P2 Dipole P1

N.T.S. 94 E/14



LOCATION MAP
1" = 32 mi.

100m 50m 0 100m 200m 300m
1 : 5000

HINTERLAND RES. SERVICES LTD.

LUNAR CREEK PROJECT

LIARD MINING DIVISION – BRITISH COLUMBIA

INDUCED POLARIZATION SURVEY
APPARENT RESISTIVITY
(OHM METERS)

Glen E. White
geophysical consulting
services ltd.

Interpreted By	E.T.P.
Drawn By	N.L.P.
Checked By	E.T.P.
Date	AUG./81
Fig No	3

VANCAL 7134