5299

93A/6W

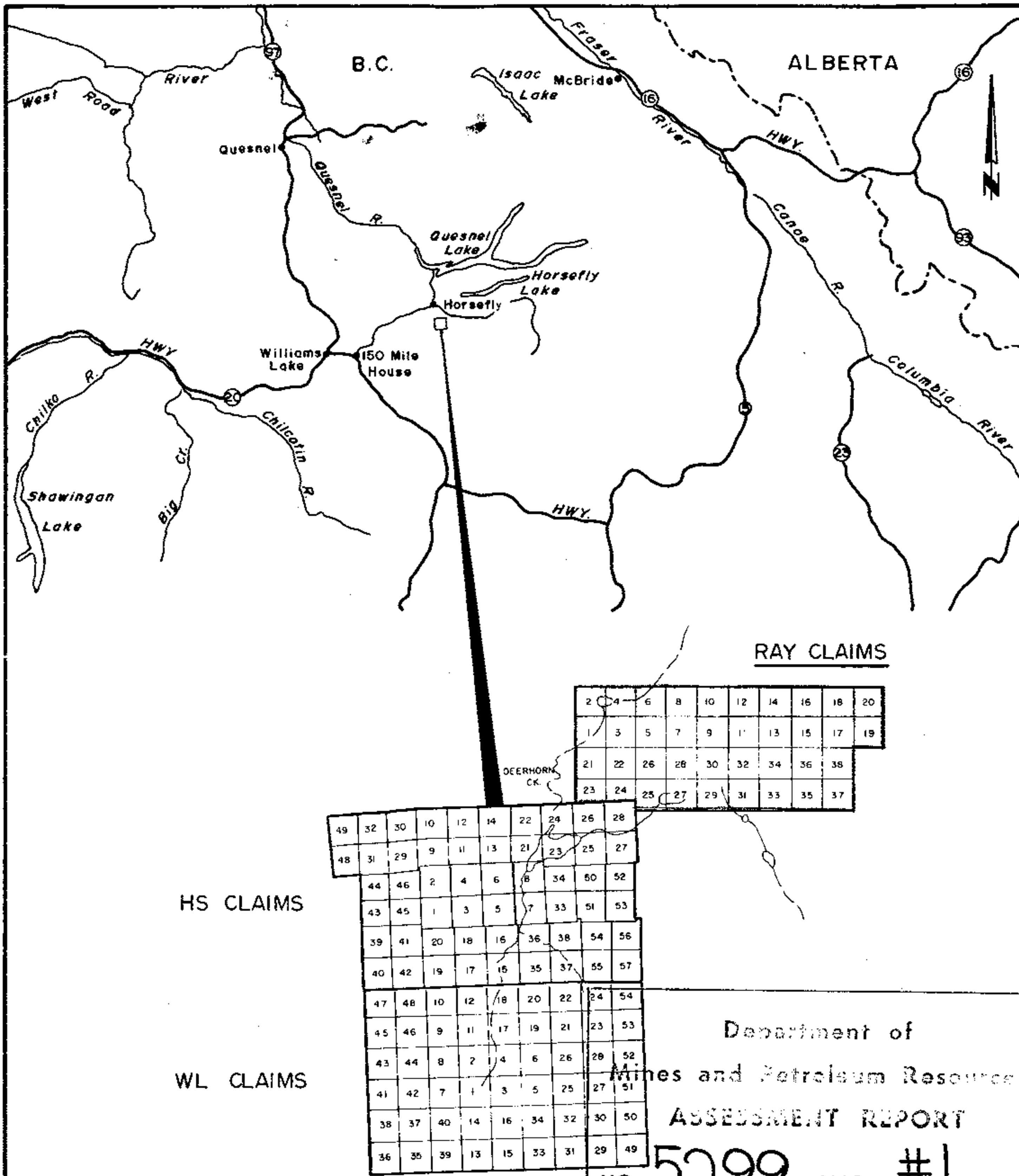
GEOPHYSICAL REPORT
EXPLORAM MINERALS LTD.
on
MAGNETOMETER AND INDUCED POLARIZATION SURVEYS

Ray Mineral Claims, some 7 miles SE of Horsefly, B.C. Cariboo Mining Division.
Lat. 52°16'30"N Long. 121°20'W N.T.S. 93 A/6

AUTHOR: Glen E. White, B.Sc., Geophysicist
P. ENG: E. D. Cruz
DATE OF WORK: August 8 - 28, 1974
DATE OF REPORT: November 20, 1974

5299

93A/6W



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #1

EXPLORAM MINERALS LTD.
RAY CLAIMS
LOCATION AND CLAIMS MAP

SCALE - LOCATION MAP 1" = 40 MILES APPROX. CLAIMS MAP : 1/4" = 1500 APPROX.

Glen E White
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NOV 20, 1974
FIG. 1

CONTENTS

INTRODUCTION

During the month of August 1974, from the 8th to the 28th, a program of ground magnetometer surveying and induced polarization surveying was conducted over two areas within the Ray claim group on behalf of Exploram Minerals Ltd. The two survey areas have been designated the Deerhorn Anomaly and the Woodjam anomaly and are discussed separately within the report.

PROPERTY

The Ray claim group consists of 38 contiguous full-sized mineral claims numbered Ray 1-38. The Deerhorn survey area covers mineral claims Ray 3-8, 22 and 26, and the Woodjam survey area claims Ray 13-16 and 31-34. The relationship of the various claims is illustrated in Figure 1.

LOCATION AND ACCESS

The Ray mineral claims are situated some 7 miles south-east of Horsefly, B.C., between Starlike Lake and Woodjam Creek, Cariboo Mining Division, N.T.S. 93 A/6. The Deerhorn anomaly is centered at Lat. 52°16'30"N, Long. 121°20'W and the Woodjam anomaly at Lat. 52°16'30"N, Long. 121°19'W.

Access to the survey area is by 4x4 road from the Starlike Lake road and through the Woodjam Creek Ranch on Woodjam Creek.

GENERAL GEOLOGY

The general geology of the survey area, as shown on Geological Map 3-1961, Quesnel Lake, consists of volcanics and sediments of Upper Triassic or Jurassic age which have been intruded by various compositions of granodiorite, monzonite and syenite intrusives of Jurassic and/or Cretaceous age. The area is largely covered by glacial deposits and recent alluvium.

SURVEY SPECIFICATIONS

Survey Grid

On both the Deerhorn and Woodjam anomalies, the traverse lines were established in an E-W direction from a N-S baseline. The lines were spaced 400 feet apart and numbered at 100 foot intervals.

Some 4 line miles of induced polarization surveying and 3 line miles of magnetometer surveying were conducted on the Deerhorn and Woodjam anomalies respectively.

Electrode Array

The data was obtained using the "three electrode" array. This array consists of one current (C_1) and two potential electrodes (P_1 and P_2) which are moved together along the survey line at a fixed distance apart which is known as the "a" spacing. The second current electrode (C_2) is placed at "infinity". In the Deerhorn area, "a" spacing of 400 feet $n = 1$ and "a" = 200 feet, $n = 2$ were used. In the Woodjam survey, "a" spacings of 400 feet and 200 feet were used with $n = 1$.

Induced Polarization System

The equipment used on this survey was the Huntec pulse-type unit. Power was obtained from a JLO 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 pulses reversing continuously in polarity. Power was transmitted to the ground through two current electrodes C_1 and C_2, and measurements taken across two potential electrodes, P_1 and P_2.

The data recorded in the field consist 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.

The apparent chargeability (M_a), in milliseconds, is calculated by dividing the secondary voltage by the primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity, in ohm-feet, 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 sampled is usually inhomogeneous, the calculated apparent chargeabiliity and apparent resistivity are functions of the actual chargeabilities and resistivities of the rocks sampled and of the geometry of these rocks.

Magnetometer Survey

The magnetometer survey was conducted using a Scintrex MF-1 Fluxgate magnetometer. This instrument measures the vertical component of the earth's magnetic field to an accuracy of 10 gammas. Corrections for diurnal variation were made by tying into previously established base stations at intervals not exceeding one and one half hours. Readings were taken at 100 foot intervals along the traverse lines.

DISCUSSION OF RESULTS

The geophysical data for the Deerhorn area is listed as follows: Induced Polarization - Chargeability, Figure 2; Induced Polarization - Apparent Resistivity, Figure 3; and Magnetometer Survey, Figure 4. For the Woodjam area, these Figures are 2A, 3A, and 4A respectively.

Deerhorn Survey

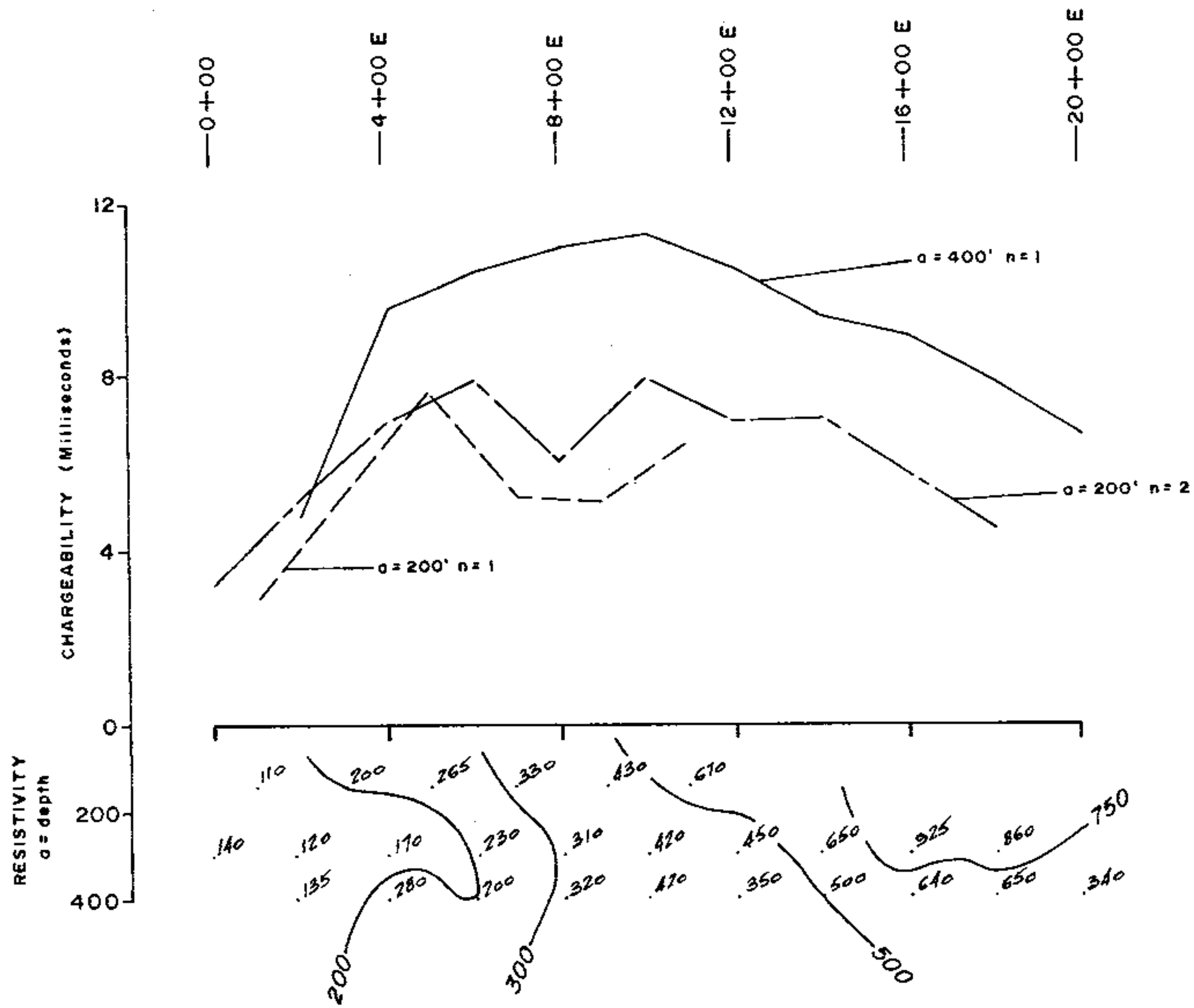
The chargeability information, Figure 2 was obtained first with a = 200 feet, n = 2 and then partially by a = 400' n = 1. The former, which is sensitive to lens or dike-like sources, depicts a chargeability source in the form of an arc. The latter "a" spacing, which looks slightly deeper and is better suited to broader sources, forms much the same pattern but with an increase in chargeability.

EXPLORAM MINERALS LTD.

— DEERHORN ANOMALY —

DETAILED INDUCED POLARIZATION PROFILES

LINE 0+00



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&
services ltd.

Scale : 1" = 400'

AUG. 14, 1974

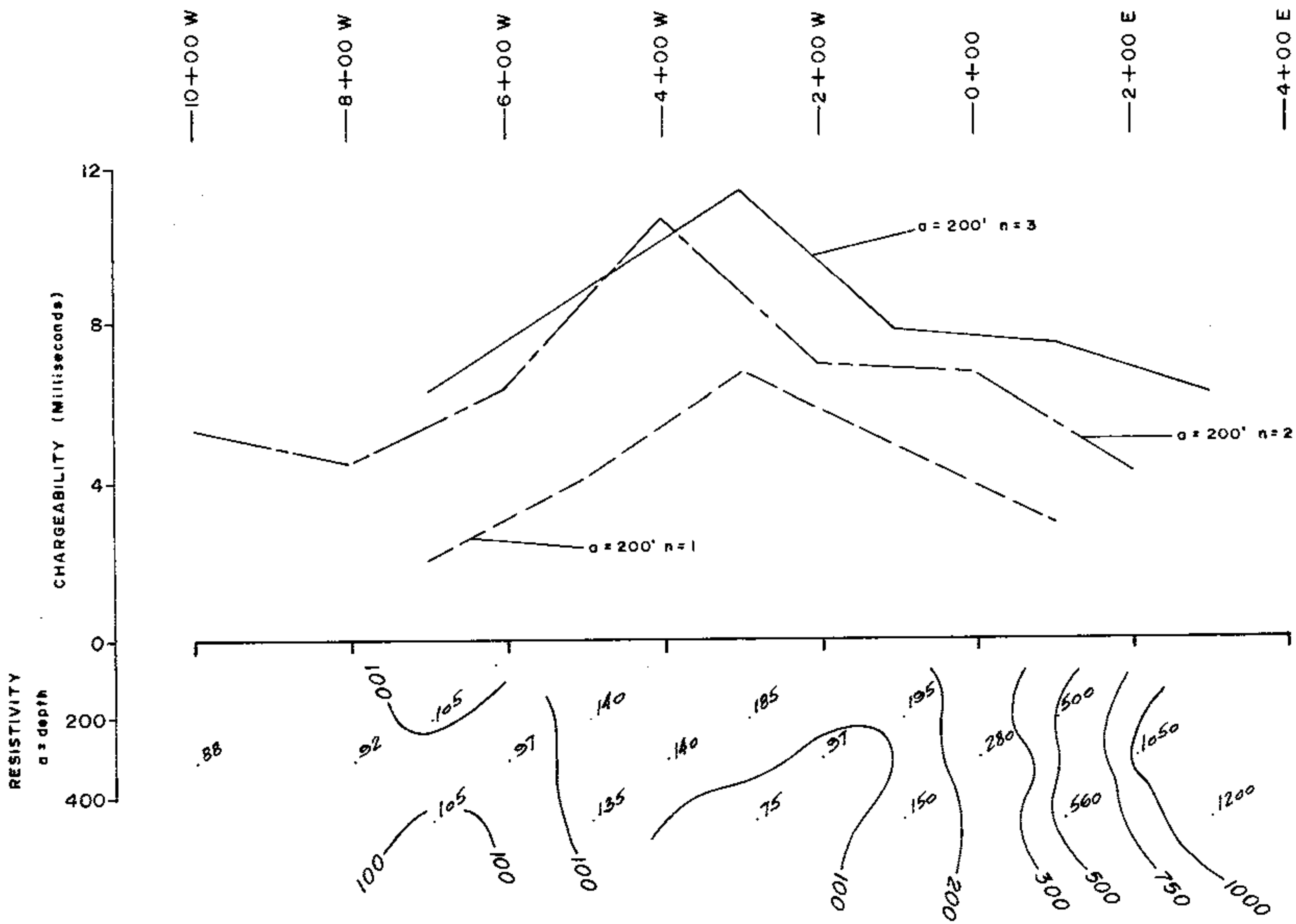
PLATE I

EXPLORAM MINERALS LTD.

— DEERHORN ANOMALLY —

DETAILED INDUCED POLARIZATION PROFILES

LINE 12+00 S



Glen E. White geophysical consulting & services ltd

Scale : 1" = 200'

AUG. 14, 1974

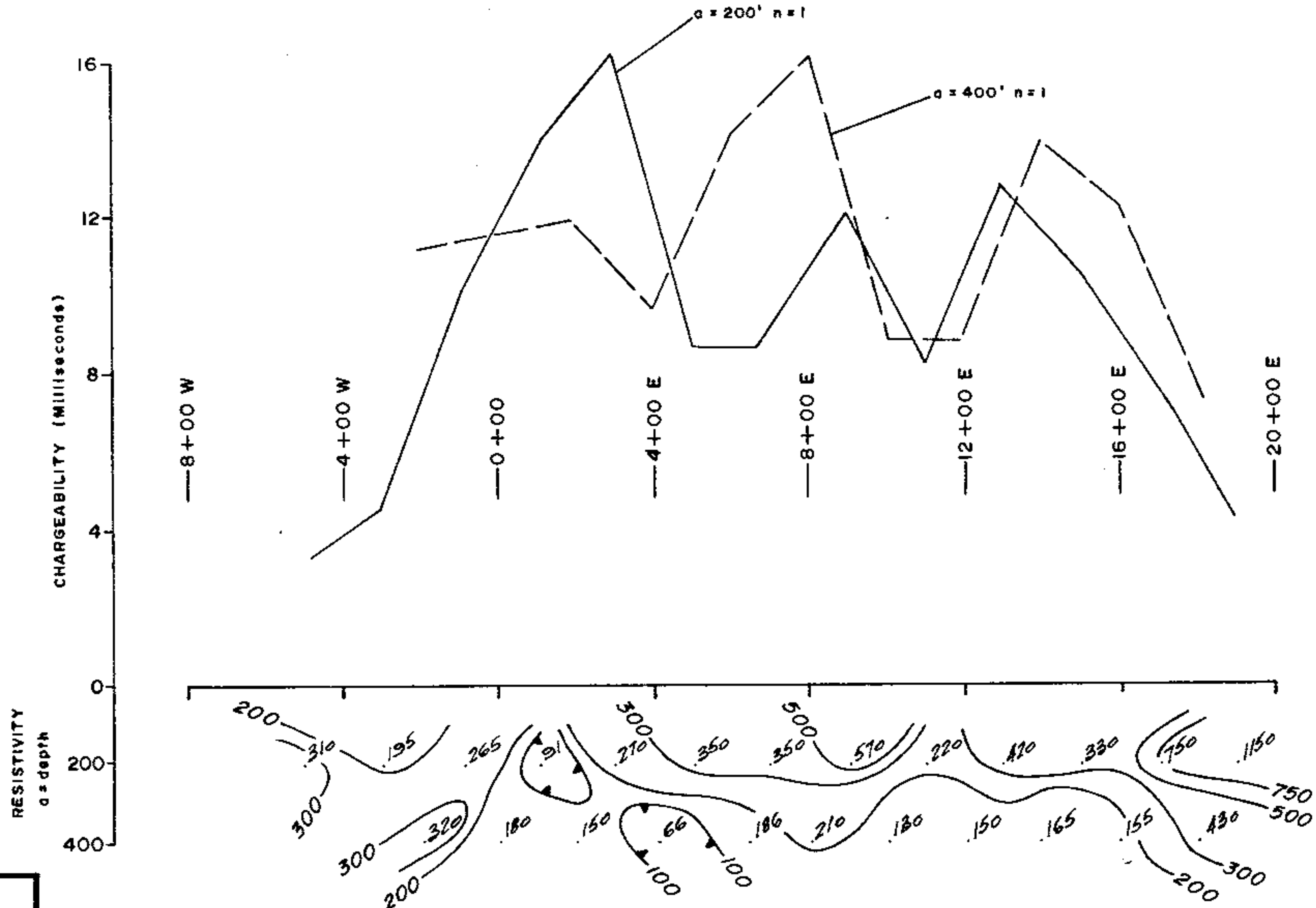
PLATE 2

EXPLORAM MINERALS LTD.

— WOODJAM ANOMALLY —

DETAILED INDUCED POLARIZATION PROFILES

LINE 4+00 N



Glen E. White geophysical consulting & services ltd.

Scale : 1" = 400'

AUG. 14, 1974

PLATE IA

The apparent resistivity data on both "a" spacings shows a well defined NE-SW trending gradient which may possibly reflect a change in rock type and/or a change in the type of alluvial overburden.

Figure 3, the magnetic intensity data, also shows a general NE-SW trend which likely represents the local trend of the lithology. The magnetic intensity varied moderately from a low of 825 gammas to a high of 2500 gammas. The sharpness of the magnetic gradients would suggest a fault controlled rock unit which has been offset by NE-SW and NW-SE faults.

Correlation of the magnetic and chargeability data suggests that the arc formed by the chargeability data may possibly be formed by a NW-SE faulted segment of a chargeable zone which lies along the northwestern flank of the magnetic high. Plate 1 shows the chargeability responses across line 0. Here the much stronger response of the 400 foot, n = 1 "a" spacing is readily apparent. Plate 2 illustrates data over line 12S which was obtained with a = 200', n = 1 to 3. Here, the chargeability response increases with increased separation which likely reflects a constant volume response with increasing separation rather than an increase in percent chargeable material with depth.

Woodjam Survey

The chargeability data, Figure 2A, depicts a strong anomaly which reached a high of 19.1 milliseconds above a background of some 2.5 milliseconds. The apparent resistivity information, Figure 3A, indicates that the above anomaly is situated in an embayment of low resistivity, and because of the coincidence, may possibly be reflecting the underlying lithology. Plate 1A shows the induced polarization data in profile form along line 4N and would suggest a relatively near surface chargeable source at 11E.

The ground magnetometer data results, Figure 4A, outline pronounced NE-SW trends which likely indicate the trend of the country rock. The data varied from a low of 1050 gammas to a high of 2700 gammas.

Correlation of the geophysical data reveals that the chargeability anomaly is located in an area of low resistivity and magnetic intensity but does not appear to be following the magnetic patterns.

CONCLUSION AND RECOMMENDATIONS

During the month of August 1974, induced polarization and ground magnetometer surveys were conducted over two portions of the Ray claim group known as the Deerhorn and Woodjam areas.

The Deerhorn induced polarization anomaly is relatively restricted in size but may possibly be covered by some 50 - 100 feet of overburden. It occurs along the north-western flank of a northeasterly directed magnetic high linear. Its arc-like appearance may possibly be a result of northwest-southeast faulting.

The Woodjam chargeability anomaly is coincident with a magnetic low and an area of low resistivity. It reached a high of 19.1 milliseconds, some 7 times background.

Due to the geophysical response patterns, both anomalies are thought to be possibly associated with volcanic and/or sedimentary rocks of the area. Thus, though they likely reflect sulphide mineralization, they should not be tested from a porphyry copper viewpoint due to their localized response patterns.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.

Glen E. White B.Sc.
Geophysicist

STATEMENT OF QUALIFICATIONS

Name:	WHITE, Glen E.
Profession:	Geophysicist
Education:	B.Sc. Geophysics - Geology University of British Columbia
Professional Associations:	Associate member of Society of Exploration Geophysicists. Active member B.C. Society of Mining Geophysicists.
Experience:	Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass. Two years Mining Geophysicist with Sulmac Explorations Ltd. and Airborne Geophysics with Spartan Air Services Ltd. One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates. Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions, with Geo-X Surveys Ltd. Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd. Three years Consulting Geophysicist. Active experience in all Geologic provinces of Canada.

A P P E N D I X

Instrument Specifications

INDUCED POLARIZATION SYSTEM

A. Instruments

(a) Type - Pulse

(b) Make - Huntec

(c) Serial No. - transmitter #107 - receiver #207

B. Specifications

(a) Size and Power - 2.5 KW

(b) Sensitivity - 300 x 10.5 volts

(c) Power Sources - 2.5 KW 400 cycle - three-phase generator.

(d) Power by JLO motor, 5.2 H.P. @ 3,600 R.P.M.

(e) Timing - electronic, remote and direct.

(f) Readings - (i) amps (ii) volts primary and secondary

(g) Calculate (i) Resistivity - ohm-feet
(ii) Chargeability - milliseconds

C. Survey Procedures

(a) Method - power supplied to mobile probe along TW 18 stranded wire from stationary set-up.

(b) Configuration - Pole-dipole (three electrode array)
Plot point midway between C_1 and P_1.

D. Presentation

Contour Maps (i) Chargeability - milliseconds

(ii) Resistivity - ohm-feet

APPENDIX

Instrument Specifications

MAGNETOMETER

A. Instrument

(a) Type - Fluxgate

(b) Make - Sharpe MF-1

B. Specifications

(a) Measurement - Vertical Magnetic Field

(b) Range - ±100 K gammas in 5 ranges

(c) Sensitivity - Maximum 20 gammas per scale division

(d) Accuracy - ±10 gammas

C. Survey Procedures

(a) Method - One and one half hour loops

(b) Corrections - (i) Base

(ii) Diurnal

(c) Station relationship - each station read for intensity of vertical magnetic field.

CERTIFICATE

I, Ernesto D. Cruz, DO HEREBY CERTIFY AS FOLLOWS:

(1) That I am a Consulting Mining Engineer and reside at 8596 Terrace Dr., Delta, B.C.

(2) That I am a registered P. ENG in the association of Professional Engineers in the province of British Columbia.

(3) That I am a Graduate of Mapua Institute of Technology Phillipines (B.A.Sc.) and University of Washington (M.A.Sc.) in the Faculty of Mining Engineering.

(4) That I have practised geological engineering for eleven (11) years.

(5) That I have reviewed a report dated November 20, 1974 based on work conducted by Glen E. White Geophysical Consulting & Services Ltd. under the supervision of Glen E. White, B.Sc., Geophysicist, and concur with the findings therein.

(6) That this report consists of 9 typewritten pages and six maps.

(7) That I have no interest directly or indirectly in the Ray mineral claims or the securities of Exploram Minerals Ltd. nor do I expect to acquire or receive any.

DATED at Vancouver, British Columbia, this 20th day of November, 1974.

ERNESTO D. CRUZ, P. ENG

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
ERNESTO D. CRUZ

Ernesto D. Crua, P. ENG

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
TO WIT:

In the Matter of Induced Polarization and Magnetometer Surveys - Ray Mineral Claims

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP

I, Glen E. White

of Glen E. White Geophysical Consulting & Services Ltd.

in the Province of British Columbia, do solemnly declare that the costs for the above surveys were as follows:

PERSONNEL	PERIOD	WAGES	TOTAL
T. Ashworth	August 8-28/74	$75/day	$1500.00
J. Behenna	"	60/day	1200.00
B. Morrison	"	55/day	1100.00
G. Bernel	"	55/day	1100.00

Meals and Accomodations - $20x4x20................1600.00
Vehicle Lease - 4x4 - $30/day including gas........600.00
Instrument Lease - I.P..........................1350.00
- Magnetometer....................300.00
Materials...50.00
Interpretation Maps, Drafting and Report...........650.00

$9450.00

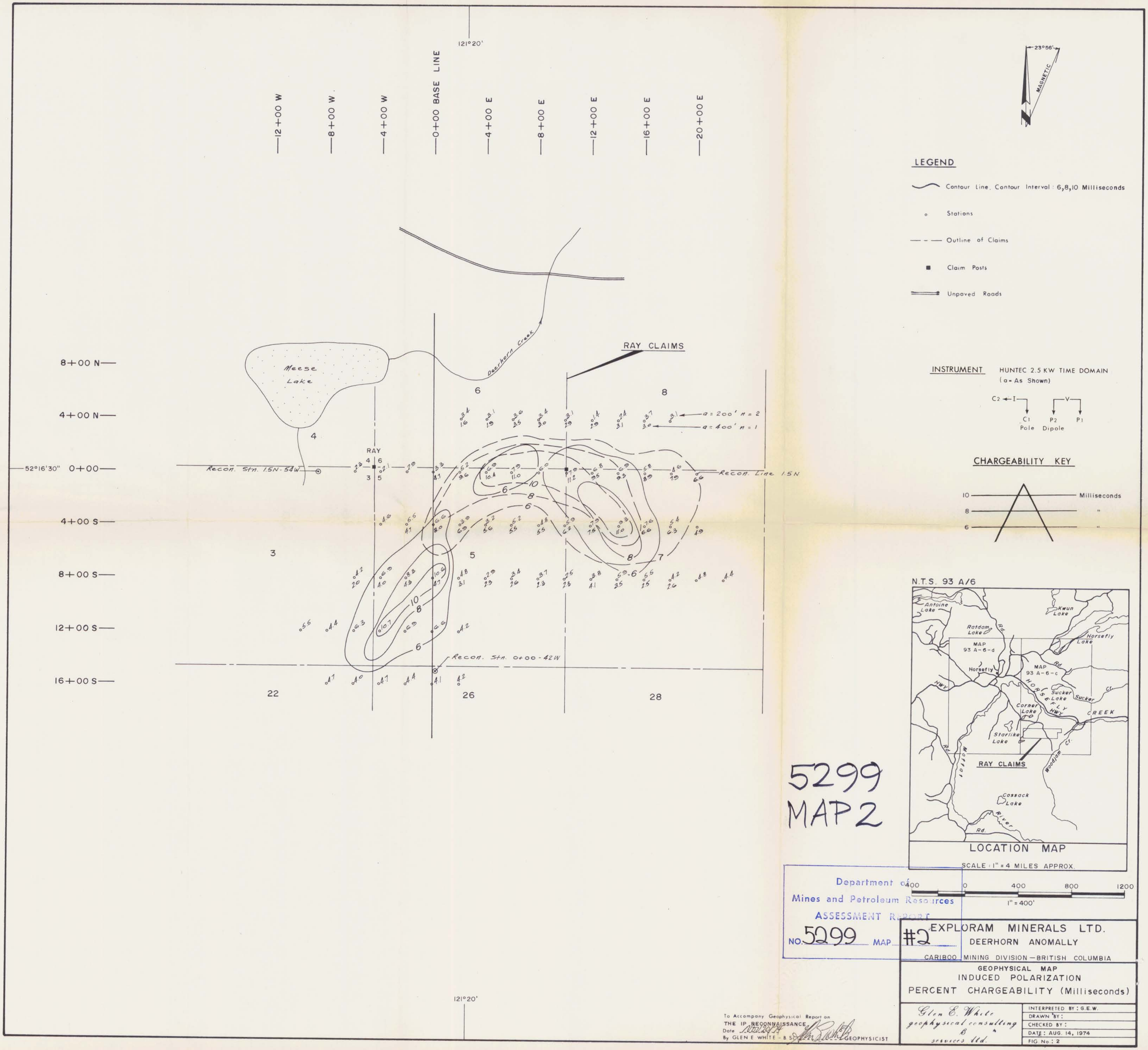
And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Vancouver, in the Province of British Columbia, this 5th day of December 1974, A.D.

[signature]

[signature]

A Commissioner for taking Affidavits for British Columbia or A Notary Public in and for the Province of British Columbia.


121°20'
12+00 W
8+00 W.
4+00 W
0+00 BASE LINE
4+00 E
8+00 E
12+00 E
16+00 E
20+00 E
23°56'
MAGNETIC
LEGEND
Contour Line, Contour Interval : 6,8,10 Milliseconds
Stations
Outline of Claims
Claim Posts
Unpaved Roads
Deerhorn Creek
Meese Lake
RAY CLAIMS
8+00 N
4+00 N
52°16'30" 0+00
4+00 S
8+00 S
12+00 S
16+00 S
Recon. Stn. 1.5N-54W
Recon. Line 1.5N
Recon. Stn. 0+00-42W
a = 200' n = 2
a = 400' n = 1
RAY
INSTRUMENT HUNTEC 2.5 KW TIME DOMAIN (a = As Shown)
C2 I V
C1 P2 P1
Pole Dipole
CHARGEABILITY KEY
10 Milliseconds
8
6
N.T.S. 93 A/6
Antoine Lake
Kwun Lake
Horsefly Lake
Ratdam Lake
MAP 93 A-6-d
MAP 93 A-6-c
Horsefly
HORSEFLY CREEK
Sucker Lake
Sucker Cr.
Corner Lake
Starlike Lake
RAY CLAIMS
Woodjam Cr.
Cossack Lake
River
LOCATION MAP
SCALE : 1" = 4 MILES APPROX.
5299
MAP 2
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #2
400 0 400 800 1200
1" = 400'
EXPLORAM MINERALS LTD.
DEERHORN ANOMALLY
CARIBOO MINING DIVISION — BRITISH COLUMBIA
GEOPHYSICAL MAP
INDUCED POLARIZATION
PERCENT CHARGEABILITY (Milliseconds)
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY : G.E.W.
DRAWN BY :
CHECKED BY :
DATE : AUG. 14, 1974
FIG. No. : 2
To Accompany Geophysical Report on
THE IP RECONNAISSANCE
By GLEN E. WHITE - B.Sc. GEOPHYSICIST
121°20'

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #4A

EXPLORAM MINERALS LTD.

WOODJAM ANOMALY

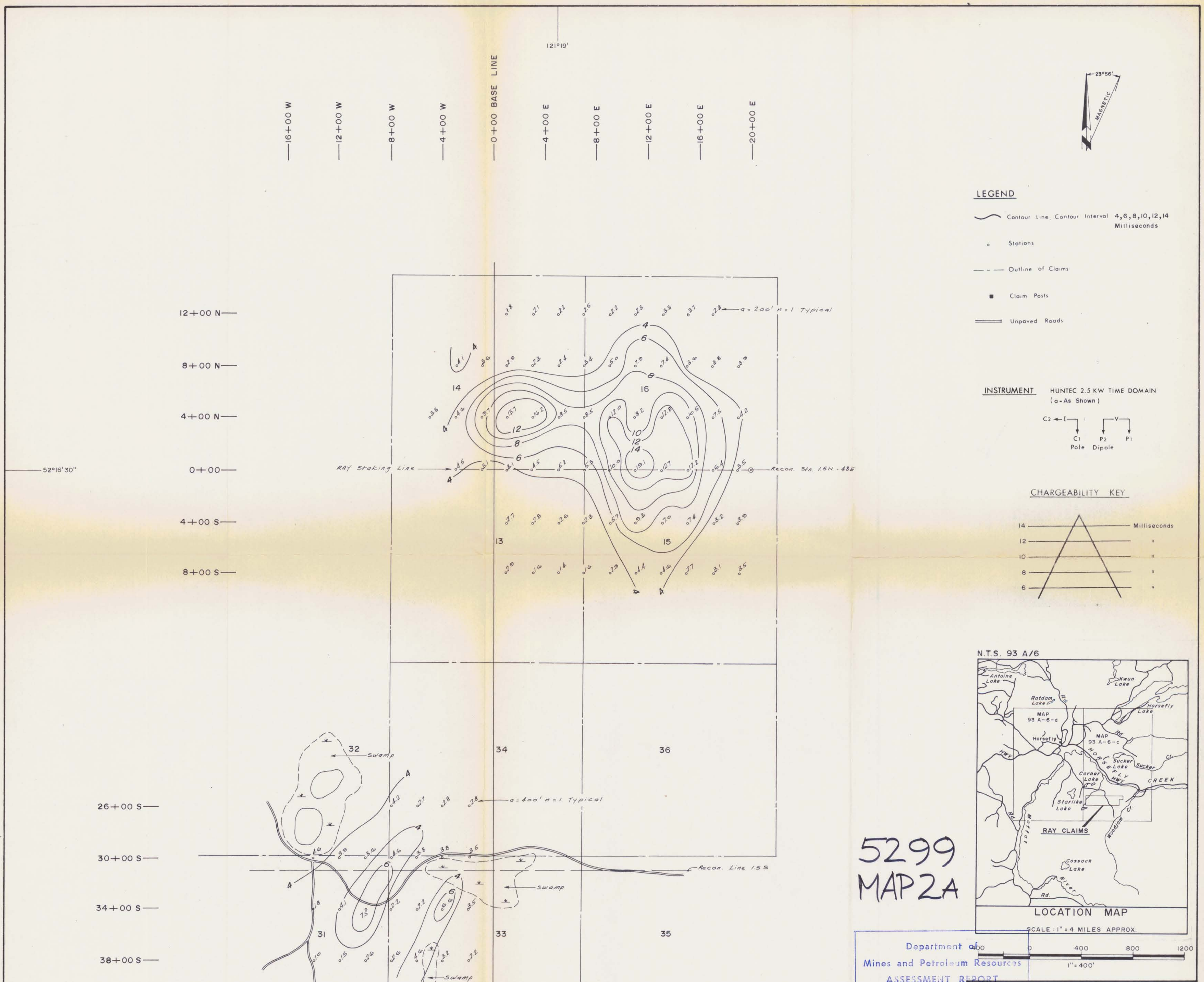
CARIBOO MINING DIVISION — BRITISH COLUMBIA

GEOPHYSICAL MAP
VERTICAL MAGNETIC INTENSITY
(Gammas)

Glen E. White geophysical consulting & services ltd.

INTERPRETED BY :	G.E.W.
DRAWN BY :	
CHECKED BY :	
DATE :	Nov. 14, 1974
FIG. No :	4 A

To Accompany Geophysical Report on THE IP RECONNAISSANCE
Date Nov 29/74
By GLEN E. WHITE B.Sc. GEOPHYSICIST



5299
MAP 2A

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #2A

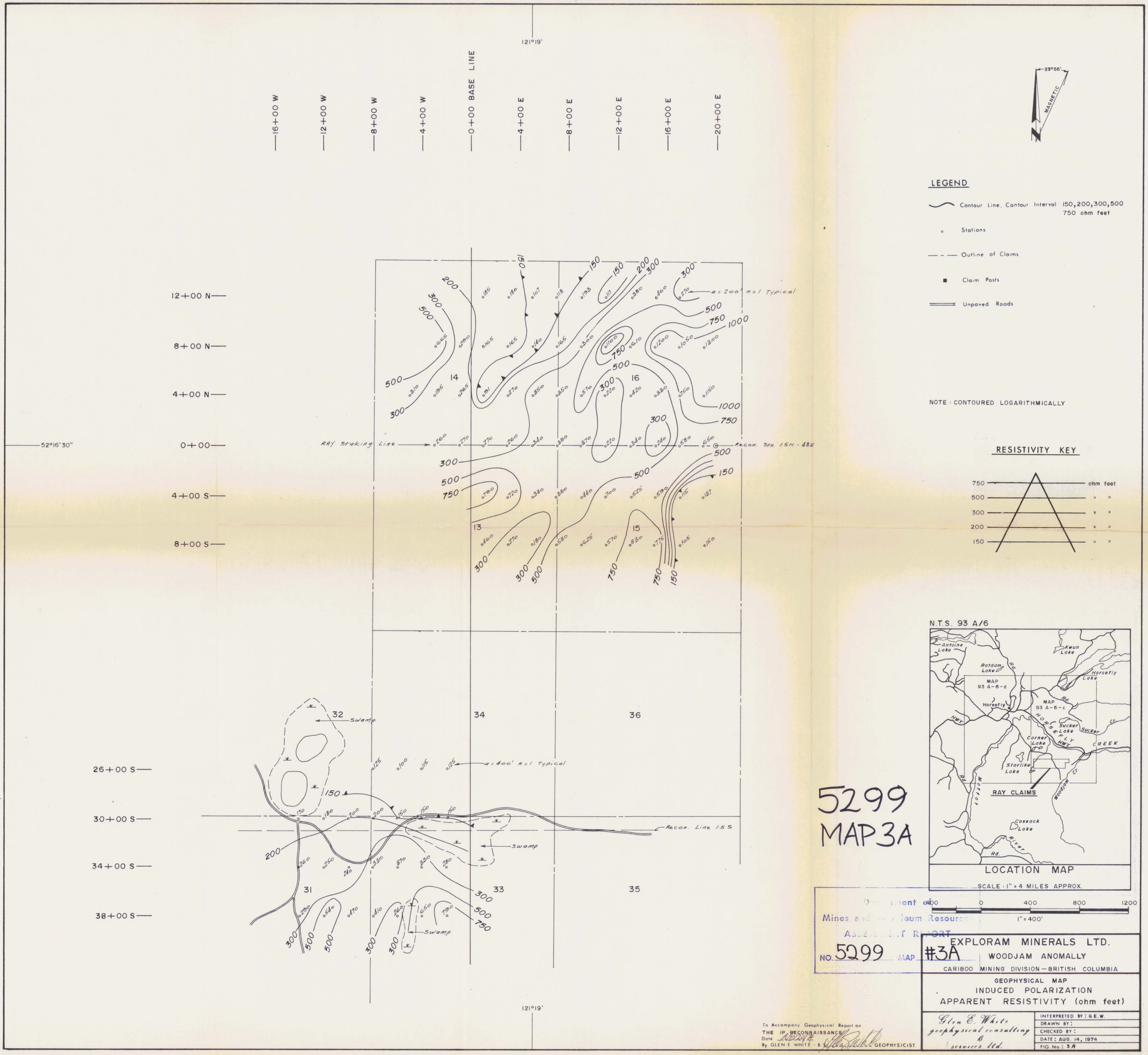
EXPLORAM MINERALS LTD.
WOODJAM ANOMALLY
CARIBOO MINING DIVISION — BRITISH COLUMBIA

GEOPHYSICAL MAP
INDUCED POLARIZATION
PERCENT CHARGEABILITY (Milliseconds)

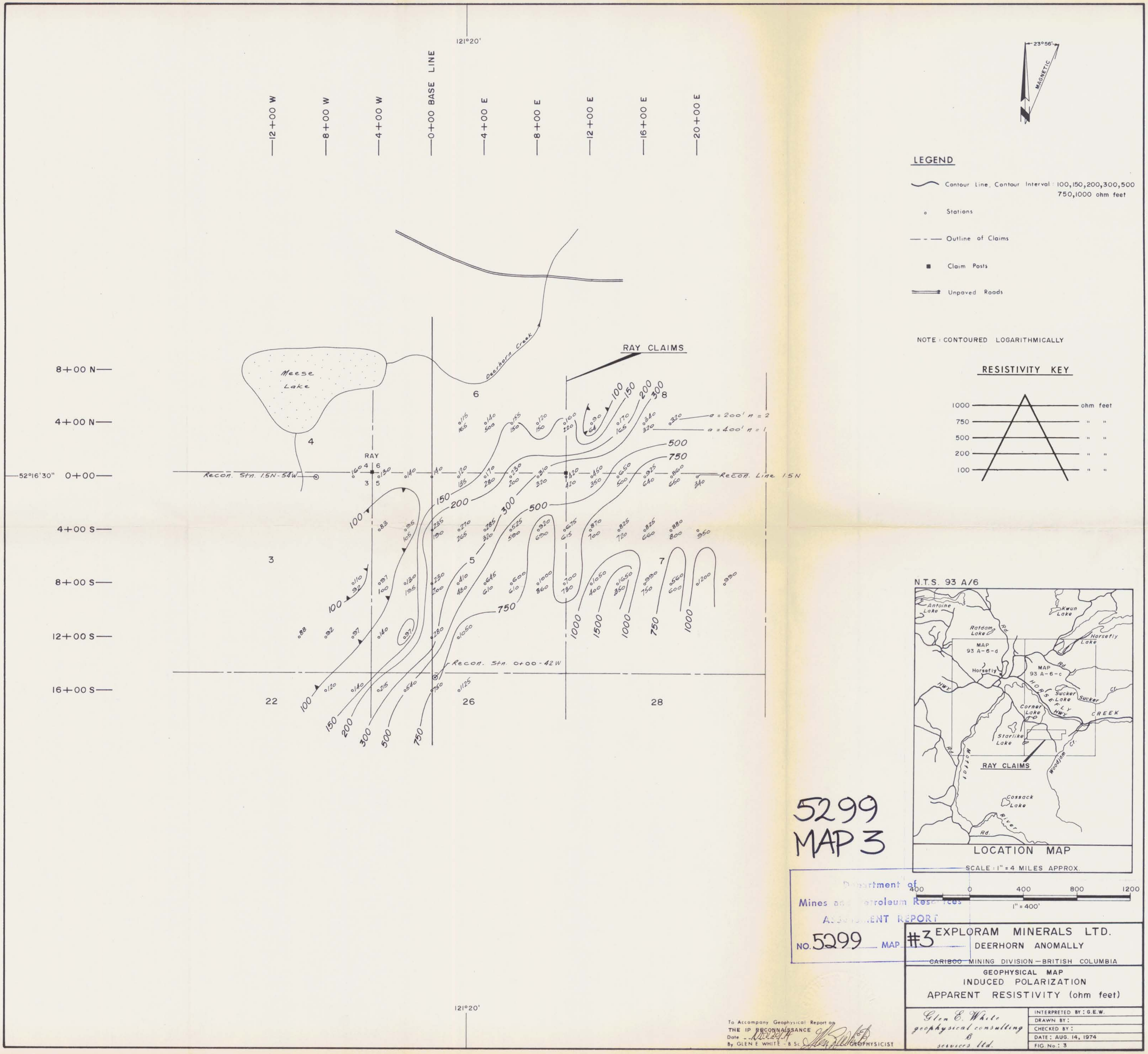
Glen E. White geophysical consulting & services ltd.

INTERPRETED BY: G.E.W.	
DRAWN BY:	
CHECKED BY:	
DATE: AUG. 14, 1974	
FIG. No.: 2A	

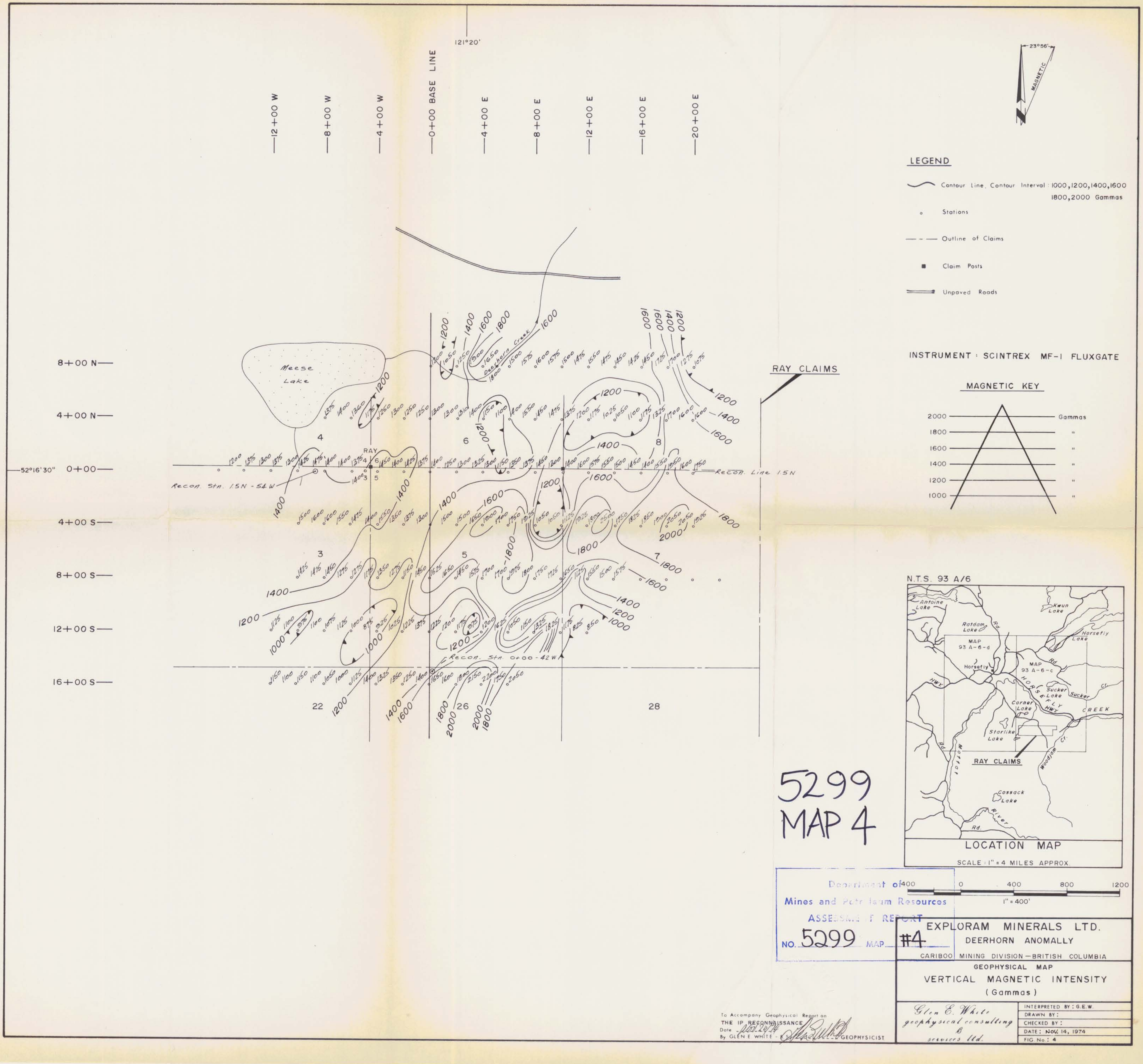
To Accompany Geophysical Report on
THE IP RECONNAISSANCE
Date Aug 20/74
By GLEN E WHITE - B.Sc. - GEOPHYSICIST



121°19'
16+00 W
12+00 W
8+00 W
4+00 W
0+00 BASE LINE
4+00 E
8+00 E
12+00 E
16+00 E
20+00 E
23°56'
MAGNETIC
LEGEND
Contour Line, Contour Interval 150,200,300,500 750 ohm feet
Stations
Outline of Claims
Claim Posts
Unpaved Roads
NOTE: CONTOURED LOGARITHMICALLY
RESISTIVITY KEY
750 ohm feet
500
300
200
150
12+00 N
8+00 N
4+00 N
0+00
4+00 S
8+00 S
26+00 S
30+00 S
34+00 S
38+00 S
52°16'30"
RAY Staking Line
Recon. Sta. 1.5N - 48E
a = 200' n=1 Typical
a = 400' n=1 Typical
Recon. Line 1.5 S
Swamp
14
16
13
15
32
34
36
31
33
35
N.T.S. 93 A/6
Antoine Lake
Kwun Lake
Ratdam Lake
Horsefly Lake
MAP 93 A-6-d
MAP 93 A-6-c
Horsefly
HORSEFLY HWY
Sucker Lake
Sucker Cr.
Corner Lake
CREEK
Starlike Lake
RAY CLAIMS
Woodjam Cr.
Cossack Lake
River
Rd.
LOCATION MAP
SCALE: 1" = 4 MILES APPROX.
400 0 400 800 1200
1" = 400'
5299
MAP 3A
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #3A
EXPLORAM MINERALS LTD.
WOODJAM ANOMALY
CARIBOO MINING DIVISION — BRITISH COLUMBIA
GEOPHYSICAL MAP
INDUCED POLARIZATION
APPARENT RESISTIVITY (ohm feet)
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY: G.E.W.
DRAWN BY:
CHECKED BY:
DATE: AUG. 14, 1974
FIG. No: 3A
To Accompany Geophysical Report on
THE IP RECONNAISSANCE
By GLEN E. WHITE - B.Sc. GEOPHYSICIST



121°20'
12+00 W
8+00 W
4+00 W
0+00 BASE LINE
4+00 E
8+00 E
12+00 E
16+00 E
20+00 E
23°56'
MAGNETIC
LEGEND
Contour Line, Contour Interval: 100,150,200,300,500
750,1000 ohm feet
Stations
Outline of Claims
Claim Posts
Unpaved Roads
NOTE: CONTOURED LOGARITHMICALLY
RESISTIVITY KEY
1000 ohm feet
750
500
200
100
RAY CLAIMS
Meese Lake
Deerhorn Creek
8+00 N
4+00 N
52°16'30" 0+00
4+00 S
8+00 S
12+00 S
16+00 S
RAY
Recon. Stn. 1.5N-54W
Recon. Line 1.5N
Recon. Stn. 0+00-42W
a = 200' n = 2
a = 400' n = 1
N.T.S. 93 A/6
Antoine Lake
Kwun Lake
Ratdam Lake
Horsefly Lake
MAP 93 A-6-d
MAP 93 A-6-c
Horsefly
HORSEFLY HWY
Sucker Lake
Sucker Cr.
CREEK
Corner Lake
Starlike Lake
RAY CLAIMS
Woodjam Cr.
Cossack Lake
River Rd.
LOCATION MAP
SCALE: 1" = 4 MILES APPROX.
400 0 400 800 1200
1" = 400'
5299
MAP 3
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #3
EXPLORAM MINERALS LTD.
DEERHORN ANOMALLY
CARIBOO MINING DIVISION — BRITISH COLUMBIA
GEOPHYSICAL MAP
INDUCED POLARIZATION
APPARENT RESISTIVITY (ohm feet)
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY: G.E.W.
DRAWN BY:
CHECKED BY:
DATE: AUG. 14, 1974
FIG. No.: 3
To Accompany Geophysical Report on
THE IP RECONNAISSANCE
By GLEN E. WHITE - B.Sc. GEOPHYSICIST



121°20'
12+00 W
8+00 W
4+00 W
0+00 BASE LINE
4+00 E
8+00 E
12+00 E
16+00 E
20+00 E
23°56'
MAGNETIC
LEGEND
Contour Line, Contour Interval : 1000,1200,1400,1600 1800,2000 Gammas
Stations
Outline of Claims
Claim Posts
Unpaved Roads
INSTRUMENT : SCINTREX MF-1 FLUXGATE
MAGNETIC KEY
2000
1800
1600
1400
1200
1000
Gammas
RAY CLAIMS
8+00 N
4+00 N
52°16'30"
0+00
4+00 S
8+00 S
12+00 S
16+00 S
Meese Lake
Deerhorn Creek
RAY
Recon. Stn. 15N - 54 W
Recon. Line 15N
Recon. Stn. 0+00 - 42 W
22
26
28
N.T.S. 93 A/6
Antoine Lake
Kwun Lake
Ratdam Lake
Horsefly Lake
MAP 93 A-6-d
MAP 93 A-6-c
Horsefly
HWY
HORSEFLY CREEK
Sucker Lake
Sucker Cr.
Corner Lake
Starlike Lake
RAY CLAIMS
Moffat
Woodjam Cr.
Cossack Lake
River
Rd.
LOCATION MAP
SCALE : 1" = 4 MILES APPROX.
5299
MAP 4
400
0
400
800
1200
1" = 400'
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5299 MAP #4
EXPLORAM MINERALS LTD.
DEERHORN ANOMALLY
CARIBOO MINING DIVISION — BRITISH COLUMBIA
GEOPHYSICAL MAP
VERTICAL MAGNETIC INTENSITY
(Gammas)
Glen E. White geophysical consulting & services ltd.
INTERPRETED BY : G.E.W.
DRAWN BY :
CHECKED BY :
DATE : NOV. 14, 1974
FIG No : 4
To Accompany Geophysical Report on
THE IP RECONNAISSANCE
Date
By GLEN E WHITE - GEOPHYSICIST