84-#317 - 12253

PHOENIX GEOPHYSICS LTD.

REPORT ON THE

PHASE INDUCED POLARIZATION AND RESISTIVITY SURVEY

ON THE

92P/9 RC GROUP

KAMLOOPS MINING DIVISION
BRITISH COLUMBIA

FOR

CRAIGMONT MINES LIMITED

LATITUDE: 51° 35'
LONGITUDE: 120° 05'
NTS 92P/9E

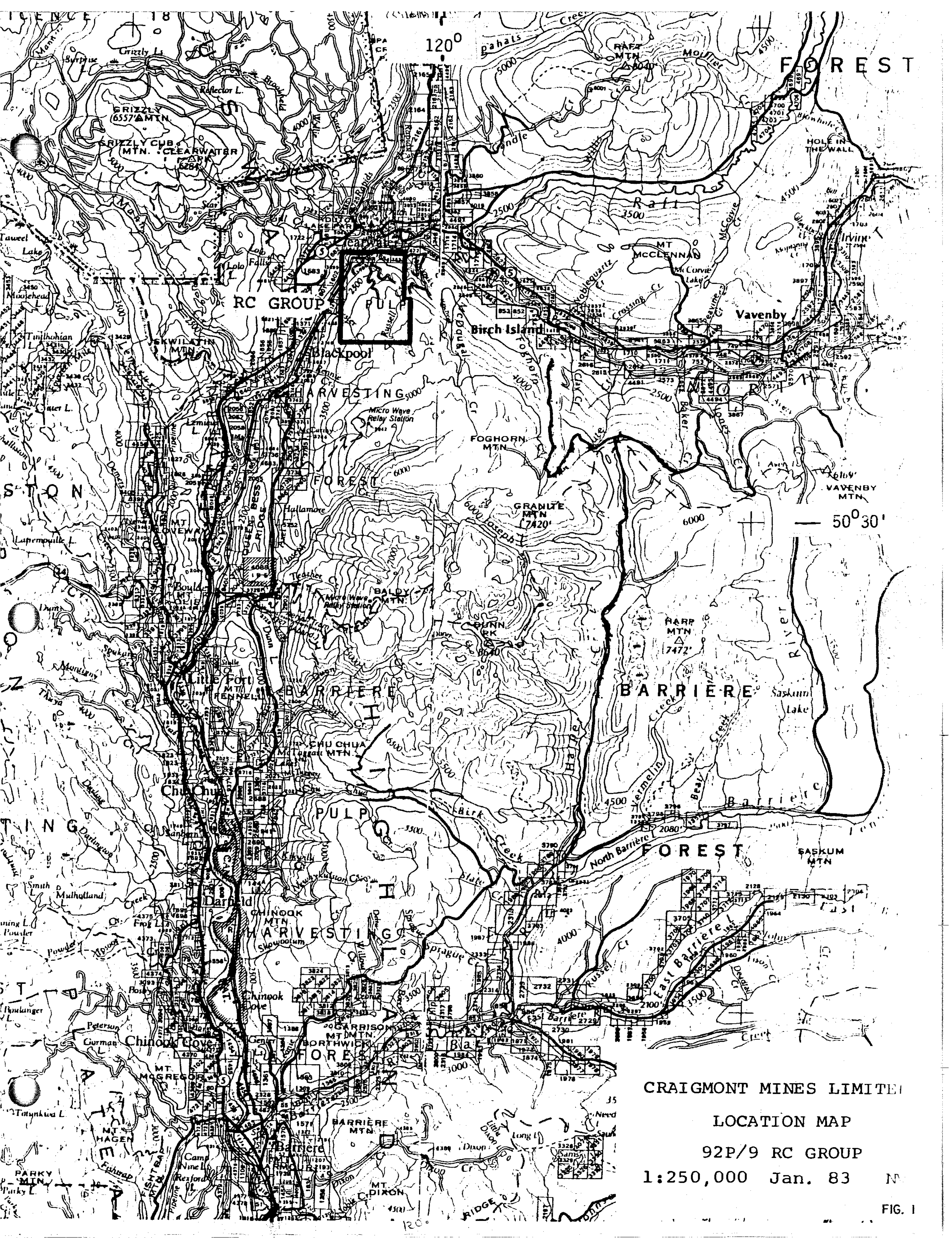
CLAIMS: RC-1 TO RC-4, INCL.
OWNER: CRAIGMONT MINES LIMITED
OPERATOR: CRAIGMONT MINES LIMITED

BY

PAUL A. CARTWRIGHT, B.Sc.
Geophysicist

DATED: 8 MAY 1984

TABLE OF CONTENTS



CRAIGMONT MINES LIMITED

LOCATION MAP

92P/9 RC GROUP

1:250,000 Jan. 83

FIG. 1

PART A

1) INTRODUCTION

An Induced Polarization and Resistivity Survey has been completed on the 92P/9 RC Group, Kamloops Mining Division, British Columbia, on behalf of Craigmont Mines Limited.

The property is located several kilometers to the southwest of the community of Clearwater, B.C. Access is via paved road along the south side of the North Thompson River from Clearwater, and then via logging roads into the area of interest.

The following geological description of the project area has been provided by Mr. Nels Vollo, P.Eng.:

> "The group is underlain by rocks of the Sicamous, Eagle Bay,and Fennell Formations, forming a syncline whose axis trends southerly from Clearwater. Black shales of the Sicamous Formation, found only along the north and east boundaries, are overlain by relatively thin rhyolites of the Eagle Bay Formation, in turn overlain by the essentially basaltic rocks of the Fennell Formation. Within the Fennell, several siliceous, often graphitic tuffite units were mapped, generally coincident with electromagnetic conductors."

Past work included airborne electromagnetic surveying followed up by line cutting, VLF-EM and magnetic surveying, soil geochemistry and geological mapping. These geological investigations suggested graphitic tuffites as the primary cause of most of the airborne conductors.

Objective of the Phase IP and Resistivity Survey was to possibly outline sulphide-rich regions within two previously discovered conductors, which were thought to be graphitic in nature.

Previous work, carried out in part by Dr. W. Pelton of Phoenix Geophysics, has shown that massive sulphide mineralization displays shorter decay time constants than does graphite; that is, the maximum Phase IP effects are noted at higher frequencies in the case of massive sulphides. It appears that the time constant can be directly related to the texture (grain size) of the particles causing the IP effect, with the larger grain sizes demonstrating larger time constant values.

Data recorded in open pit mines using short electrode intervals shows that massive sulphides typically give rise to curves which peak at relatively high frequencies (i.e., short time constant), while the graphite response peaks at much lower frequencies (i.e., long time constant). Using the 2 frequency Phase IP technique, one can estimate the value of the time constant by observing the ratio of the higher frequency phase angles vs the lower frequency phase angles. Values less than 1.0 would suggest the presence of larger time constant material, such as graphite, while sulphides would be expected to give rise to higher ratios.

A Phoenix Model IPV-2 Phase IP and Resistivity receiver unit was used in conjunction with a Phoenix Model IPT-1 IP and Resistivity transmitter powered by a 2.0 kw motor-generator. IP effect is rcorded directly as milliradians of phase shift between the transmitted current and the received voltage, at operating frequencies of 1.0 Hz. and 0.11 Hz. Apparent resistivity values are normalized in units of ohm-meters. The dimensionless ratio, phase 1.0 Hz./phase 0.11 Hz., has been calculated for every reading and these values are shown on the psuedo section plots.

Dipole-dipole array was utilized to make all of the measurments with a basic inter-electrode distance of 25 meters.

Two dipole separations were recorded in every case. Number of line kilometers surveyed during the present survey was 1.55 line kilometers.

Field work was carried out during April 1984, under the supervision of the author. His certificate of qualification is included with this report.

2. DESCRIPTION OF CLAIMS

The 92P/9 RC Group consists of 4 claims totalling 75 units, as outlined below.

Claim Number	Record No.
RC-1	4006
RC-2	4007
RC-3	4008
RC-4	4009

Owner of the claims is Craigmont Mines Ltd.
Operator is Craigmont Mines Ltd.

3. PRESENTATION OF DATA

The Induced Polarization and Resistivity results are shown on the following data plots in the manner described in the notes preceding this report.

Line	Electrode Interval	Dwg. No.
12400N	25 meters	I.P.P.-5853-1
12200N	25 meters	I.P.P.-5853-2
12000N	25 meters	I.P.P.-5853-3
11800N	25 meters	I.P.P.-5853-4

Also enclosed with this report is Dwg. I.P.P.-B-2004, a plan map of the 92P/9 RC Grid at a scale of 1:5000. The definite, probable and possible Induced Polarization anomalies are indicated by bars, in the manner shown on the legend, on this plan map as well as on 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 va ues were easured.

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 electrode interval length; i.e. when using 25 m electrode intervals the position of a narrow sulphide body can only be determined to lie between two stations 25 m apart. In order to definitely locate, and fully evaluate, a narrow, shallow source it is necessary to use shorter electrode intervals. In order to locate sources at some depth, larger electrode intervals must be used, with a corresponding increase in the uncertainties of location. Therefore, while the center of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

The topographic claim and grid information shown on Dwg. I.P.P.-B-2004 has been taken from maps made available by the staff of Craigmont Mines Ltd.

4. DISCUSSION OF RESULTS

The Phase IP and Resistivity results illustrated on plan map Dwg. No. I.P.P.-B-2004 show two parallel, north-south striking anomalous zones on the northern 3 lines surveyed. However, in the case of the most southerly line, Line 11800N, the two zones merge and form what appears to be a single, very wide anomalous area, which underlies almost the entire length of the surveyed line. As line 11800N is markedly higher in elevation than the other lines, perhaps a synclinal structure is involved, with Line 11800N crossing the axis, while the other three lines traverse the limbs of the feature.

The various individual anomalies recorded over the zone or zones in question, all show conductive, polarizable regions in the centers of the patterns, surrounded by more resistive and less polarizable margins. Such signatures indicate the presence of a narrow core of concentrated mineralization with an accompanying

halo of disseminated material.

Ratios of the high frequency (1.0 Hz.) phase angles to the low frequency (0.11 Hz.) phase angles are quite uniform within the centers of the anomalous zones, with 0.90 being the approximate median number. This indicates the phase angle curves are decreasing with increasing frequency above 0.11 Hz., and this suggests that large grain size material such as graphite is the primary cause of most of the anomalies recorded by the present phase I.P. survey. However, the data recorded on Line 11800N does exhibit scattered ratios of 1.0 or greater within the wide anomaly interpreted on this line. These increased ratios could represent narrow, more sulphide rich sections set within the broad section of graphitic rocks.

5. SUMMARY AND RECOMMENDATIONS

The Phase Induced Polarization and Resistivity Survey on the 92P/9 RC Group has outlined two very conductive, and very polarizable zones on the northern three lines traversed, while a single, very wide zone is noted in the case of Line 11800N. The dual frequency phase angle ratios, which are generally less than 1.0 indicate a large grain size mineral, such as graphite, to be the primary cause of the anomalies recorded. Line 11800 may be an exception, as several scattered, sporatic ratios of 1.0 or greater are noted within the highly anomalous region, and could be outlining very narrow zones of increased sulphide concentration.

Therefore, if drilling were considered to test the zones detected by the present survey, priority should be given to testing Line 11800 first, in those areas within the main anomaly where ratios of 1.0 or greater are noted.

PHOENIX GEOPHYSICS LTD.

Paul A. Cartwright

Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: May 8, 1984.

ASSESSMENT DETAILS

PROPERTY: 92P/9 RC Group

MINING DIVISION: Kamloops

SPONSOR: Craigmont Mines Ltd.

PROVINCE: British Columbia

LOCATION: 3 km S.W. of Clearwater, B.C.

TYPE OF SURVEY: Phase Induced Polarization and Resistivity

OPERATING MAN DAYS: 12

DATE STARTED: April 10, 1984

EQUIVALENT 8 HR. MAN DAYS: 18

DATE FINISHED: April 12, 1984

CONSULTING MAN DAYS: 2

NUMBER OF STATIONS: 66

DRAFTING MAN DAYS: 3

NUMBER OF READINGS: 396

TOTAL MAN DAYS: 23

KM OF LINE SURVEYED: 1.55

CONSULTANTS:

Paul A. Cartwright, 4238 West 11th Avenue, Vancouover, B.C.

FIELD TECHNICIANS:

P. Cartwright, 4238 West 11th Avenue, Vancouver, B.C.
Y. Nadeau, 2873 West 13th Avenue, Vancouver, B.C.
M. Makulowich, 669 Valdes Drive, Kamloops, B.C.
R. Wakaluk, 7886 Vivian Drive, Vancouver, B.C.

DRAUGHTSMEN:

R. Wakaluk, 7886 Vivian Drive, Vancouver, B.C.

PHOENIX GEOPHYSICS LTD.

Paul A. Cartwright

Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: May 8, 1984

STATEMENT OF COST

Craigmont Mines Limited
Phase Induced Polarization and Resistivity Survey
92 P/9 RC Group, Kamloops M.D., British Columbia

Crew: P. Cartwright, Y. Nadeau, M. Makulowich, R. Wakaluk

Period: April 10, 11, 12, 1984

2.5 Operating Days @ $ 1,300.00	$ 3,250.00
0.5 Operating Days @ N.C.	NC
Mobilization-Demobilization	1,750.00
Total:	$ 5,000.00

PHOENIX GEOPHYSICS LTD.

Paul A. Cartwright

Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: May 8, 1984.

CERTIFICATE

I, Paul A. Cartwright, of the City of Vancouver, Province of British Columbia, do hereby certify:

1. I am a geophysicist residing at 4238 W. 11th Avenue, Vancouver, B.C.

2. I am a graduate of the University of British Columbia, with a B.Sc. Degree. (1970).

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

4. I have been practising my profession for 14 years.

5. I am a Professional Geophysicist licensed in the Province of Alberta.

6. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly, in the property or securities of Craigmont Mines Ltd.

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

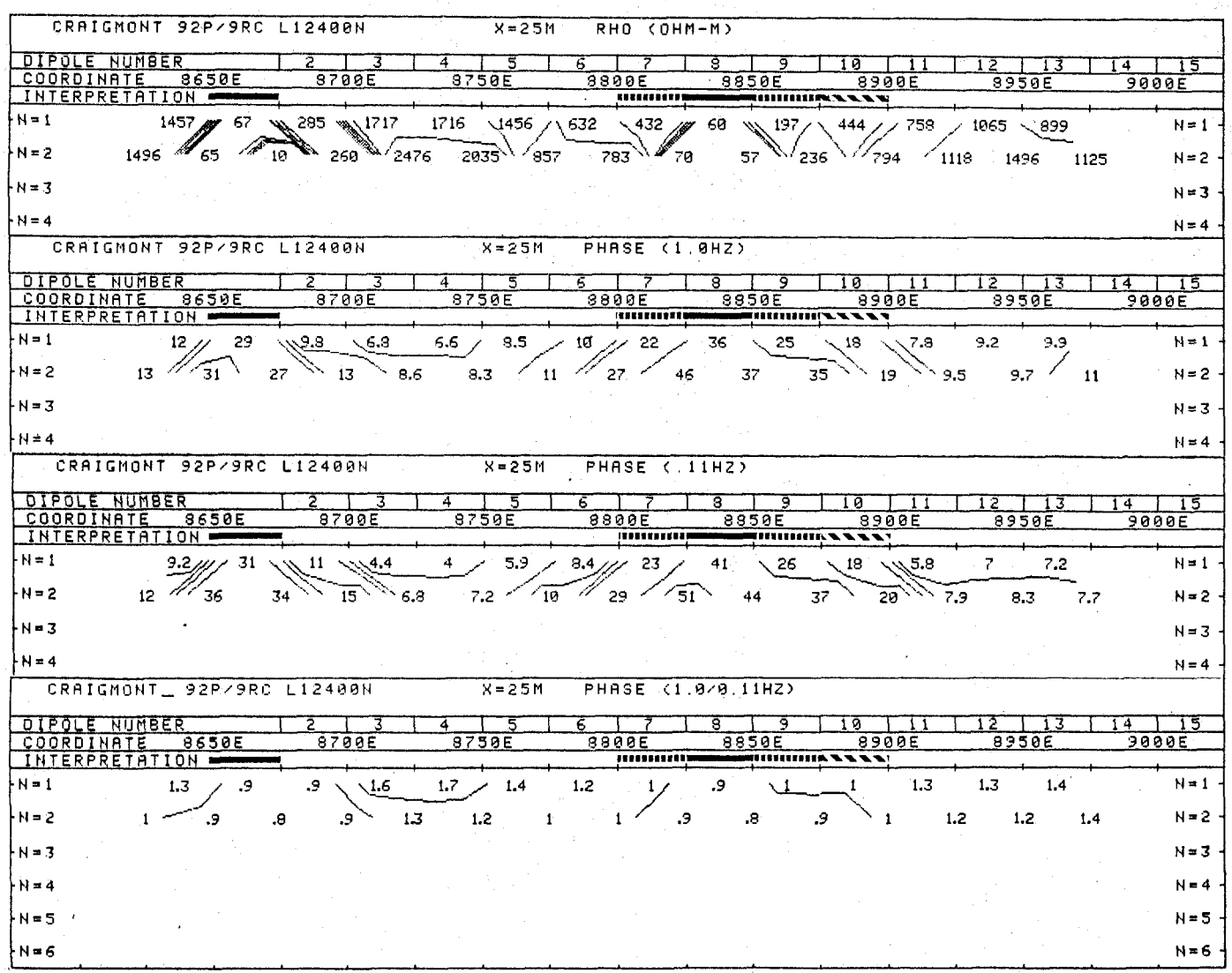
8. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

DATED AT VANCOUVER, B.C. this 8th day of May 1984.

Paul A. Cartwright

Paul A. Cartwright, B.Sc.

DWG. NO.-I.P.-5853-1

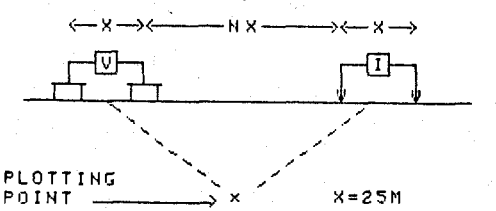


CRAIGMONT MINES LTD

92P/9RC GROUP

KAMLOOPS M.D./B.C.

LINE NO.-12400N



SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
PROBABLE
POSSIBLE

FREQUENCY (HERTZ)
1.0/0.11

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

DATE SURVEYED: APRIL 1984

APPROVED

PAC

DATE MAY 08/84

PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION

AND RESISTIVITY SURVEY

DWG. NO.-I.P.-5853-2

CRAIGMONT 92P/9RC L12200N X=25M RHO (OHM-M)

DIPOLE NUMBER	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COORDINATE	8650E		8700E		8750E		8800E		8850E		8900E		8950E	9000E
INTERPRETATION														

N=1		1179	1841	239	7	161	2494	3111	5501	1037	150	116	1578	1693	2838	N=1
N=2	2489	2218	402	1.4	1.3	162	2415	4289	1693	108	48	189	1044	2302	3403	N=2
N=3																N=3
N=4																N=4

CRAIGMONT 92P/9RC L12200N X=25M PHASE (1.0HZ)

DIPOLE NUMBER	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COORDINATE	8650E		8700E		8750E		8800E		8850E		8900E		8950E	9000E
INTERPRETATION														

N=1		9	18	28	39	20	20	12	12	21	43	43	29	11	10	N=1
N=2	9.5	20	30	52	20	22	17	25	21	40	50	36	32	11	12	N=2
N=3																N=3
N=4																N=4

CRAIGMONT 92P/9RC L12200N X=25M PHASE (.11HZ)

DIPOLE NUMBER	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COORDINATE	8650E		8700E		8750E		8800E		8850E		8900E		8950E	9000E
INTERPRETATION														

N=1		6.7	16	25	47	22	20	11	7.7	23	46	48	28	9.5	7.7	N=1
N=2	7.2	18	28	60	34	25	18	25	24	45	56	40	33	9.7	8.1	N=2
N=3																N=3
N=4																N=4

CRAIGMONT 92/P9RC L12200N X=25M PHASE (1.0/0.11HZ)

DIPOLE NUMBER	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COORDINATE	8650E		8700E		8750E		8800E		8850E		8900E		8950E	9000E
INTERPRETATION														

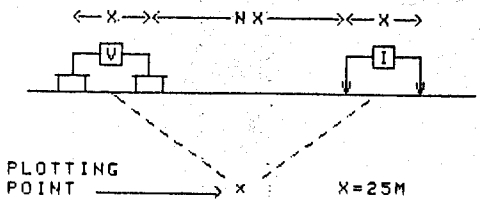
N=1		1.3	1.1	1.1	.8	.9	1	1.1	1.6	.9	.9	.9	1	1.2	1.3	N=1
N=2	1.3	1.1	1.1	.9	.6	.9	1	1	.8	.9	.9	.9	1	1.1	1.4	N=2
N=3																N=3
N=4																N=4
N=5																N=5
N=6																N=6

CRAIGMONT MINES LTD

92P/9RC GROUP

KAMLOOPS M.D., B.C.

LINE NO.-12200N



SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
PROBABLE
POSSIBLE

FREQUENCY (HERTZ)
1.0,0.11

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

DATE SURVEYED: APRIL 1984

APPROVED

PAC

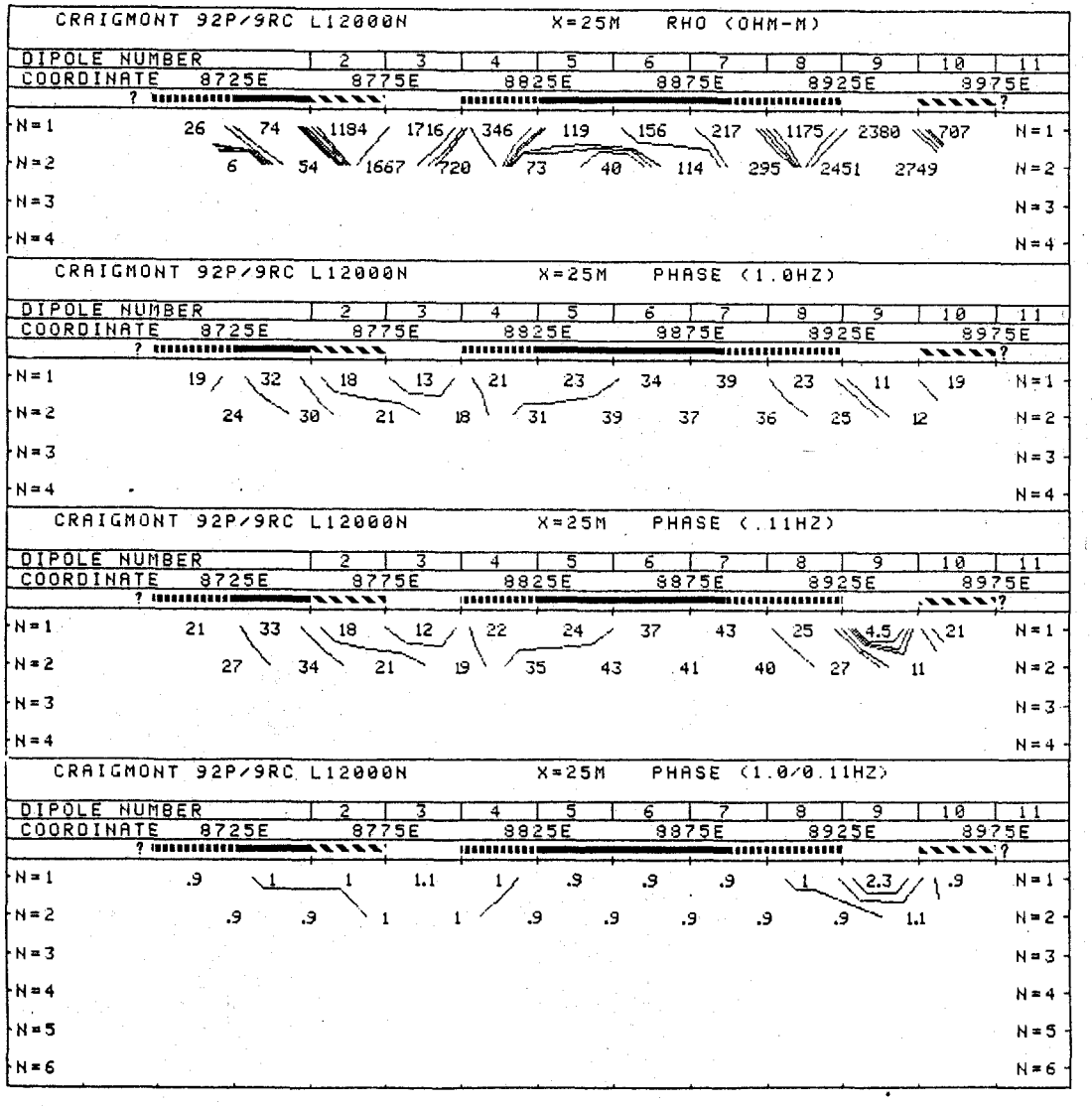
DATE MAY 08/84

PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION

AND RESISTIVITY SURVEY

DWG. NO.-I.P.-5853-3

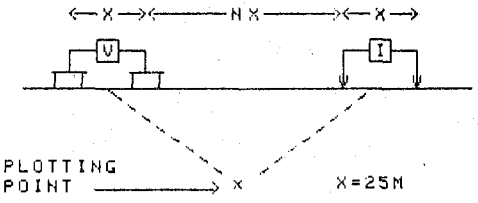


CRAIGMONT MINES LTD

92P/9RC GROUP

KAMLOOPS M.D., B.C.

LINE NO.-L12000N



SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
PROBABLE
POSSIBLE

FREQUENCY (HERTZ)
1.0/0.11

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

DATE SURVEYED: APRIL 1984

APPROVED

PAC

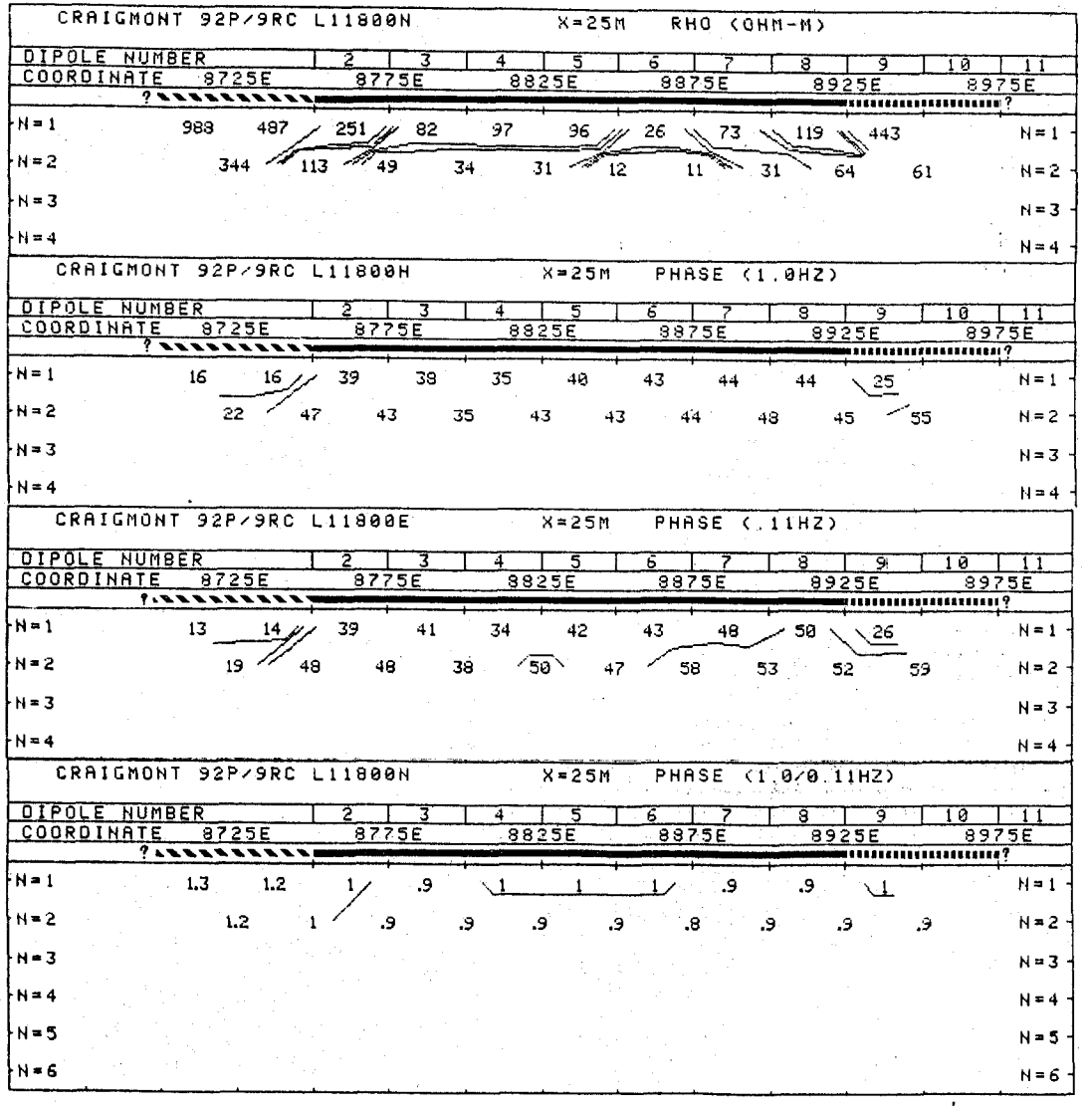
DATE MAY 08/84

PHOENIX GEOPHYSICS LTD.

INDUCED POLARIZATION

AND RESISTIVITY SURVEY

DWG. NO.-I.P.-5853-4

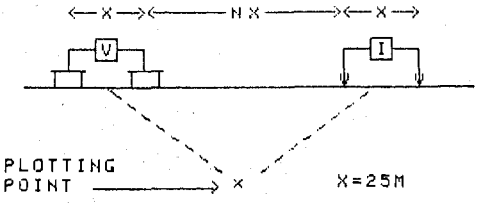


CRAIGMONT MINES LTD

92P/9RC GROUP

KAMLOOPS M.D./B.C.

LINE NO -L11800N



SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE
PROBABLE
POSSIBLE

FREQUENCY (HERTZ)
1.0/0.11

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

DATE SURVEYED: APRIL 1984

APPROVED

PAC

DATE MAY 08/84

PHOENIX GEOPHYSICS LTD.

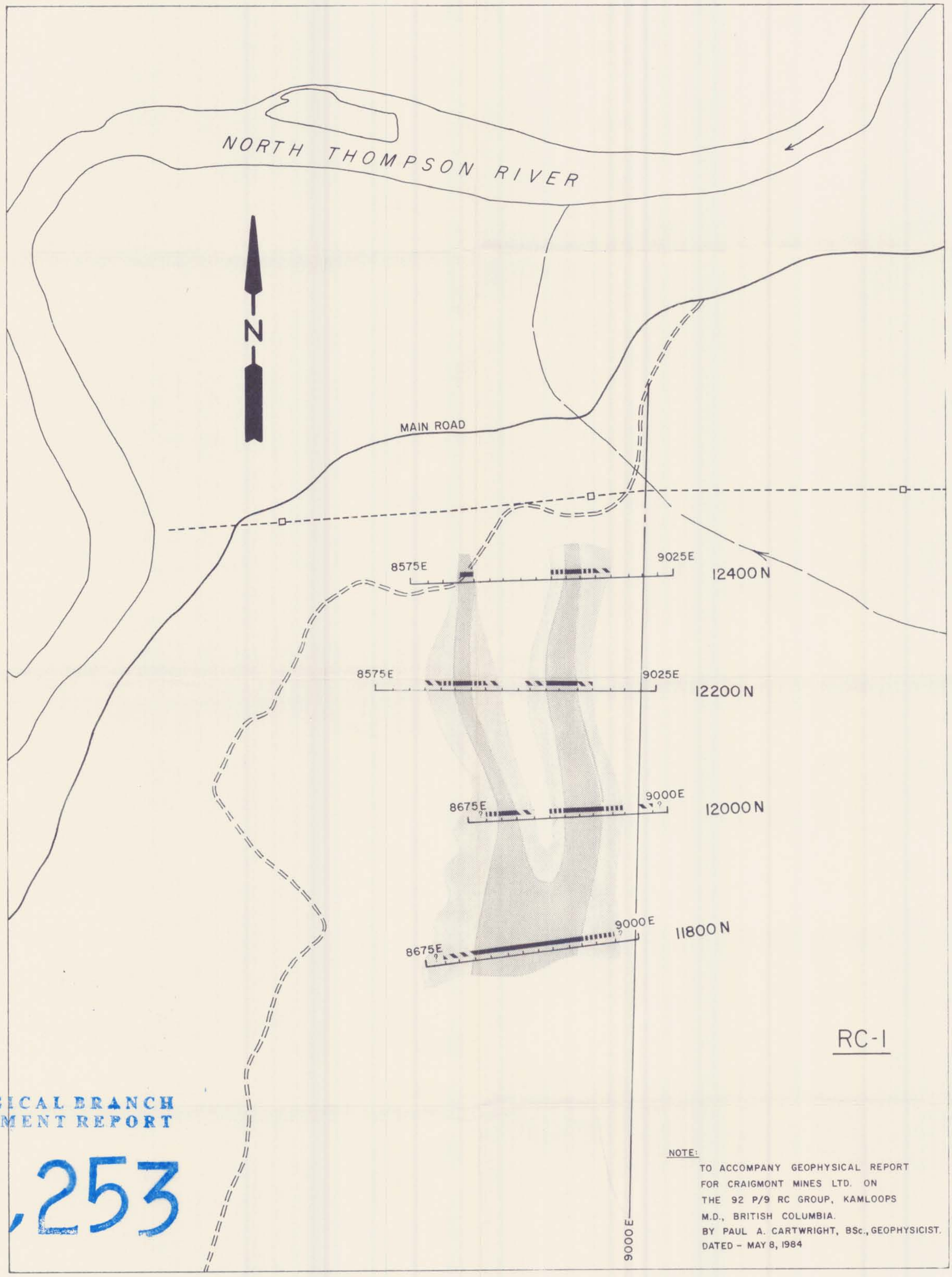
INDUCED POLARIZATION

AND RESISTIVITY SURVEY

PHOENIX GEOPHYSICS LIMITED

INDUCED POLARIZATION AND RESISTIVITY SURVEY

PLAN MAP



RC-1

NOTE:
TO ACCOMPANY GEOPHYSICAL REPORT FOR CRAIGMONT MINES LTD. ON THE 92 P/9 RC GROUP, KAMLOOPS M.D., BRITISH COLUMBIA.
BY PAUL A. CARTWRIGHT, BSc., GEOPHYSICIST.
DATED - MAY 8, 1984

SURFACE PROJECTION OF ANOMALOUS ZONE

DEFINITE ——————

PROBABLE ....

POSSIBLE \ \ \ \ \ \

DIPOLE — DIPOLE ARRAY
x = 25m.

CRAIGMONT MINES LTD.

92 P/9 RC GROUP

KAMLOOPS M.D., BRITISH COLUMBIA

SCALE

0 100 200m

1:5000

OUTLINE OF ANOMALOUS IP ZONE:

DRAWN: R.G.W.

DATE: APRIL 26, 1984

APPROVED: PAC

DATE: MAY 08/84

DWG NO.- I.P.P.-B-2004