GEOCHEMICAL AND GEOPHYSICAL REPORT

on the

SHRED PROPERTY (SHRED #1,2,3,4)

Owned and Operated by

BP MINERALS LIMITED

Omineca Mining Division
NTS 94D9

Located approximately 13.2 miles NE
of Sustut Lake, B.C.

Long.126°16', Lat.56°42'

S. Hoffman
G. DePaoli

14 September, 1978

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

The SHRED Claim Group is located in Northern British Columbia. The property consists of 4 mineral claims owned by BP Minerals Limited. The economic viability of copper sulphide mineralization associated with diorite and ultramafic rocks is currently under investigation. During the period June 23 to July 19, 1978, a total of 25.1 km of grid lines were cut and 29 deep overburden holes sampled by Bema Industries Limited. During the period July 20-29, 1978, a total of 20.16 km of induced polarization/resistivity surveying were completed over the property. Geochemical surveying was conducted by Morrison IP Surveys at the request of BP Minerals Limited and under the supervision of C.D.S. Bates.

LOCATION AND ACCESS

The property is located in northern British Columbia approximately 10 miles northwest of Johanson Lake. It lies within the Omenica Mining Division at 56°42' North Latitude, 126°16' West Longitude within NTS Block 94 D 9.

Access to within 6 miles of the property is available via the secondary road connecting Germansen Landing and Johanson Lake. Final access to the grid is by helicopter.

GRID CONTROL

The control grid is an extension of an earlier grid which was established in 1976. A total of 14.4 miles of line were

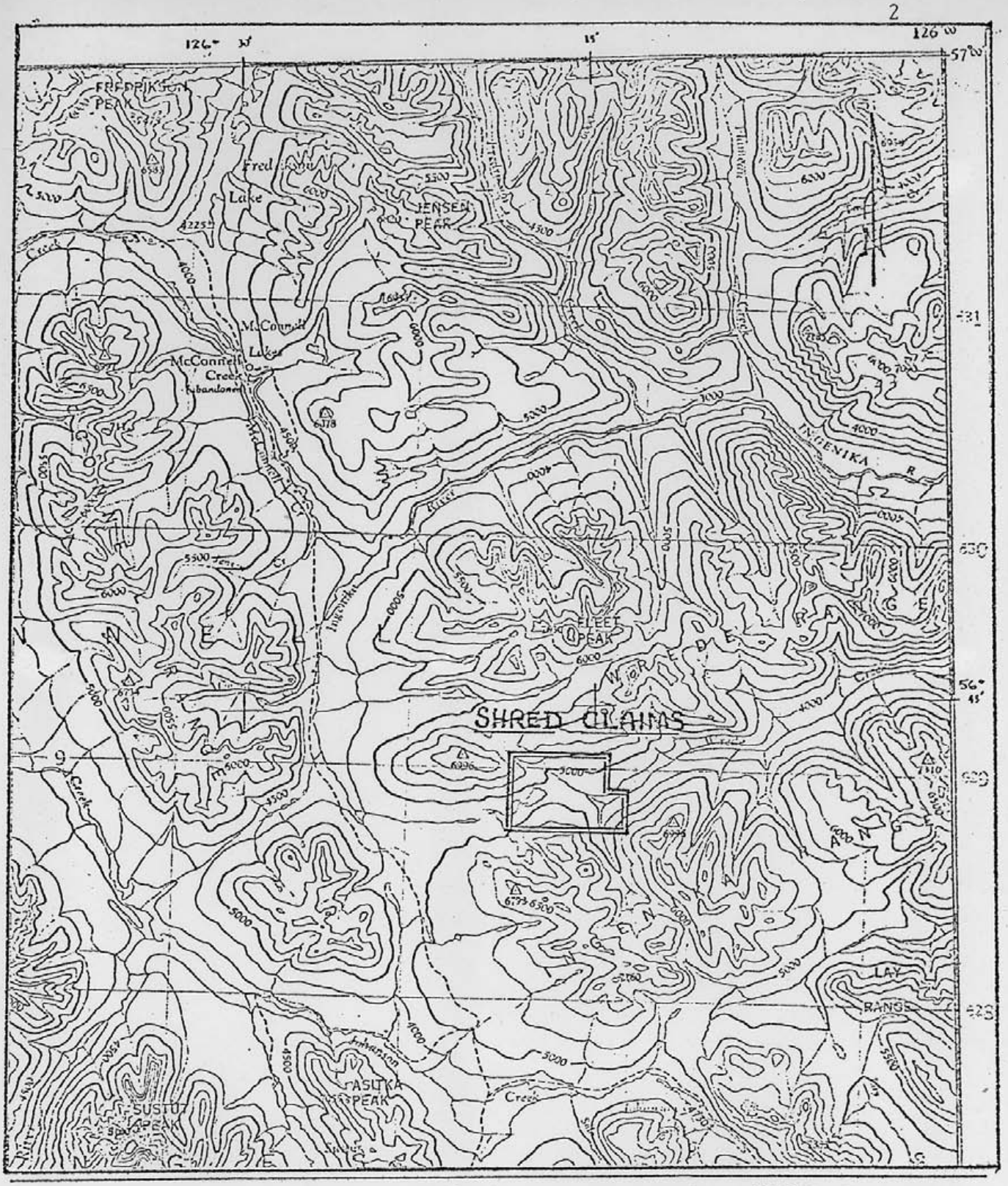
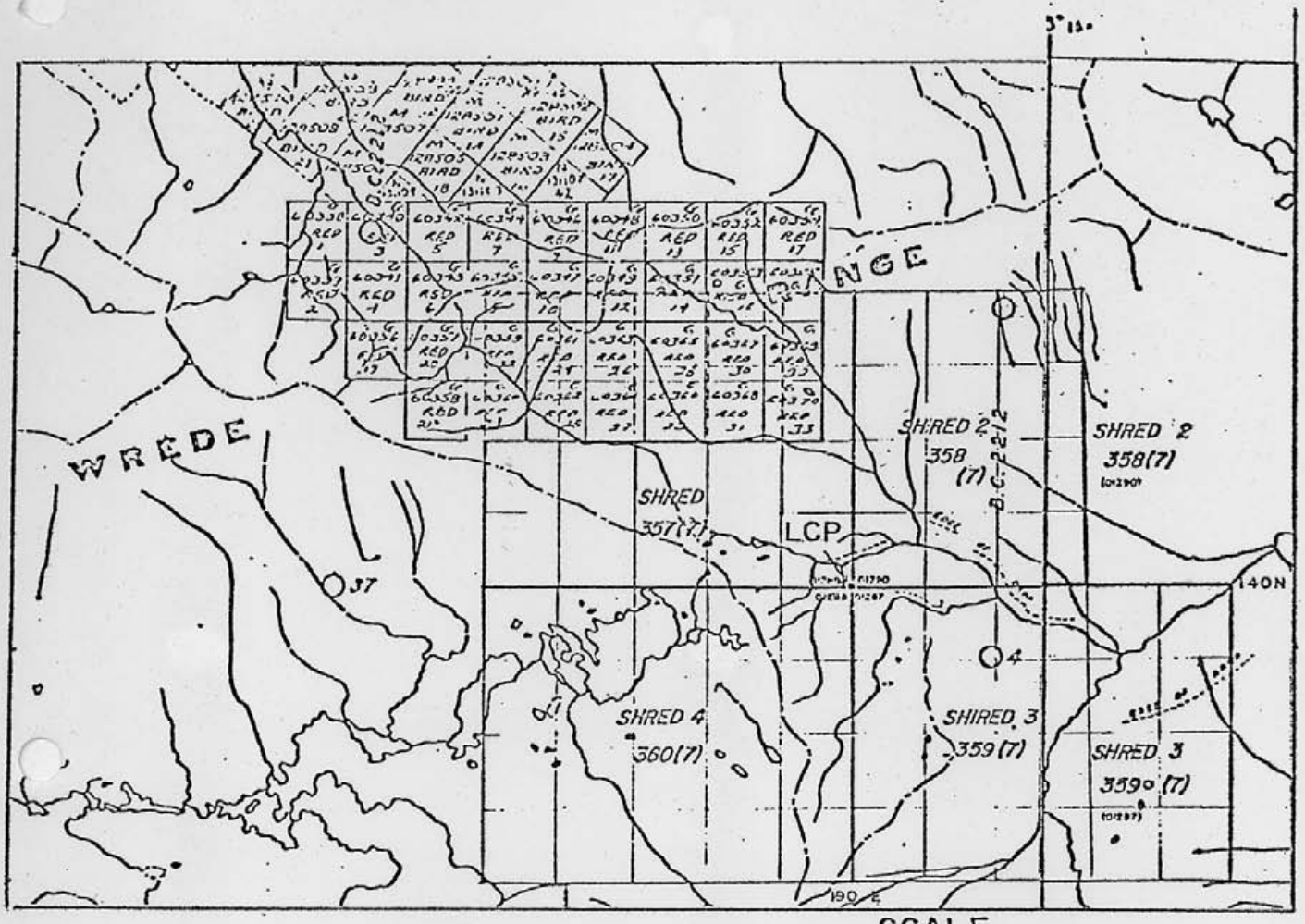


FIGURE 1: LOCATION MAP
SHRED CLAIMS
OMINECA, M.D.
94D9

SCALE: ONE INCH EQUALS FOUR MILES
1:250,000



SCALE

0 1 2MILES

0 1000 2000 METERS

BP Minerals Limited

SHRED CLAIMS

SCALE 1 : 50000		NTS 94D-9	FIG. 2
	DATE AUGUST 75	PROJ. 505	

To accompany report

added in 1978. Emplacement of these new lines was done by transit and starting control points were picked from existing crossline intersections.

GENERAL GEOLOGY (After M.D. Bradley)

The Shred Claims lie withing the "Quesnel Trough", a northwest trending linear belt of Mesozoic Volcanics and sedimentary rocks separating Upper Paleozoic rocks of the Pinchi Geanticline to the west from Proterozoic and Paleozoic metasediments of the Omineca Geanticline in the east. In the area of the claims, Upper triassic Takla pyroclastics, flows and limy sediments are intruded by a variety of Jurassic-Cretaceous plutons.

The claims are underlain by Takla Group, fine to coarse grained pyroclastic andesites, interbedded with argillite and limestone. These rocks are intruded near the center of the grid by plugs and dykes of diorite and in the east by monzonite and monzodiorite stocks, probably associated with the Fleet Peak Pluton. In the north central portion of the property numerous small bodies of serpentinized pyroxinite-dunite and gabbro are found along 2 narrow, fault bounded, northwest trending zones.

Intense structural prepatation and strong copper-molybdenum anomalies has attracted geological interest on the area. Heavy pyrite (10%) and minor chalcopyrite are noted in several intrusive complexes with the mineralization occurring in both intrusive and contact rocks. In the east end of the property three small massive sulphide (magnetite, pyrite, pyrrhotite, chalcopyrite) lenses cut serpentinized peridotite.

PART A

1978 GEOPHYSICAL REPORT ON THE SHRED CLAIMS (#1-#4)

BY: GARRY M. DEPAOLI
GEOPHYSICIST, B.Sc.

DATE: AUGUST 20, 1978.

TABLE OF CONTENTS - PART A

INDUCED POLARIZATION SURVEY

INTRODUCTION AND THEORY

Induced polarization measurements were undertaken to determine the lateral and vertical distribution of sulphides within 600 feet of ground surface over the grid area. More specifically the possible concentration of sulphides near ground magnetic targets and the presence of sulphide halos, typical of porpyry environments was to be tested. Apparent resistivity data taken concurrently with IP measurements is useful in defining abrupt lithological changes, inferring overburden depths and assessing the importance of any IP effects obtained.

The term induced polarization means the electrical separation (ie. separation of charges) induced by an applied electric field. The cause of this polarization is changes in the mobilities of ions within a rock. At the interfaces between zones of different mobilities, excesses or deficiencies of ions occur; the concentration grakients developed oppose the current flow and cause a polarizing effect. When mineral grains block the pore passages of rocks and a current is applied, a concentration of ions builds up at the electrolyte (water) - metal interface while awaiting an electrochemical reaction which must occur before the electric charge can be transferred from an ion in the electrolyte to a free electron in the metal. The forces which oppose the current flow are said to polarize the interface and the added voltage necessary to drive the current across the barrier is known as overvoltage.

It takes a finite time to build up overvoltage and one finds that the impedances of the zones (Warburg Impedance) decreases with increasing frequency. In the frequency domain system that was employed the decrease in the Warburg Impedance was measured between current applied at 0.3 and 5.0 hertz.

INSTRUMENT AND PROCEDURE

A multiple frequency McPhar induced polariztion system Model P660, was employed in measuring the polarization and resistivity parameters. The transmitter is a manually variable voltage source. The output current can be selected from both polarities and varies from direct current to automatically alternating output frequencies of 0.05, 0.1, 0.3, 1.25 and 5.0 hertz. Power was obtained from a 2½ KW - 400 hertz motor generator. The maximum output voltage is 690 volts.

A symetrical in line dipole-dipole array was employed in the survey. The dipole length was 300 feet and measurements were taken to 4 separations (N=1,2,3,4). Survey procedure required the preparation of a "set-up" station near the center of each line. The transmitter and its motor generator power supply remained stationary at the set-up position and wires in increasing 300 foot intervals were strung out in both directions. Care was taken to ensure that the wires were well separated to prevent inductive coupling effects. The ends of the wires were connected to 4 foot stainless steel rods which had been hammered into the ground. Where possible the receiving dipole also utilized the stainless steel rods for electrode connections. Once the receiver dipole moved past the last steel rod ground connections were made via porous pots. Radio contact between the receiver and transmitter operators coordinated power on and off periods.

PRESENTATION OF DATA

The data is plotted in 14 pseudosections, Figures 3a-1' after Page 10 . The pseudosections are vertical profile plots displaying apparent resistivities in $\rho_a/2\pi$ ohm feet and percent frequency

effect values. Figures 3k' and 31' are resurveyed segments of Lines 207 E and 215 E. Here a 100 foot dipole length was employed to more accurately detail anomalous PFE responses. Contoured plan maps of the first separation (N=1) apparent resistivity and percent frequency effect data have also been prepared in Figures 4 and 5 respectively. An interpretation of the data is presented in Figure 6.

RESULTS AND INTERPRETATION

Five induced polarization anomalies have been interpreted from the data and are labelled in Figure 6.

Anomaly #1 occurs on the northern end of Line 140 E and it is still open to the north. It is characterized by percent frequency effects of 7.8 to 9.8% and relatively low apparent resistivities of 300 to 500 $\rho(\omega)/2\pi$ ohm feet. This signature is interpreted to reflect a sulphide concentration of 2 to 3% by volume.

Anomalies #2 and #3 in the northern part of the survey area have similar induced polarization and resistivity responses. In addition they have similar shapes and both trend northeast. For these reasons a common geological genesis is postulated. Both anomalies are well defined on their southern lines, then broaden and become weaker to the north. However, they appear to open at depth to the north.

Anomaly #4 on Line 215 E has been broken into two smaller anomalies which are interpreted to be connected at depth. Figure 31' which details one portion of the anomaly reveals that this part of the anomaly is not coincident with South Canyon Creek.

Anomaly #5 on Line 207 E contains the highest PFE responses of the survey. Percent frequency effects as high as 13.5% in Figure 3k' indicate a sulphide concentration of 4% by volume. Because of the averaging inherent in the IP technique, pods of much higher sulphide concentrations are possible within this anomaly.

Two continuous resistivity lows trending northwest are visible on the northern part of the survey area in Figure 4. Their coincidence with linear portions of North Canyon and Lineament Creeks stongly suggests the presence of two major northwest faults. The interpreted directions of these faults based on the resistivity data are shown in Figure 6.

CONCLUSIONS AND RECOMMENDATIONS

Geological, geochemical and further geophysical data associated with each induced polarization anomaly should be reviewed. Anomalies having positive support from the other exploration parameters should be considered as drill targets.

From solely a geophysical viewpoint anomalies #2 and #3 are considered as most important in terms of a porphyry model. They are associated with intersecting trends, and may be connected to the north. Thus a sufficient size potential is realized.

In terms of a massive sulphide target, Anomaly #5 is rated as having the highest priority. Should a drill decision be reached further grooming of collar locations may be aided by detailed ground magnetic traverses.

RESPECTFULLY SUBMITTED,

Garry DePaoli

GARRY M. DEPAOLI
GEOPHYSICIST, B.Sc.

August 20, 1978
108 Ranch, B.C.

CERTIFICATION

I Garry M. DePaoli of the Village of 100 Mile House, in the Province of British Columbia, HEREBY CERTIFY AS FOLLOWS:

1. That I am a graduate of the University of British Columbia Vancouver, B.C. with a Bachelor of Science Degree in Combined Honours Geophysics and Geology. (1969)

2. That I have practiced my profession as a Geophysicist continouously for the past 9 years in Northern Ontario, Quebec, New Brunswick, Manitoba, Western USA, Alaska, Yukon Territories and British Columbia.

3. That I am a member in good standing of the Society of Exploration Geophysicists, The Geological Association of Canada, The Canadian Institute of Mining and Metallurgy and the B.C. Society of Exploration Geophysicists.

4. That I have no interest directly or indirectly in the Shred Claim Group nor do I expect to receive any.

GARRY M. DEPAOLI
GEOPHYSICIST, B.Sc.

AUGUST 20, 1978
108 Ranch, B.C.

CERTIFICATION

I Dennis F. Morrison, of the Village of Washago, in the Province of Ontario, HEREBY CERTIFY AS FOLLOWS:

1. That I have attended the University of Waterloo for 2 years enrolled in the Faculty of Science.

2. That I was employed with Bell Canada as an electronic technician during the period 1964 to 1967.

3. That I was employed with McPhar Geophysics as an Induced Polarization Operator from 1967 to 1970.

4. That I have operated as an independent Induced Polarization Contractor from 1970 to the present.

5. That I have induced polarization operating experience in Newfoundland, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, British Columbia, Yukon and Northwest Territories, Alaska and the Republic of Panama.

6. That I have no interest directly or indirectly in the Shred Claim Group nor do I expect to receive any.

DENNIS F. MORRISON

AUGUST 20, 1978
Washago, Ontario.

ASSESSMENT DETAILS

WORK SUMMARY

12.6 miles (20km) of induced polarization / resistivity surveying.
Dates Worked; July 16 to July 29, 1978.

PERSONNEL

Dennis F. Morrison	IP Contractor, Morrison IP Surveys P.O. Box 418, Gravenhurst, Ontario P0C 1G0
Garry M. DePaoli	Consulting Geophysicist 108 Ranch, Comp. 162, RR#1, 100 Mile House, B.C. V0K 2E0
Ivan Einarson	Geophysical Assistant Box 861 Bracebridge, Ontario
Robert Thaler	Geophysical Assistant Box 2206 Gravenhurst, Ontario

PART B

GEOCHEMICAL DEEP OVERBURDEN DRILLING SURVEY

TABLE OF CONTENTS - PART B

SUMMARY AND RECOMMENDATIONS

The SHRED deep overburden sampling program has outlined a Cu anomaly at the interface between bedrock and overburden having dimensions of 180 m (N-S) X 250+m (E-W). This anomaly is slightly larger than a comparable Cu anomaly defined by the soil survey. Significant showings of Cu sulphides have been observed in bedrock and in coarse fraction of the deep overburden samples within the study area. The geochemical anomaly is also complemented by an IP and magnetic anomaly. Consequently, the Cu anomaly is interpreted to reflect the surface expression of a sulphide mineralized system having economic potential which should be tested by several drill holes. Additional deep overburden sampling should be contemplated in areas having coincidental soil Cu, IP, and magnetic anomalies elsewhere on the SHRED property.

INTRODUCTION

Samples were analyzed for Mo, Cu, and Ni in the plus 80-mesh and minus 80-mesh fractions of 29 deep overburden samples. Data were plotted on a logarithmic histogram (Figs.3-8) and contour intervals were chosen on a subjective evaluation of population groupings. Analytical values are summarized in Appendix 2.

Deep overburden samples were collected along 4 lines (202E, 207E, 215E, and 220E) to complete a more detailed

TABLE 1

Summary of Anomaly threshold values determined by subjective examination of histograms on Figs. 3-8 in deep overburden samples, SHRED Property.

Element	Size Fraction	Anomaly Threshold
Mo	minus 80	> 3 ppm
Cu	minus 80	> 700 ppm
Ni	minus 80	> 500 ppm
Mo	plus 80	> 7 ppm
Cu	plus 80	> 300 ppm
Ni	plus 80	> 400 ppm

study of an area sampled in 1977 (Fig.9). Sample spacing was 200 feet (61 metres). Sample depths are given on Fig.10.

SAMPLE COLLECTION PROCEDURE

The deep overburden sampling method involves the use of a light, portable, gasoline operated drill. A piston-type stainless steel sampler, with retractable point is attached to a series of steel rods which are driven through the overburden to the desired depth. The point is then retracted by turning the string of rods on surface which leaves the bottom of the sample tube open. The sampler is then driven into the material to be sampled for eight inches. The rods and the sampler are then extracted from the hole using a 5-ton vertical lift jack. Once extracted the sampler is broken down with pipe wrenches and the sample is placed in appropriately marked Kraft bags. At the SHRED property all holes were vertical, and samples were collected at the overburden bedrock interface. If some doubt existed concerning the critical interface one or more additional holes were drilled to ascertain the depth to bedrock.

The contractor was Bema Industries Ltd. of 19790 - 88th Avenue, R.R. #4, Langley, B.C., V3A 4P7 (contract attached). Personnel: Bema - 2 operators.

Samples were gently disaggregated and passed onto an 80-mesh screen. The plus 80-mesh fraction was pulverized in a shatter box prior to analysis. Analysis for Cu and Ni of both the plus 80-mesh and minus 80-mesh was undertaken.

TRACE METAL ANALYSIS

The following report by Acme Analytical Laboratories Ltd. outlines the procedure used to determine acid soluble Mo, Cu, and Ni in geochemical samples.

ACME ANALYTICAL LABORATORIES LTD.
ASSAYERS & CHEMISTS
6455 LAUREL STREET, BURNABY 2, B.C.
Telephone (604) 299-5242

Geochemical Analysis of Mo, Cu, Pb, Zn, Ag*, Ni, Co, Mn, Bi*, V, Fe, Cd* & Sb*

Sample preparation

Soil samples are dried at 75°C overnight and sieved to -80 mesh.
Rock samples are ground to 98% -100 mesh.

Digestion

A .50 gram sample is digested with diluted aqua regia in hot water bath for one hour and diluted to 10 mls with demineralized water.

Determination

All the above elements are determined by Atomic Absorption from the solution.
* With background correction

TOPOGRAPHY AND VEGETATION

The SHRED property occupies a major 'U'-shaped glacial valley trending east-west. Several large lakes lie to the west of the property, and stream drainage in this region is westward. A major stream drains the northern portion of the claims (from the RED property (Cominco)), joining

Wrede Creek (flowing along a second major 'U'-shaped glacial valley trending north-south) draining the southern half of the property. Wrede Creek flows eastward and is part of the Findlay River system.

Topography is relatively flat. The ground surface is hummocky, and small overburden hills alternate with bedrock exposures. Slopes increase to the north and south and become steep in the mountains.

Vegetation at higher elevations comprises grasslands or thickets of scrub spruce. Tree height and density increase towards the streams, and a forest is developed near the confluence of Wrede Creek and its major tributary draining the RED claims.

RESULTS

Distributions of Mo, Cu, and Ni values in the minus 80-mesh and plus 80-mesh size fractions of the deep overburden samples are shown in Figs.11-16. Anomaly threshold values, indicated on these Figures, are summarized on Table 1. Data from 1977 and 1978 have been combined for purposes of this report.

(a) Minus 80-Mesh Fraction

i) Introduction

Trace metal content of the minus 80-mesh fraction represents a combination of silicate-held and

groundwater deposited components. The probability of 'observing' sulphide minerals in the minus 80-mesh fraction is low, although not impossible. Such an occurrence can be likened to the frequency of observing sulphide mineralization in bedrock outcrops. Typically, sulphide minerals derived from bedrock, are expected to dissolve and disperse laterally from the source. If the concentration of sulphides originally present at the bedrock surface is great, then metal levels in the fine fraction will exceed that in the plus 80-mesh fraction. If sulphide minerals are absent, metal concentrations will be comparable.

ii) Molybdenum (Fig.11)

Three samples contain more than 3 ppm Mo. A maximum value of 7 ppm along L 207E lies to the west of the main Cu anomaly.

iii) Copper (Fig.12)

A copper anomaly exceeding 700 ppm is about 600 feet (180 metres) wide and trends E-W. The anomaly is comprised of 4 samples; the maximum value being 1.28% Cu. Above average values ($\geq$ 300 ppm) outline an area crossing the entire study area, a distance of over 1800 feet (510 metres). A second area of enhanced values lies to the south along L 207E and L 215E.

iv) Nickel (Fig.13)

The Ni distribution appears lithologically controlled, and 4 geochemical units can be inferred (> 600 ppm, 200-400 ppm, 150-200 ppm, > 50 ppm). Highest Cu values coincide with the 150-200 ppm zone.

(b) Plus 10-Mesh Fraction

i) Introduction

Trace metal content of the plus 10-mesh fraction reflects the distribution of trace elements in bedrock. However, because the bedrock-overburden interface is a zone where chemical weathering can be intense, metal levels might be reduced significantly from their original state due to leaching. Sulphide minerals are more susceptible to oxidation and leaching than the silicate fraction and consequently "ore grades" are not to be expected in this type of study, although very high values reflecting sulphide occurrences might be detected locally much as sulphide occurrences can be found in outcrops. Dilution from exotic and barren boulders lying just about the buried bedrock surface may contaminate some deep overburden samples. Data in this section are taken to indicate favourable areas which should be further tested using diamond drilling.

ii) Molybdenum (Fig.14)

Mo contents in the plus 80-mesh fraction are much higher than in the minus 80-mesh fraction. This suggests

leaching of Mo is a significant factor. Highest Mo values commonly are found in areas of low Cu and Ni values. Only the 12 ppm value along L 215E coincides with a Cu anomaly.

iii) Copper (Fig.15)

Cu values in the coarse fraction are somewhat reduced from those levels in the fine fraction. Anomaly size, as defined by the >300 and >200 ppm contours is approximately the same as that found among the minus 80-mesh data. A comparable zone to the 300-400 ppm above average Cu contour on Fig.12 can be outlined using a 110-200 ppm contour on Fig.15. The economic significance of this zone may be enhanced if high pyrite contents are found in underlying bedrock.

iv) Nickel (Fig.16)

The Ni distribution is similar to that found in the minus 80-mesh fraction. A very narrow Ni-rich zone trends NE across the grid area terminated in the northeast by a major Ni-rich unit. Surrounding the zone of very high Ni values is a zone of 100-150 ppm contents.

Ni values in the plus 80-mesh fraction are distinctly lower than those of the minus 80-mesh fraction. This again suggests leaching from bedrock is significant. However, the normal assumption that Ni content of ultramafic rocks is held in silicate minerals, dictates that very little of the element should be tranferred under weathering

conditions expected on the SHRED property. The occurrence of pentlandite several hundred metres to the south suggests that perhaps ultramafic rocks within the study area contain minor amounts of accessory nickel sulphide minerals, and it is this component which has been chemically weathered and transferred to the overburden.

DISCUSSION

Only a very limited portion of the SHRED soil geochemical anomaly described in the 1977 SHRED property assessment report has been examined using the method of deep overburden sampling. The study has extended the size and contrast of the anomalous zone, confirming that portions of a zone of Cu sulphide-rich bedrock have been concealed by barren glacial overburden. The Cu geochemical anomaly appears to coincide with an ultramafic unit of relatively low Ni content (for ultramafics - in the 300-400 ppm range) and very high magnetics. Geological relationships are complex, and the genesis of the Cu mineralization remains in doubt, being associated with the ultramafic host or being due to a contact relationship with a syenite intrusion.

The geochemical study has defined a fairly large zone (128 m (NS) X 250+m (EW) where Cu values in the minus 80-mesh and plus 80-mesh fractions are defined as anomalous (> 700 ppm and > 300 ppm, respectively). Leaching of Mo, Cu, and Ni from bedrock is apparent. The source of the

enhanced metal concentrations in the fines is attributed to the weathering of sulphide minerals in the surficial environment with their subsequent accumulation in the minus 80-mesh fraction at the bedrock-overburden interface. Therefore geochemical Cu anomalies in both sizes fractions are considered to be favourable indications of significant zones of Cu mineralization which might be encountered at depth, once the effects of surface weathering are no longer important. Coincident geochemical and IP anomalies should be given high priority for additional work in 1979. Diamond drill testing of deep overburden anomalies and further deep overburden sampling in areas of soil anomalies are highly recommended.

List of Qualifications - S.J. Hoffman

BSc 1969 - McGill University (Hons Geology and Chemistry)

MSc 1972 - The University of British Columbia (Geochemistry)

PhD 1976 - The University of British Columbia (Geochemistry)

List of Publications

1. Hoffman, S.J., 1972

Geochemical dispersion in bedrock and glacial overburden around a copper property in south central British Columbia.
MSc thesis, unpublished, U.B.C., 209 pp.

2. Hoffman, S.J. and Fletcher, W.K., 1972

Distribution of copper at the Dansey-Rayfield River property, south central British Columbia.
J. Geoch. Expl. 1, 163-180.

3. Hoffman, S.J. and Waskett-Myers, M.J., 1974

Determination of molybdenum in soils and sediments with a modified zinc dithiol procedure.
J. Geoch. Expl. 3, 61-66.

4. Hoffman, S.J., 1974

Pebble Cards - A record of the coarse fraction of stream sediments for geochemical exploration.
J. Geoch. Expl. 3, 387-388.

5. Hoffman, S.J. and Fletcher, W.K., 1976

Reconnaissance lake sediment geochemistry over the Nechako Plateau, B.C.
In press, J. Geoch. Expl.

6. Hoffman, S.J., 1977

Talus fine sampling as a regional geochemical exploration technique in mountainous regions.
J. Geoch. Expl. 1, 349-360.

7. Hoffman, S.J., Arnold, P.M. and Zink, E.W., 1976

Rapid field determination of copper by anodic stripping voltammetry (ASV).
In press, Encyclopedia of Earth Sciences

8. Hoffman, S.J., 1976

Lake sediment geochemistry.
In press, Encyclopedia of Earth Sciences.

9. Hoffman, S.J. and Fletcher, W.K., 1976

Detailed lake sediment sampling of anomalous lakes on the Nechako Plateau, central British Columbia - Comparison of trace metal distributions in Capoose and Fish Lakes.
In preparation.

10. Hoffman, S.J. and Fletcher, W.K., 1976

Sequential extraction of copper, zinc, iron, manganese and molybdenum from lake sediments.
In preparation.

A P P E N D I X 1A

APPENDIX 1A

Statement of Costs - 23 June - 19 July, 1978
SHRED Claims #1-4 - Group One

1. Grid Preparation

Contractor - Bema Industries Limited (2-man crew)
25.1 km, 23 June-3 July,1978

Direct costs -		
136.5 hrs @ $28/hr =	$3,822	
Indirect costs (transit rental, chain saw, accommodation and subsistence, truck)		
12 days @ $62/day =	$744	
Helicopter support - Northern Mountain Helicopters(NMH) - 206B		
1.5 hrs @ $360/hr(fuel incl.)=	$540	
	$5,106	
Apportionment of costs to Group One		
17.7 line km in Group One / 25.1 line km in total survey x $5,106 =		$3,625

2. Geophysical Survey (Induced Polarization)

Contractor - D.F. Morrison (3-man crew)
6.4 line km, 15-19 July, 1978

5 operating days @ $450/day =	$2,250	
1 travel day @ $225/day =	225	
Accommodation and subsistence 3 man days @ $20/man day =	360	
Helicopter support - NMH Jet Ranger - 206B 1.5 hrs @ $360/hr(fuel incl.)=	540	3,375

3. Report Preparation 200

Plus carried credit from SHRED #1 900

Assessment Work TOTAL $8,100

DENNIS F. MORRISON

INDUCED POLARIZATION SURVEYS

BP Minerals Limited
RECEIVED
AUG 3 1978
Vancouver, B.C.

B.P. Minerals LTD
Suite 405 , 1199 West Pender St
Vancouver B.C.
V6E 2R1

In account with Dennis F Morrison P.O . Box 418
Gravenhurst Ont P0C 1G0

Re; Induced Polaization Survey Shred and Nik Claims,
Johanson Lake Area B.C.

Operating Days	18 @ $450.00	8100.00
Travel Days	6 @ 225.00	1350.00
Sub total Basic Fees		9450.00
Mobilization Expenses		936.77
Plus 10% Handling		93.68
Net Due & Payable upon reciept of Geophysical Report		10480.45

Yours Truly

Dennis .F.Morrison

APPROVED FOR PAYMENT
CHARGE 8e035-428 $9450
DATE AUG 23 1978 432-1030.45
$10,480.45

BEMA INDUSTRIES LTD. | 19790-88 AVENUE, RR 4 LANGLEY, BC V3A 4P7 (604)530-7772

3 August 1978

B.P.Minerals Ltd.
405 - 1199 West Pender St.
Vancouver, B.C. V6E 2R1

BP Minerals Limited
RECEIVED
AUG 9 1978
Vancouver, B.C.

Attention: Mr. C. Bates

Re: Linecutting & Overburden Sampling
Nik & Shred Projects

Mobilization and demobilization:
44 hrs. @ $28.00/hr.....$1,232.00
12 hrs. @ $12.00/hr..... 144.00

Linecutting:
183½ hrs. @ $28.00/hr..... 5,138.00

Overburden Drilling:
67 hrs. @ $40.00/hr..... 2,680.00

Equipment Supplied:
Transit - 16 dys @ $4.50/dy..... 72.00
Truck - 28 dys @ $10.00/dy..... 280.00
Mileage - 1808m @ $0.25/m..... 452.00
2 chainsaws - 16 dys @ $6.00/dy. ea..... 192.00
1 chainsaw - 16 dys @ $4.00/dy..... 64.00
Survey equipment - 16 dys @ $10.00/dy..... 160.00
2-man camp - 26 dys @ $12.50/dy..... 325.00

Lost/Damaged Overburden Drill Equipment:
6 rods @ $20.00..... 120.00
3 samplers medium @ $174.80ea..... 524.40

Mobilization of 2 drills from Dease Lk. by
Yukon Air ($462.00)..... 231.00

Disbursements:
12 rolls flagging @ $1.25ea.....$15.00
5 rolls topo thread @ $5.50ea..... 27.50
3 can spray paint @ $2.50ea..... 7.50

Mr. I. Johnson-expense account.....~~$553.46~~ ~~$603.46~~ 483.46 533.46

15% Service Charge..... ~~90.52~~ 80.02

~~$693.98~~ ~~613.48~~ ~~693.98~~ 613.48

Cont'd

Total of invoice..... ~~$12,308.38~~ $12,227.88

This is Our Account,
BEMA INDUSTRIES LIMITED

per: M J Bilay

MJB/jb

APPROVED FOR PAYMENT $12,227.88
CHARGE 80035 - 428
DATE AUG 23 1978 INTLS

A P P E N D I X 1B

APPENDIX 1B

Statement of Costs - 23 June - 19 July, 1978
SHRED Claims #2, #3 - Group Two

1. Grid Preparation
   Contractor - Bema Industries Limited (2-man crew)
   (details in Appendix 1A)
   7.4 line km in Group Two
   Apportionment of costs to Group Two
   $\frac{7.4 \text{ line km}}{25.1 \text{ line km}} \times \$5,106 =$ $1,481

2. Geochemical Survey
   Contractor - Bema Industries Limited (2-man crew)
   29 deep overburden samples - 4,5,6, July, 1978

Direct costs		
30.5 hrs @ $40/hr	$1,220	
Indirect costs		
Accommodation and subsistence	140	
Equipment consumed		
2-sampler, 1-rod	370	
Mobilization/demobilization share	250	
Helicopter support NMH - 206B Jet Ranger		
1 hr @ $360/hr(fuel incl.)	360	
Sample analysis (Acme Analytical Lab.Ltd.)		
58 samples @ $3.75/sample	217	2,557

3. Report Preparation 300

Assessment Report TOTAL $4,338

APPENDIX 1C

APPENDIX 1C

Statement of Costs - 20-29 July, 1978
SHRED #1-4 - Group One, Group Two

Geophysical survey (Induced Polarization)
Contractor - D.F. Morrison
line km - 14.08, 20-29 July, 1978
10 operating days @ $450/day = $4,500
1 travel/camp day @ $225 = 225

Accommodation and subsistence
3 men x 10 days x $20/day = 600 $5,325

Helicopter support = NMH 206B Jet Ranger
2 hrs @ $360/hr 720

Total $6,045

Apportionment of assessment work
7.04 line km per Group

Group One - $3,022

Group Two - $3,023

A P P E N D I X 2

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis
6455 Laurel St., Burnaby, B.C. V5B 3B4
Tel: 299-5242

TO B. P. Minerals Ltd.,
405 - 1199 W. Pender St.,
Vancouver, B. C. V6E 2R1

File No. 8469
Type of Samples Overburden
Disposition

ANALYSES CERTIFICATE

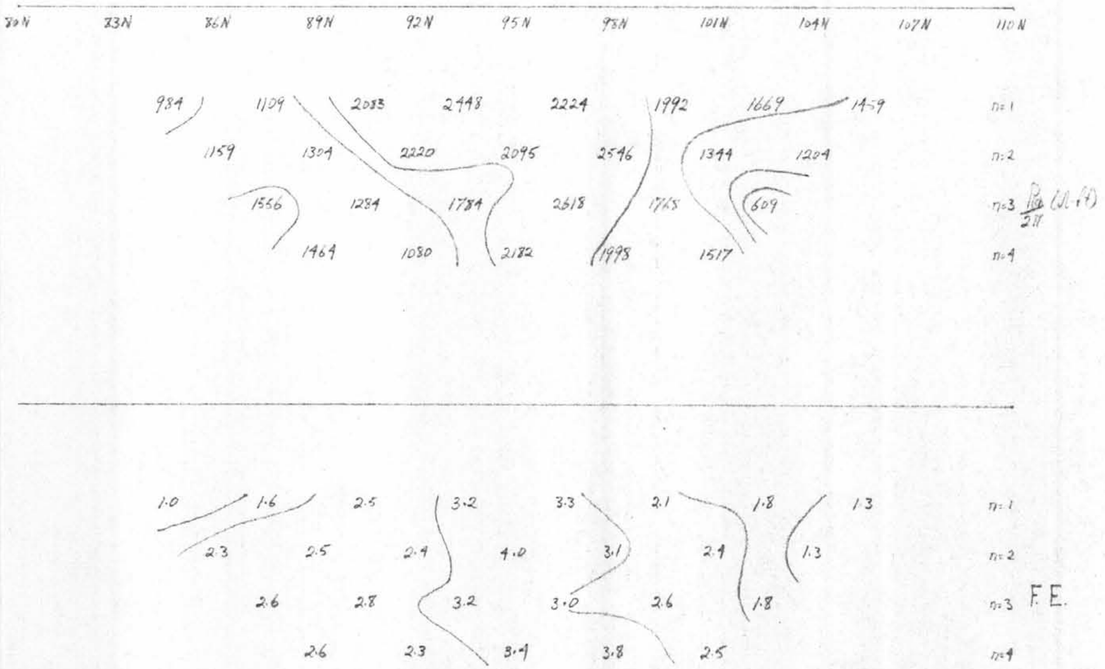
			-80 mesh					+80 mesh						
No.	Sample		Mo	Cu	Ni			Mo	Cu	Ni				No.
1 01	SHRED - 1		1	110	29			5	16	21				01
02	2		2	146	52			11	134	50				02
03	3		1	136	605			1	108	675				03
04	4		1	132	27			3	69	23				04
05	5		2	335	52			4	154	62				05
06	6		1	76	27			1	45	24				06
07	7		1	108	39			7	78	37				07
08	8		1	265	26			8	152	27				08
09	9		7	340	58			5	114	26				09
10	10		4	300	52			3	118	40				10
11	11		1	167	38			1	66	28				11
12	12		1	87	17			1	49	16				12
13	13		1	152	54			2	58	47				13
14	14		1	440	260			1	460	325				14
15	15		1	145	27			4	88	31				15
16	16		N.	S.										16
17	17		N.	S.										17
18	18		2	360	170			2	146	92				18
19	19		4	380	168			5	168	106				19
20	20		1	130	196			2	89	148				20
21	21		1	380	210			2	124	116				21
22	22		1	703	385			12	385	330				22
23	23		3	2600	158			3	1720	116				23
24	24		1	475	146			3	190	132				24
25	25		1	62	650			1	62	600				25
26	26		1	54	885			2	28	745				26
27	27		2	70	895			3	68	805				27
28	28		2	300	305			2	250	325				28
29	29		1	565	230			3	240	134				29
30	30		1	280	162			1	82	78				30
31	SHRED -31		1	220	102			2	64	64				31
32														32
33														33
34														34
35														35
36														36
37														37
38														38
39														39
40														40

BP Minerals Limited
RECEIVED
JUL 14 1978
Vancouver, B.C.

All reports are the confidential property of clients.
All results are in parts per million.

DATE SAMPLES RECEIVED July 10, 1978
DATE REPORTS MAILED July 13, 1978
ANALYST

LINE 120 E

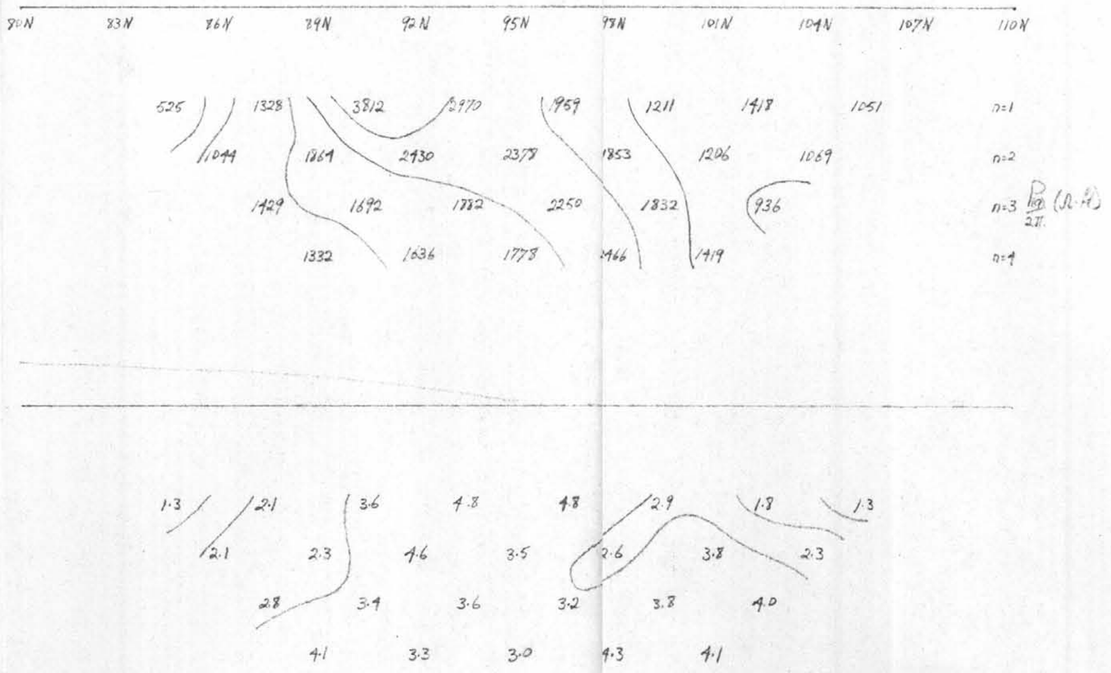


B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 - 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 18, 1978.
OPERATOR : D. F. MORRISON

LINE 120 E

FIGURE 3 (a)

LINE 125 E

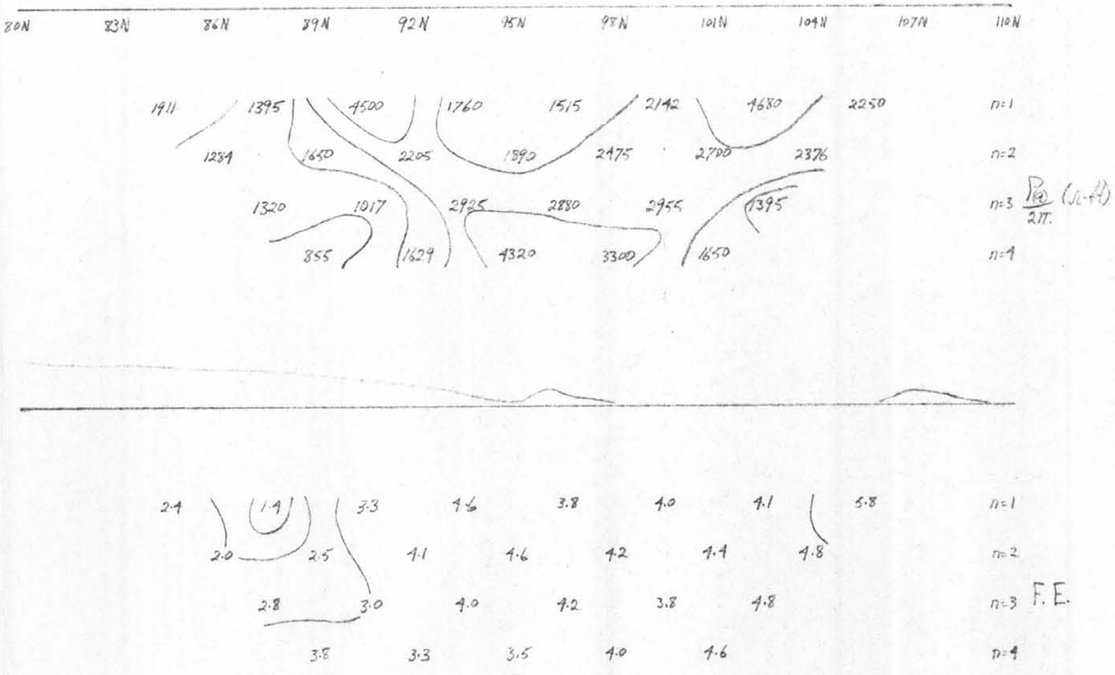


B.P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 17, 1978.
OPERATOR : D. F. MORRISON

LINE 125 E

FIGURE 3(6)

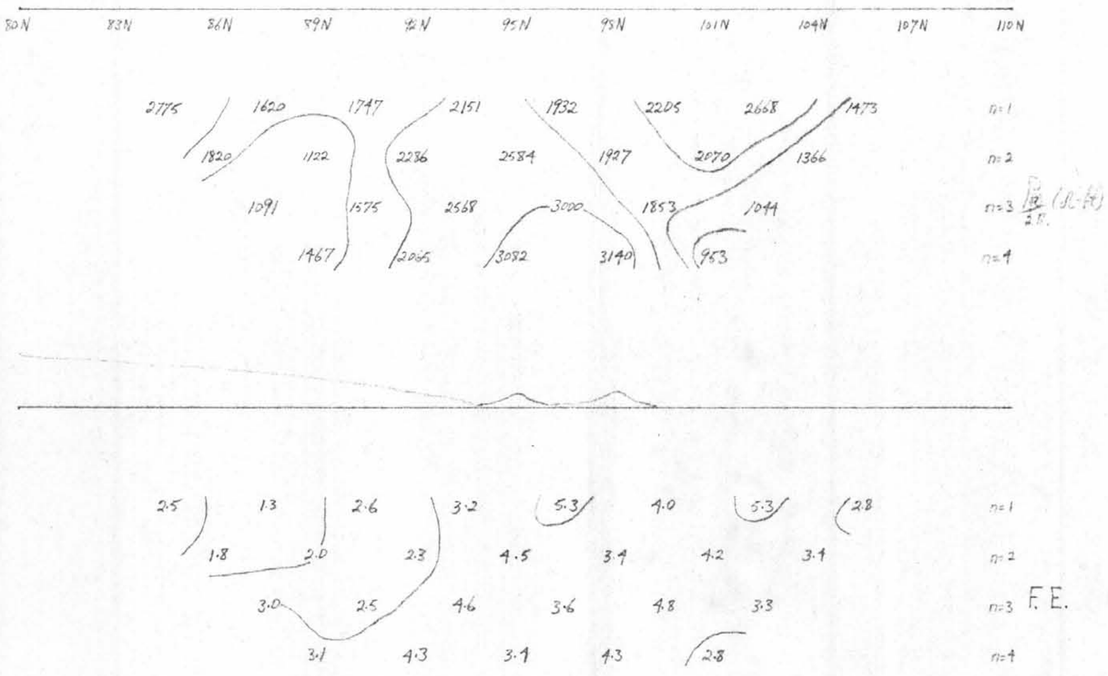
LINE 130 E



B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 17, 1978.
OPERATOR : D. F. MORRISON

LINE 130 E

FIGURE 3(c)



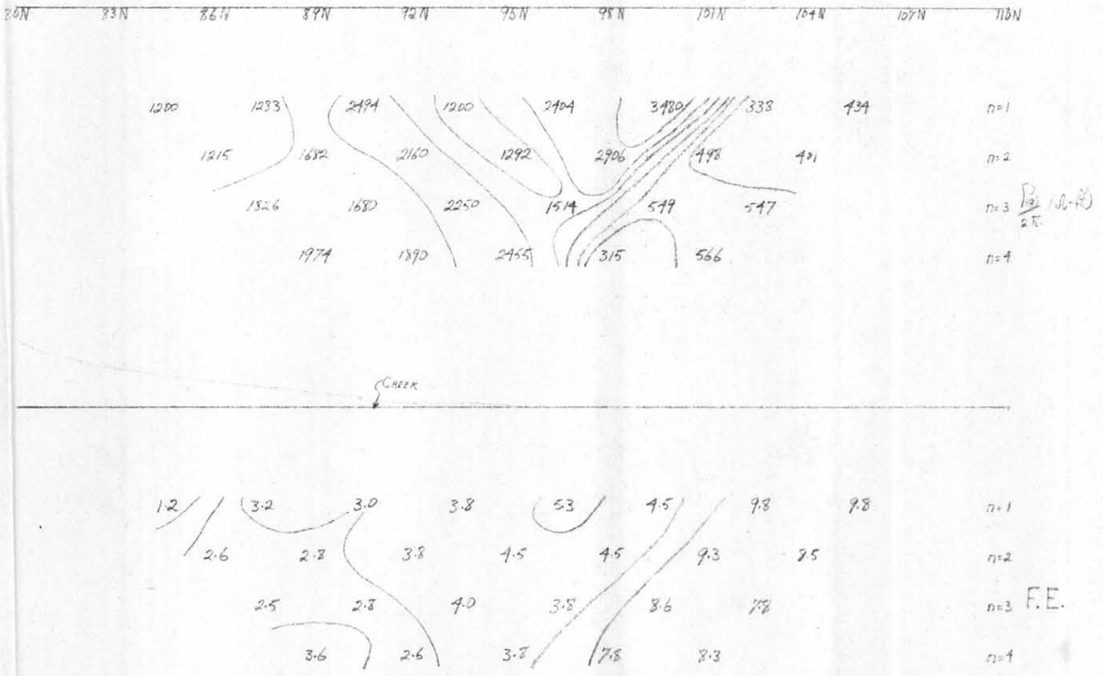
LINE 135 E

B P MINERALS LTD.
SHIRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 & 0.3 HTZ
SCALE : 1" = 300'
DATE : JULY 17, 1978.
OPERATOR : D. F. MORRISON

LINE 135 E

FIGURE 3(d)

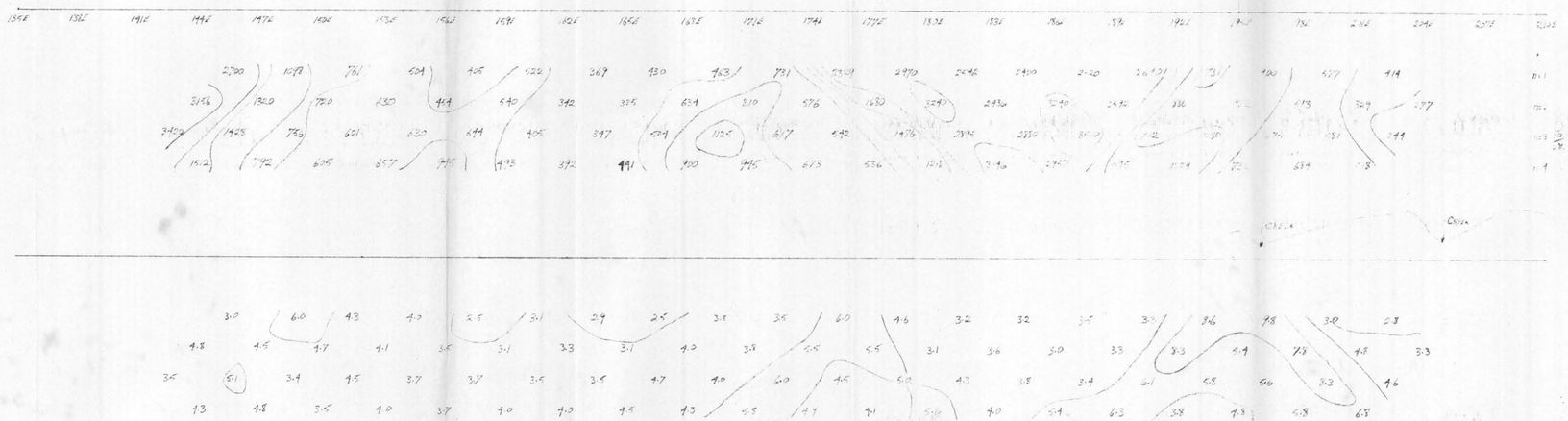
LINE 140 E



B.P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 & 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 16, 1978.
OPERATOR : D. F. MORRISON

LINE 140 E

FIGURE 3(c)

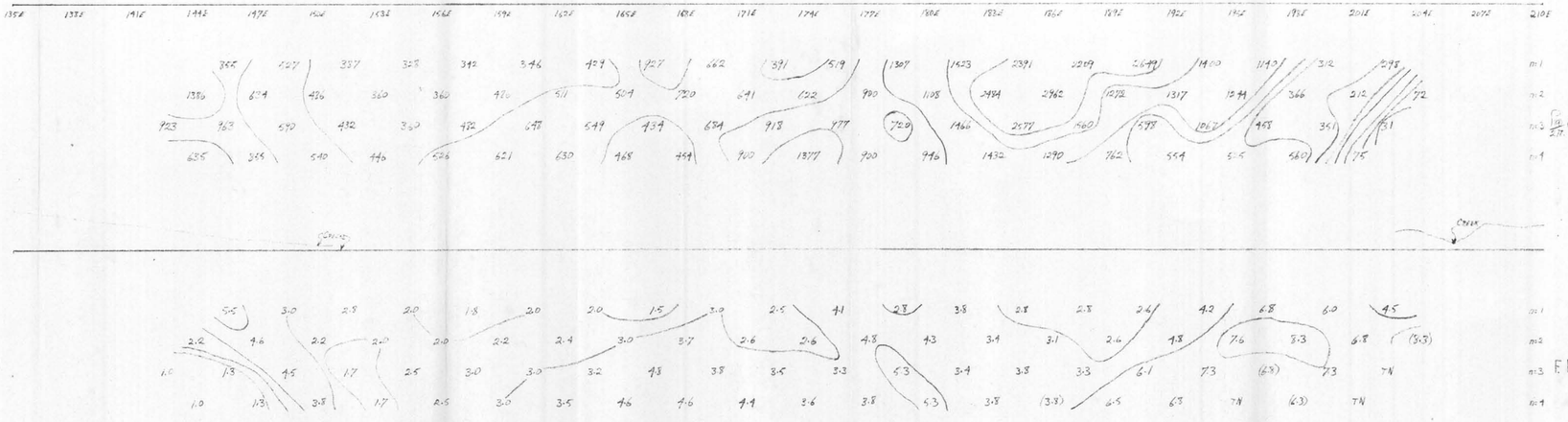


B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 - 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 19, 1978.
OPERATOR : D. F. MORRISON

LINE 150 N

FIGURE 3(f)

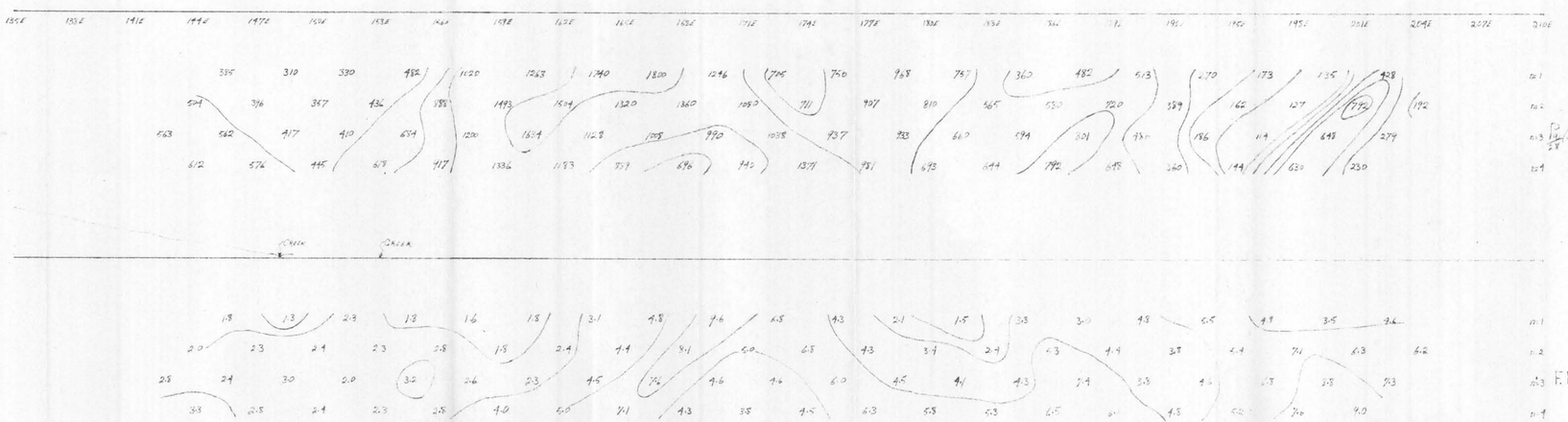
LINE 155 N



B.P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 - 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 24, 1978.
OPERATOR : D. F. MORRISON

LINE 155 N

FIGURE 3 (9)

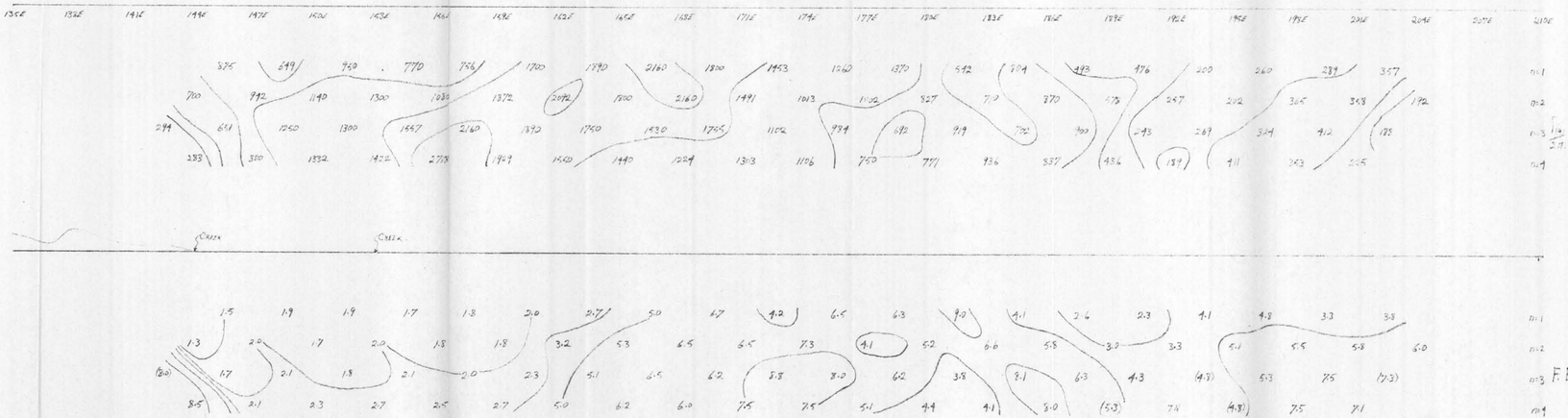


B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 - 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 20, 1978.
OPERATOR : D. E. MORRISON

LINE 160 N

FIGURE 3(a)

LINE 765 N

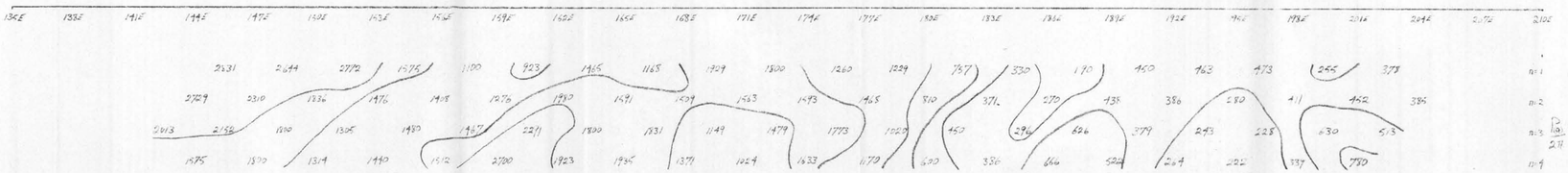


B. R. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 & 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 21, 1978.
OPERATOR : D. F. MORRISON

LINE 165 N

FIGURE 3(c)

LINE 170 N

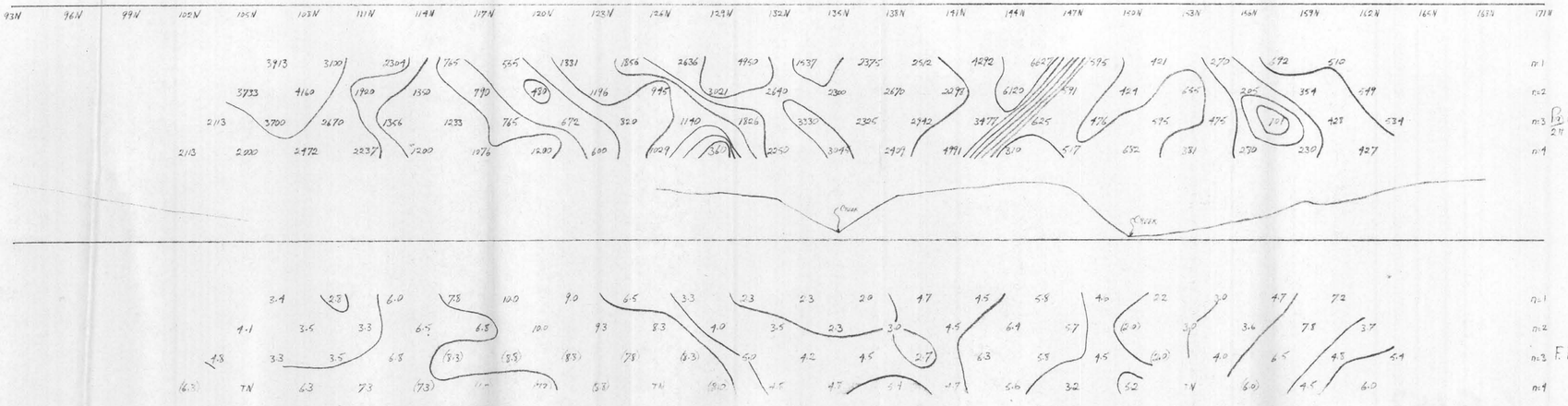


B.P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 22, 1978
OPERATOR - D. F. MORRISON

LINE - 170 N

FIGURE 3(f)

LINE 207 E

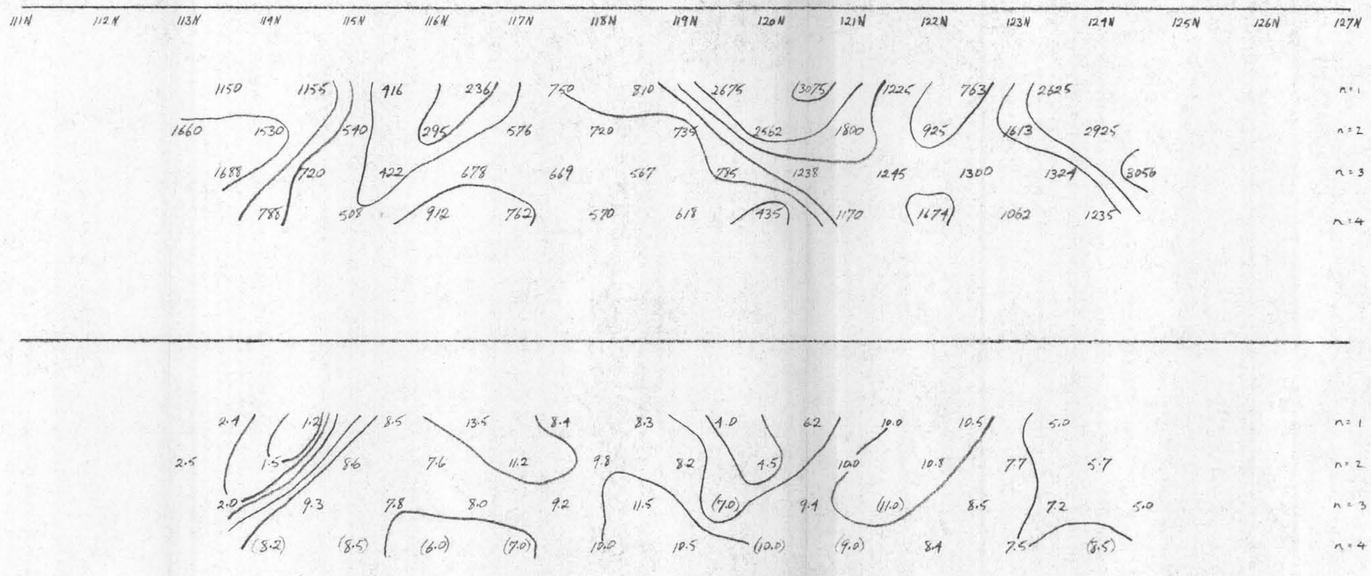


B.P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 28, 1978.
OPERATOR : D. F. MORRISON

LINE 207 E

FIGURE 3(a)

LINE 207 E.

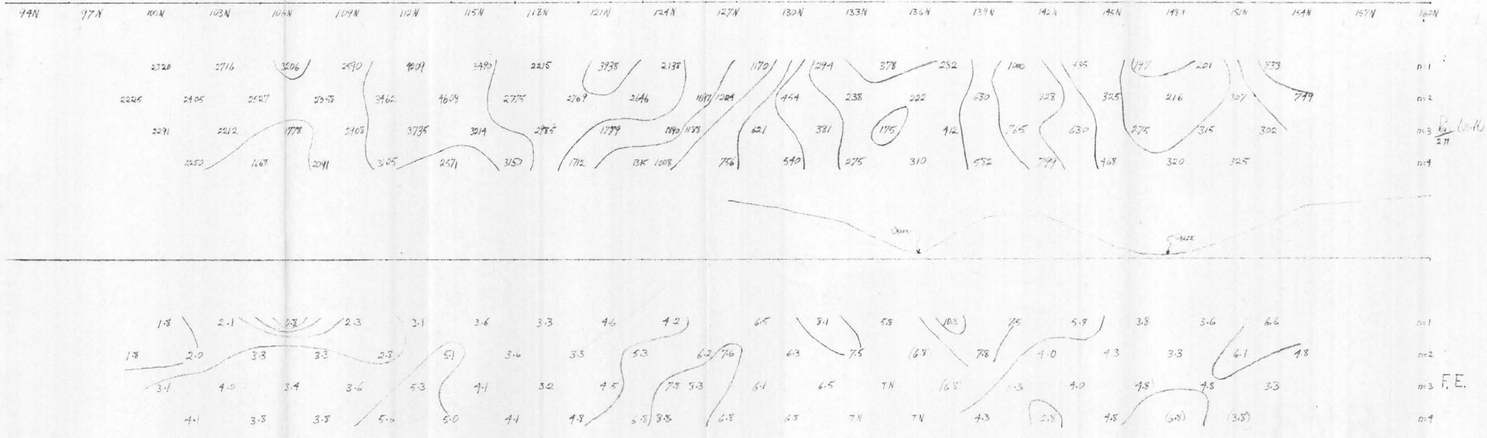


B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 100'
DATE : JULY 29, 1978
OPERATOR : D. F. MORRISON

LINE 207 E

FIGURE 3(2')

LINE 215E



NOTE: Line change errors
station # 126 duplicated
station # 121 omitted

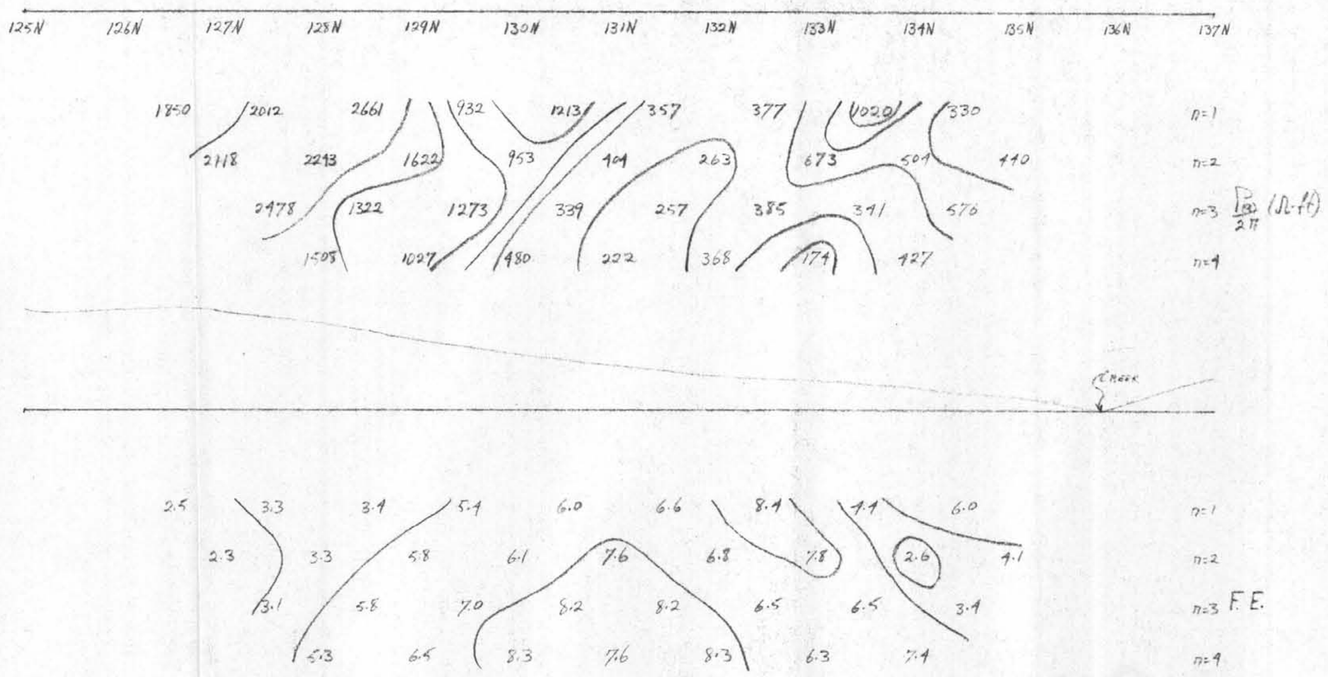
B. P. MINERALS LTD.
SHRED CLAIMS
TOMANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 + 0.3 HTZ.
SCALE : 1" = 300'
DATE : JULY 27, 1978.
OPERATOR : D. F. MORRISON

LINE 215 E

FIGURE 3(L)

6843
FIG. 3(L)

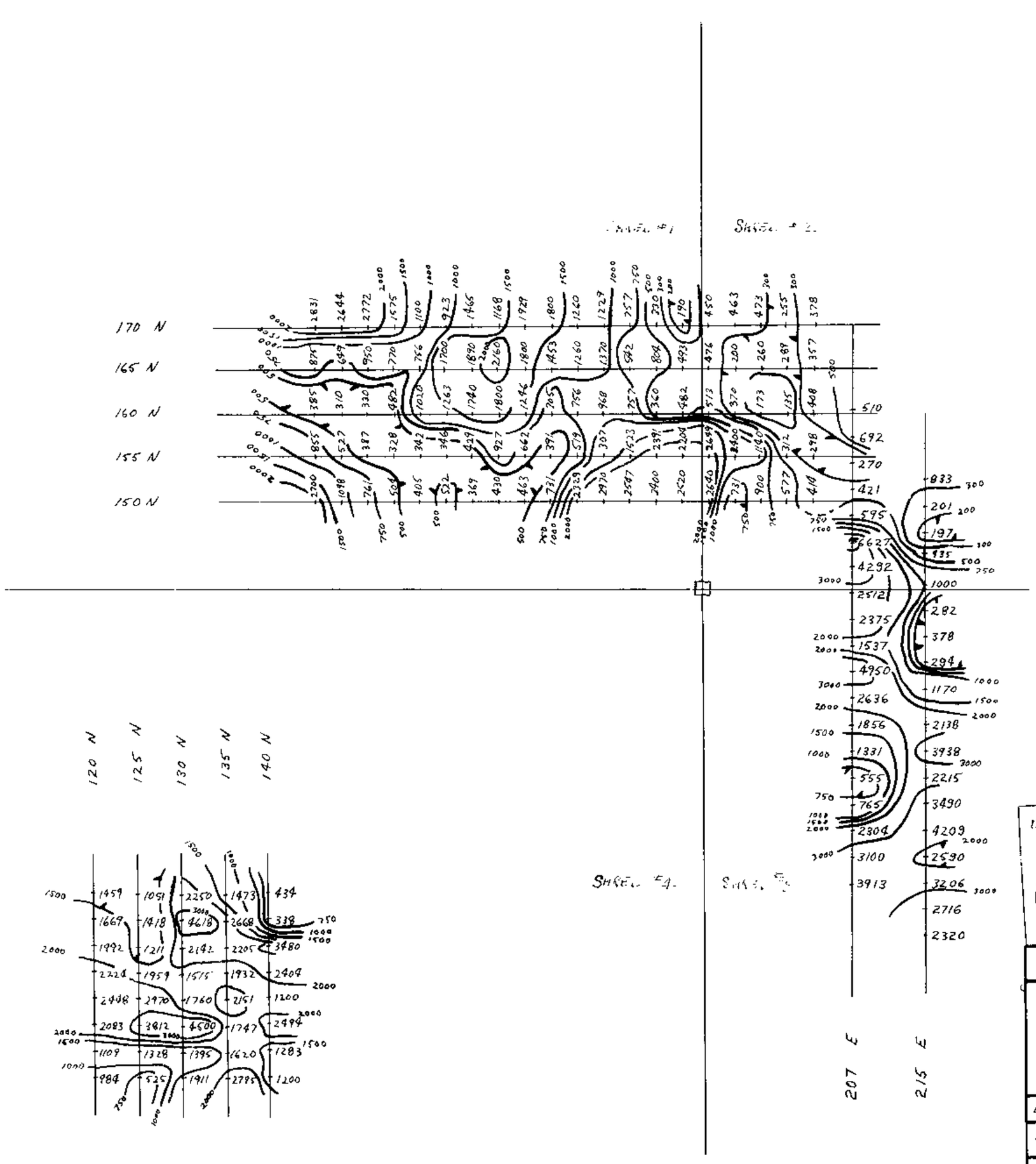
LINE 215 E.



B. P. MINERALS LTD.
SHRED CLAIMS
JOHANSON LAKE AREA, B.C.
INDUCED POLARIZATION SURVEY
DIPOLE - DIPOLE ARRAY
FREQUENCY DOMAIN @ 5.0 ~ 0.3 HTZ.
SCALE : 1 - 100'
DATE : JULY 29, 1978.
OPERATOR : D. F. MORRISON

LINE 215 E

FIGURE 3(c)



LEGEND

CUT LINE

CLAIM LINE

LOCATION POST

APPARENT RESISTIVITY IN $\rho_a/2\pi$ OHM FEET

RESISTIVITY CONTOUR

CONTOUR INTERVAL - SEMI LOGARITHMIC

200, 300, 500, 750, 1000, 1500, 2000, 3000

P-660 FREQUENCY DOMAIN I.P.

DIPOLE - DIPOLE ARRAY $a = 300'$ $N = 1$

0.3 AND 5.0 HERTZ

OPERATOR D.F. MORRISON

MINERAL RES. ASSESSMENT REPORT

6843

BP MINERALS LIMITED

SHRED CLAIMS

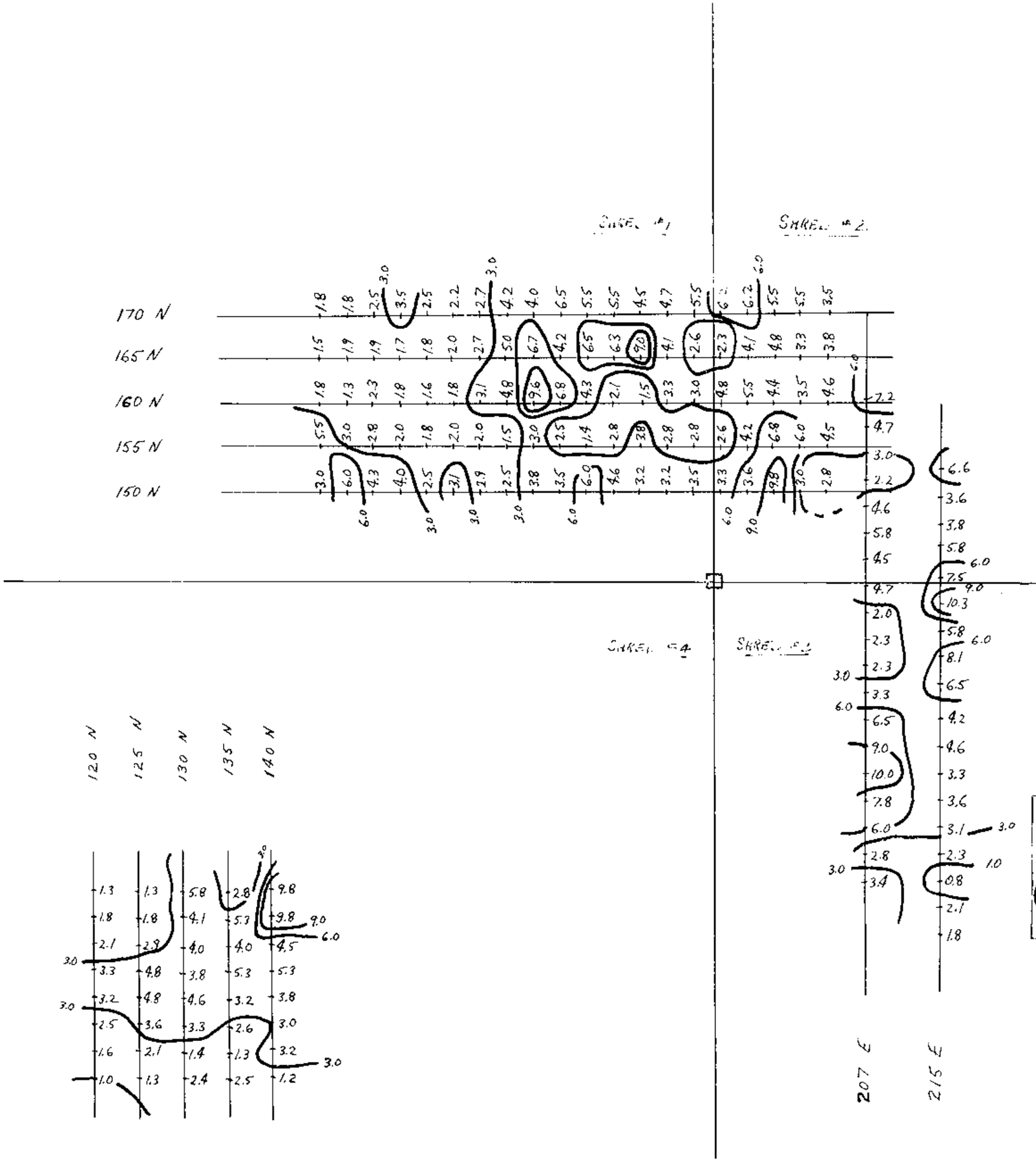
PLAN RESISTIVITY N=1

DRAWN BY GMD	DATE AUG. 78	FIGURE 4

SCALE 1"=1000'

500' 0 1000'

TO ACCOMPANY 1978 GEOPHYSICAL REPORT ON THE SHRED CLAIMS BY GARRY M. DEPAOLI



N

LEGEND

- CUT LINE
- CLAIM LINE
- LOCATION POST
- PERCENT FREQUENCY EFFECT (3.1)
- PFE CONTOUR (3.0)
  CONTOUR INTERVAL
  1.0, 3.0, 6.0, 9.0

P-660 FREQUENCY DOMAIN I.P.
DIPOLE DIPOLE ARRAY a = 300' N = 1
0.3 AND 5.0 HERTZ
OPERATOR P.F. MORRISON

ASSESSMENT REPORT
NOT TO BE REMOVED
6843

BP MINERALS LIMITED

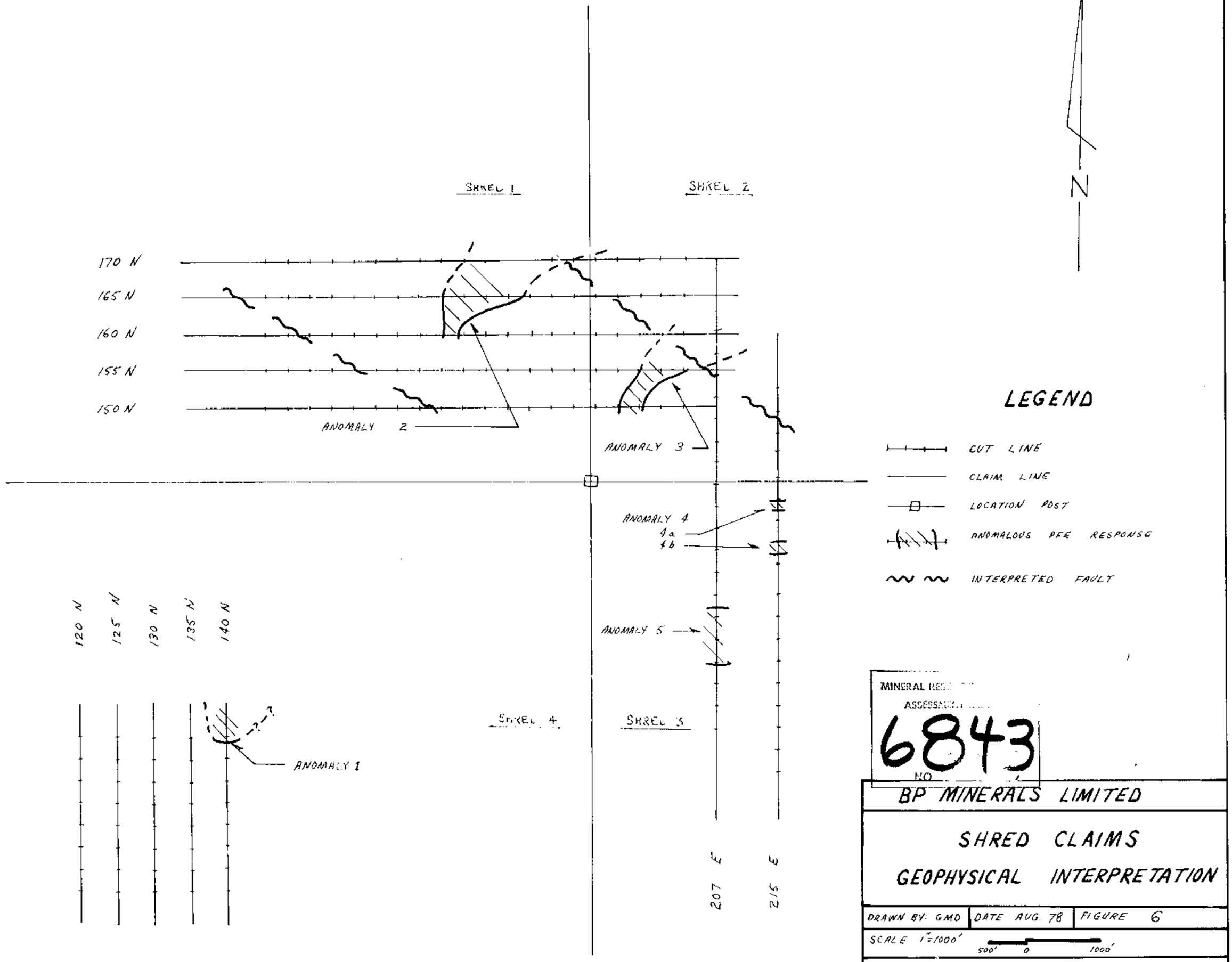
SHRED CLAIMS

PLAN P.F.E. N = 1

DRAWN BY GMO	DATE AUG. 78	FIGURE 5

SCALE 1"=1000'
500' 0 1000'

TO ACCOMPANY 1978 GEOPHYSICAL REPORT ON THE SHRED CLAIMS BY GARRY M. DEPAOLI.



BP MINERALS LIMITED

SHRED CLAIMS
GEOPHYSICAL INTERPRETATION

DRAWN BY: GMD	DATE AUG. 78	FIGURE 6

SCALE 1"=1000' 500' 0 1000'

TO ACCOMPANY 1978 GEOPHYSICAL REPORT ON THE SHRED CLAIMS BY GARRY M. DEPAOLI

FIG. 3

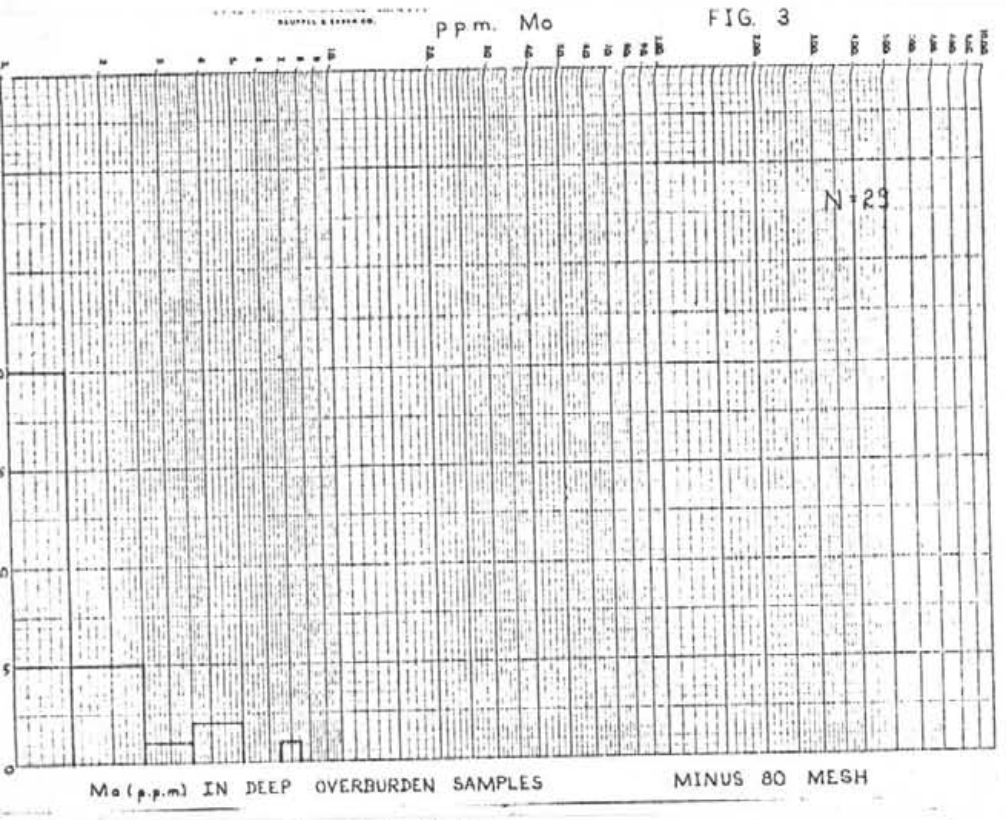


FIG. 6

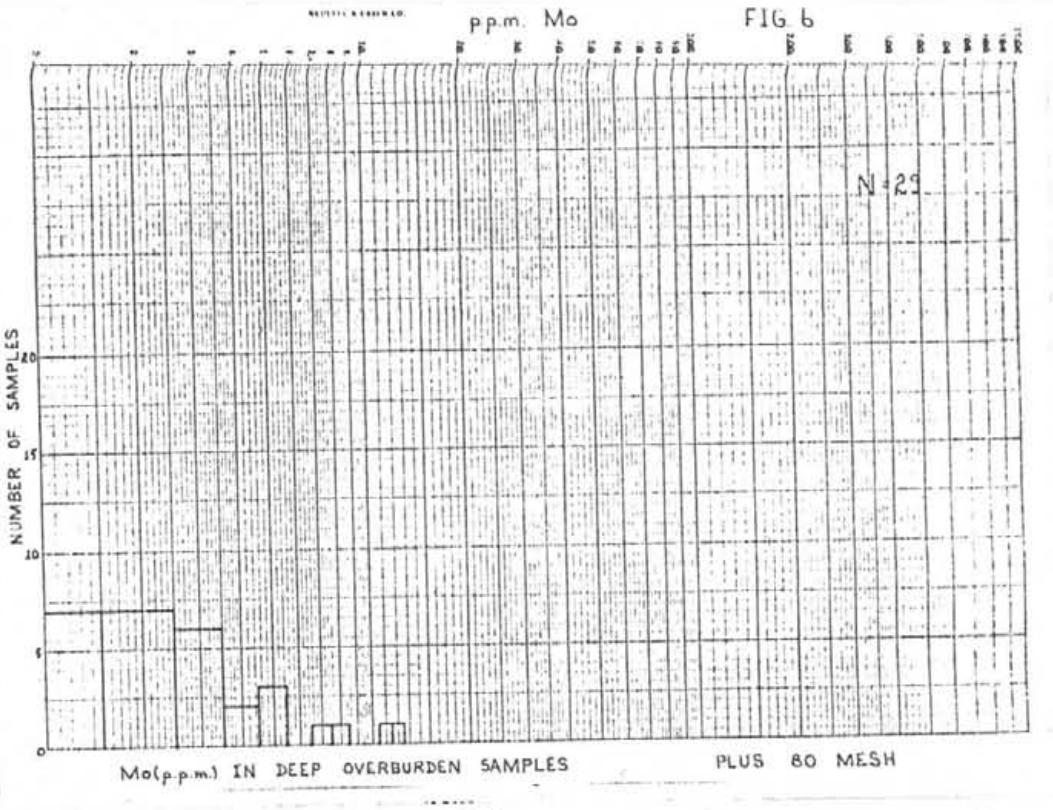


FIG. 4

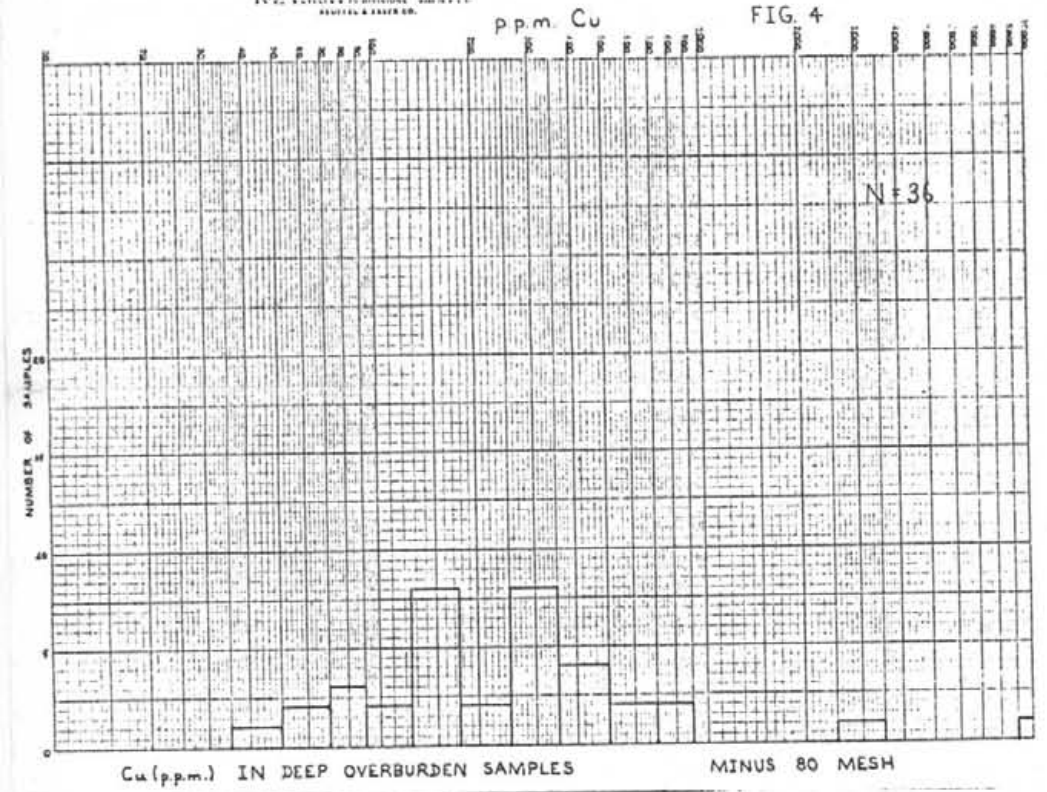


FIG. 7

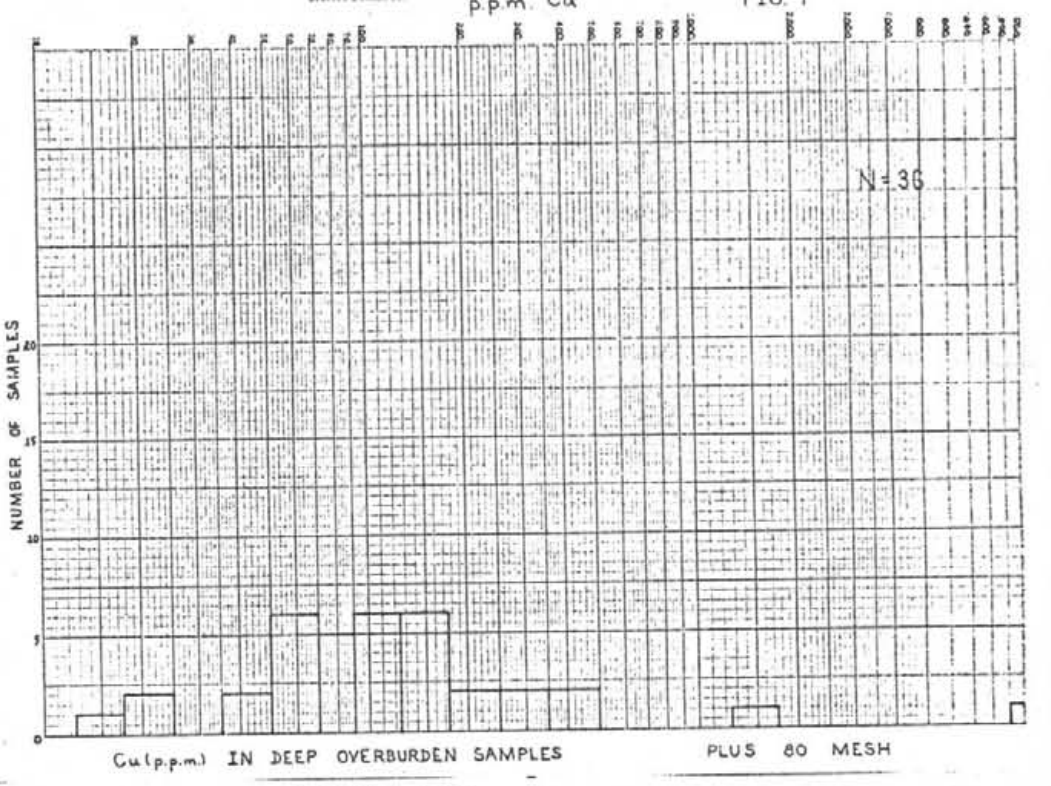
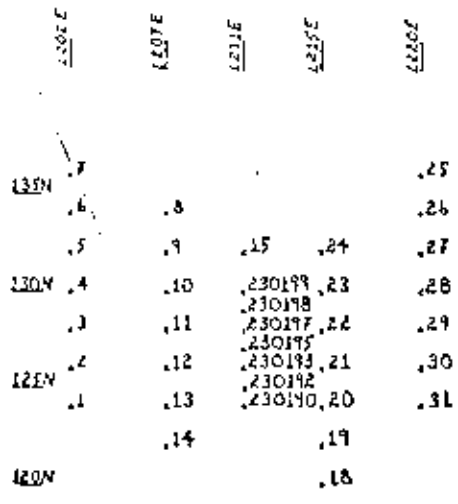


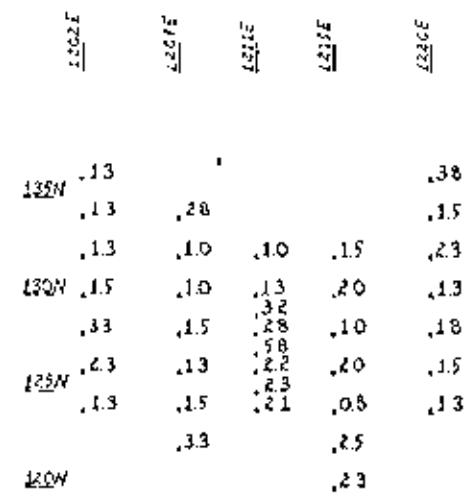
FIG. 5

FIG. 8



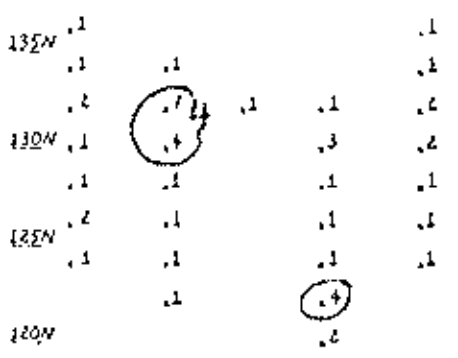
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 9: DEEP OVERBURDEN SAMPLE LOCATION



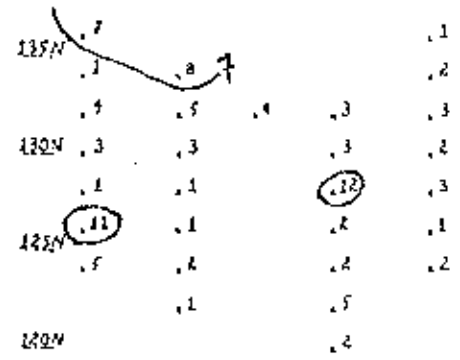
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 10: DEEP OVERBURDEN SAMPLE DEPTH



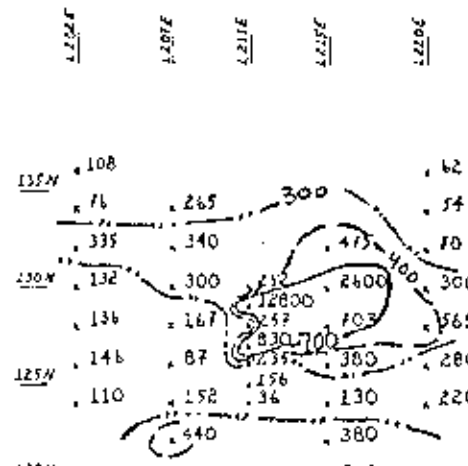
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 11: Mo(ppm) IN DEEP OVERBURDEN SAMPLES
MINUS 80 MESH FRACTION



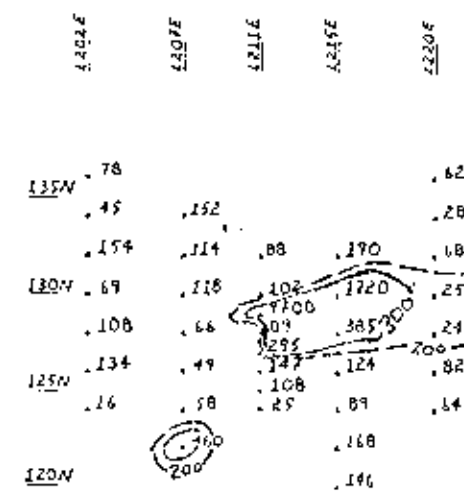
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 14: Mo(ppm) IN DEEP OVERBURDEN SAMPLES
PLUS 80 MESH FRACTION



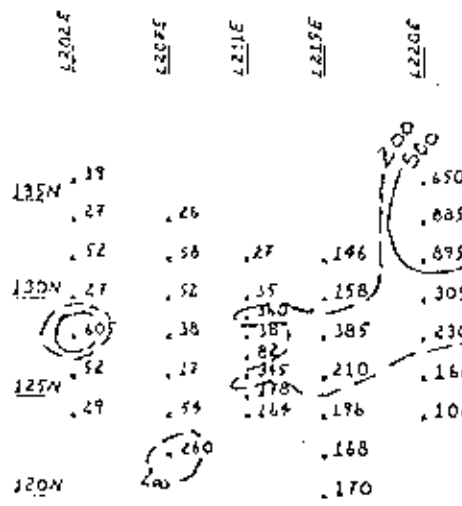
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 12: Cu(ppm) IN DEEP OVERBURDEN SAMPLES
MINUS 80 MESH FRACTION



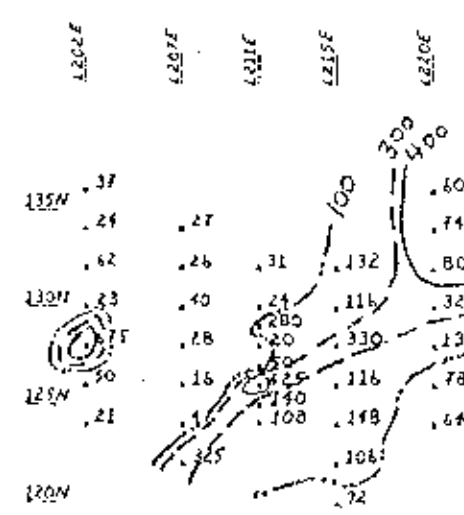
SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 15: Cu(ppm) IN DEEP OVERBURDEN SAMPLES
PLUS 80 MESH FRACTION



SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 13: Ni(ppm) IN DEEP OVERBURDEN SAMPLES
MINUS 80 MESH FRACTION



SHRED PROPERTY
BP MINERALS LIMITED
NTS 94D/9
SCALE 1"=800 ft.
1cm=99 m.
SEPT, 1978

FIG 16: Ni(ppm) IN DEEP OVERBURDEN SAMPLES
PLUS 80 MESH FRACTION