2545

GEOPHYSICAL REPORT

on portions of the

Ash,
Jam, Nola, Q, Car
Claims
"Ashnola Property"
owned by

PRISM RESOURCES LTD.

and situated in the

McBrideCreek-Ashnola River area, Osoyoos M.D.
Southern British Columbia

Latitude 49°07'N:Longitude 120°20'W
N.T.S. 92 H/1 W

Work completed between May 11 and July 18, 1970

Report by

D.R. Cochrane, P.Eng.

and

A. Scott, B.Sc.

July 31, 1970

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FIGURES

PART 1

1-1 SUMMARY

Since 1961 there have been intermittent mineral exploration programmes conducted by various companies on the Ashnola Property. Work has included trenching, diamond drilling, magnetometer and SP work, roadbuilding, and geochemical surveys. Early in 1970, Prism Resources Ltd. was formed to further evaluate the porphyry-type deposit, and this report describes the first work stage, an induced polarization survey. It was conducted by a field crew employed and supervised by the author. A Hewitt-100, time domain IP unit was utilized exclusively on the project.

The instrument was manufactured by Hewitt Enterprises Ltd. of Sandy, Utah and is a lightweight battery powered, solid state unit, well suited to the local rugged terrain. A Wenner electrode array was deployed with an "a" spacing of 600 feet (current electrodes 3 x 600 = 1800 feet apart). The transit interval was normally 600 feet along all lines. The survey was conducted on East-West cross lines spaced 800 feet apart, however, over the center of the property, intermediate lines (400 feet apart) were surveyed. A total of 35 line miles has been completed to date.

The unit was calibrated for a square 4 second DC pulse, an0.3 second delay after pulse, and 0.8 second integration of decay voltage. Maps showing apparent resistivity, self potential and chargeability, all at a 1 inch:400 foot scale, accompany this report. The depth of exploration varies with bed rock conductivity, but is believed to be primarily in the 500 to 600 foot range.

The raw geophysical data was keypunched and calculations were performed by an IBM 360-40 cpu. Traverse lines and normalized geophysical

data were automatically plotted and then contoured by hand.

The IP survey outlined coincident SP resistivity and chargeability anomalies which are horseshoe shaped, open to the east, and just less than 2 miles in diameter. The anomalies are concentrically zoned about an inner core and are characterized by the following geophysical responses:

Name	Distance from the "core"	Characteristics IP (milli-seconds)	Resistivity (ohm meters)	SP milli-volts)
background	over 2 miles	7.0	1000 - 1100	< 50
Outer shell	3700 - 6000 feet	10 to 25	> 400	< 100
Main halo	6000 - 1200 feet	25 to 66	< 400	> 100
Inner shell	3800 - 500 feet	10 to 25	400 - 700	~ 100
Core	2000' dia.	< 10	300 - 600	< 100

1-2 CONCLUSIONS

Self Potential

1. Large self potential gradients were recorded and are believed to be due to sulphides.

2. The shape and position of the negative iso-potential gradients similar to the high iso-chargeability zones. The coefficient of correlation of the two data sets (line 104N) is extremely high (-0.866).

3. The self potential method, in general, is quite effective on the Ashnola property. Additional geophysical work, if contemplated, might make use of the IP-SP correlation by substituting less expensive SP surveys for IP work in specific areas.

4. Topographic effect is such that negative and positive iso-gradient centers have been shifted a short distance to the east.

5. An area of high chargeability situated in and around 100E:64N

is characterized by only minor SP effect. This is believed to be due to two causes:

(i) the chargeability is hybrid (not pure sulphide type but a combination of membrane and sulphide type)
(ii) the presence of deep overburden.

Resistivity

6. Variations in subsurface apparent resistivity (inverse of conductivity) are believed to be caused by three factors and various combinations. These are:

(i) changes in rock type,
(ii) changes in subsurface moisture content, and
(iii) variations in the sulphide content.

7. The correlation of chargeability and resistivity data is extremely high.

Chargeability

8. The large horseshoe shaped IP anomaly is due predominantly to the presence of disseminated pyrite, estimated at between 2½ to over 6 percent (volume percent). The pyrite halo is somewhat lopsided but commences some 1000 feet and extends to 7300 feet from an unpyritized core.

9. Geometrical properties of the field array, plus topographic conditions have slightly distorted the pyrite halo's shape. It is shown to be wider than it actually is except in the south section where steep topography has inhibited IP "sideways" viewing.

10. A proportion of the polarization is membrane type and presumably due to such alteration products as clay minerals and sericite.

11. The type of polarization (membrane-hybrid-sulphide) generally appears to be a function of (i) the distance from the core and, (ii) somewhat characteristic of a particular limb of the pyrite halo.

The southwest halo limb is predominantly hybrid class polarization (suggesting considerable alteration and/or weathering), whereas the north limb is predominantly sulphide type polarization. In addition, the inside rim of the halo (even though only low to moderate in amplitude) is predominantly sulphide type polarization.

12. Observable copper and molybdenum mineralization is present in the inner flank of the pyrite halo close to the core. This fact, and in comparison with other porphyry type deposits, suggests that the inner 10 to 20 millisecond range is the highest priority target area.

13. Of special interest are small IP "bumps" around the inside flank, such as:

(i) +20 m.s. apophysy extending south along 137E, observable on lines 120 N, 112N and 104N,

(ii) the disrupted S shaped lobe extending south from 107E:112N to 119E on 92N,

(iii) an 18.8 m.s. response recorded at 107E on line 88N.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA D. R. COCHRANE

Respectfully submitted,

D. R. Cochrane, P.Eng.

PART 2

2-1 INTRODUCTION

Between May 15 and July 18, an induced polarization survey consisting of 35 line miles was completed on the Ashnola property of Prism Resources Ltd. This report describes the field procedure and instrumentation, and also discusses the results obtained. Maps which display the final results may be found in the map pocket.

The instrument was operated by Mr. A. Scott (B.Sc. Geophysics) and the survey was supervised by the author.

2-2 LOCATION AND ACCESS

The Ashnola property of Prism Resources is situated on the eastern flank of Placer Mountain, in the Okanagan Range of the Southern Interior of British Columbia. The property center lies approximately 1½ miles northwest of the confluence of McBride Creek and the Ashnola River. Road access originates from two widely separated points:

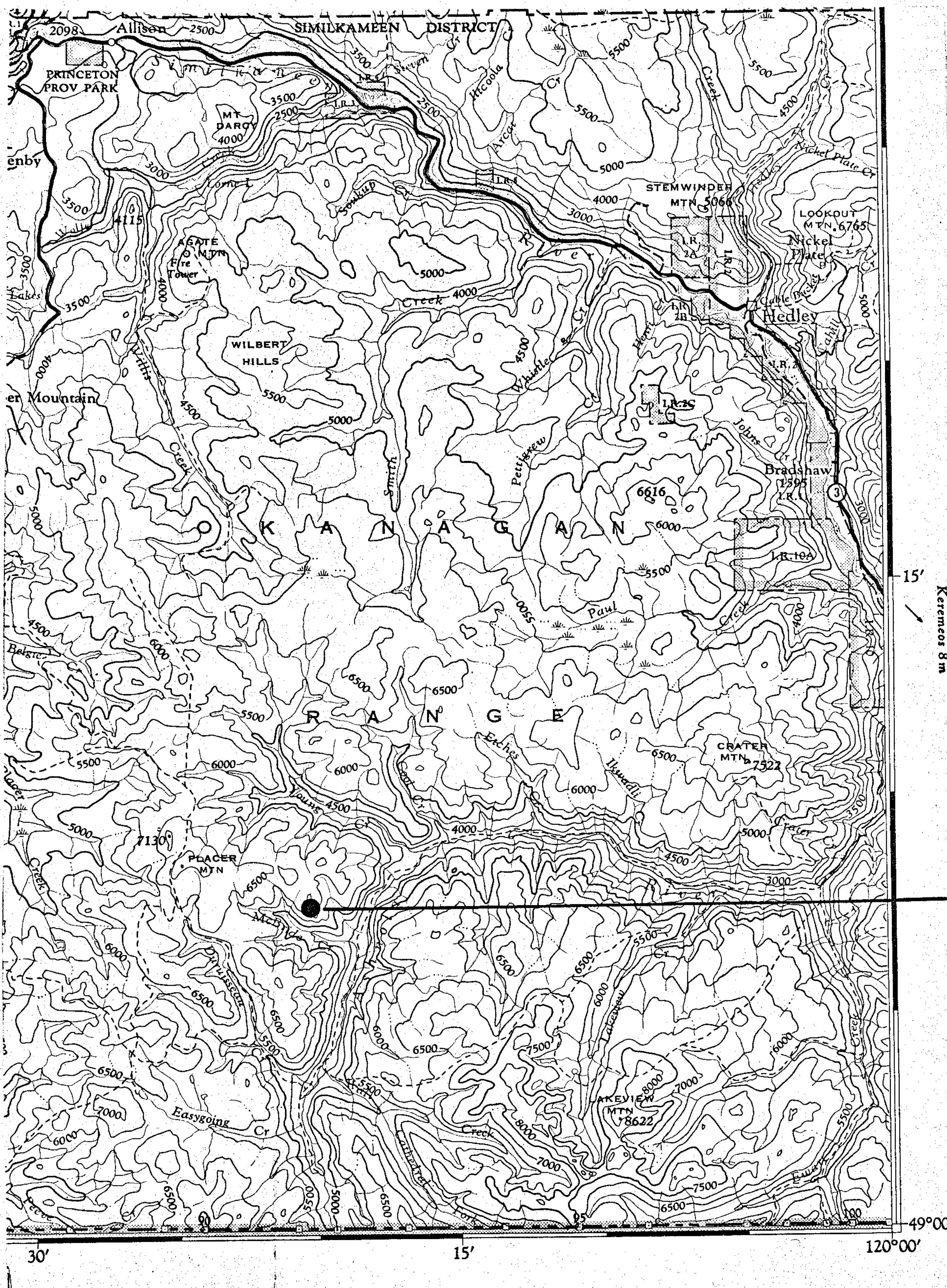
(a) Similkameen Falls, on Highway No. 3 by way of a 14 mile unimproved logging-mining road commencing at Copper Creek, and crossing Placer Mountain to the claim group.

(b) The town of Keremeos, by way of the Ashnola Forestry access road, for a distance of 27 miles southwest.

A heliport is present at the center of the grid. The co-ordinates of the grid center are latitude $49^{\circ}07'$N;longitude $120^{\circ}20'$W and the NTS code for the area is 92 H/1.

2-3 CLAIMS AND OWNERSHIP

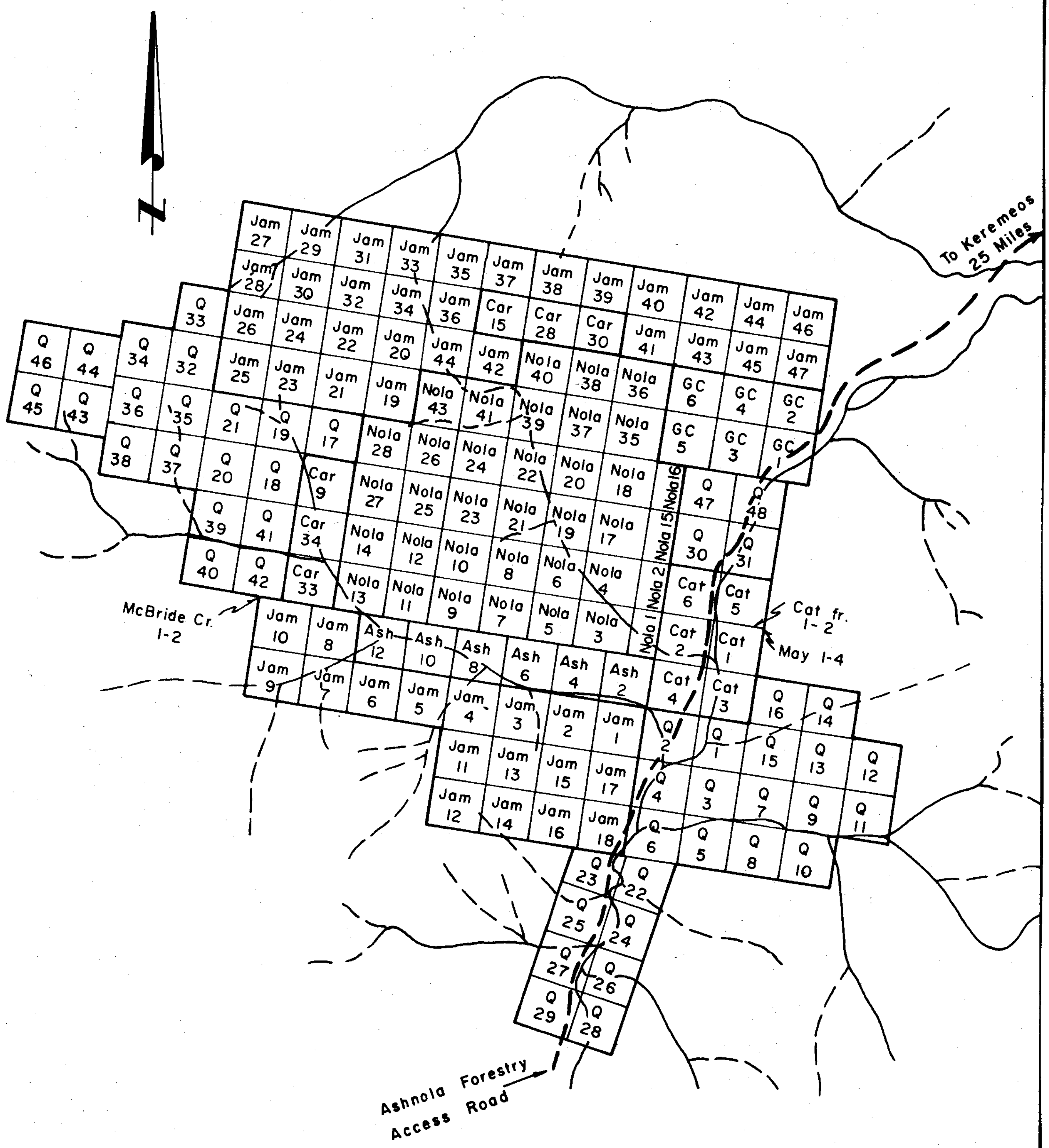
The mining property consists of 166 located claims and fractions, in a contiguous block situated in the Osoyoos M.D. The claims are bounded on the east by the Ashnola River, on the west by Placer



LOCATION MAP

Prism Resources Ltd. Ashnola Property

Scale 1 in.:4 mi.



PRISM RESOURCES LIMITED

ASHNOLA RIVER PROPERTY

0 5000 10,000

SCALE : FEET

DATED: JULY , 1970

FIG. 2

> blasting (Montgomery, 1966). In 1968 the property was under option to Quintana Minerals Corp. who drilled 6 NQ wireline holes totalling 2951 feet (Montgomery, 1968). In addition, geological mapping was done to establish alteration and mineral zoning patterns (Arnold, C., and D. Lowell, 1968). Further trenching and soil sampling was carried out in the Cat Creek Drainage Basin during 1969."

The 1970 work commenced early in May, 1970 when Mr. G. Giroux (B.A.Sc. Geology) and D. Griffith mobilized to the property to reblaze and chain the grid lines in preparation for the IP survey. A D7E bulldozed and excavated trenches for geological purposes, and repaired roads during portions of the months of May and June.

2-5 GENERAL SETTING

The property is located in a fairly rugged section of the Okanagan Range, and the highest prominence rises to 7130 (Placer Mountain) while valley bottoms are, for the most part, below 4000 feet above sea level. Much of the topography at higher elevations is gently rolling and sparsely forested, whereas slopes are often quite steep between the elevations of 4,000 and 6,000 feet. This latter horizon is often heavily forested and/or is occupied by talus, weathered outcrop and rock rubble.

The Ashnola river disects the upland surface, and two small tributaries, Cat and McBride creeks flow easterly into the Ashnola and play an important roll in the local geomorphology. The north flank of McBride Creek is extremely steep and consists of extensive areas of talus lying close to the angle of repose. Elevations rise rapidly from 4,200 to 6,200 feet within 3,000 horizontal feet along the baseline. Similarly, the east to south-southeast flowing Cat Creek has carved a steep but well forested valley into the upland surface. In some areas, 500 foot vertical elevation differences are present within 600 horizontal feet.

It is extremely difficult to assess the influence that the steep local topography has on the geophysical data, but some effect on all data must be assumed. Some considerable effect on the self-potential is normally expected across valleys, over ridges and other steep gradient changes. Ground water,especially along Cat and McBride Creeks has undoubtedly affected the resistivity results. Finally, cross line correlation of IP is affected by the severe elevational differences believed to be important on lines 48, 56, 64 and 72 north (east halves).

Natural outcrops are extremely sparse in certain areas and often extensively weathered and broken. Thus, the detailed geology is imperfectly known. The claims are underlain, for the most part, by a variously-altered, rhyolite porphyry complex. It consists of a fine grained, brown matrix with quartz phenocrysts and may be subdivided into several alteration zones including:

1. pyritic (hemetitic-jarositic)
2. serecitic - kaolinitic
3. silicified

A lithic tuff, possibly contemporaneous, or almost so, with the rhyolite sequence is exposed at lower elevations close to Cat Creek.

The rhyolite porphyry is cut by an irregularly shaped body of quartz diorite a few hundred feet wide which extends southerly close to the base line for about 600 feet from the hub at 100E:100N. It is a coarse-grained instrusive consisting of quartz, plagioclase and biotite. The intrusive is also variously altered and fractured. Fractures often contain microveinlets of quartz, and/or chalcopyrite and molybdenite. Overburden is most extensive in the north claims sector and in Cat Creek valley. It consists of boulder clay which in places is transitional downward into weathered rhyolite rubble. Previous diamond drilling has shown that the bedrock sequence has been extensively weathered in certain areas, sometimes to depths ranging from 100 and 200 feet below surface.

2-6 GROUND CONTROL GRID

The base line for the ground control grid extends (true) north-south and is designated 100 + 00 E. It passes close to the common corner of claims Nola 23, 24, 25, 26 and essentially bisects the claims group. Cross lines extend east-west and are spaced 400 feet apart. They are of variable lengths, but for the most part close to 8,000 feet long (between 60 + 00 East and 140 + 00 East). They extend northward from 46N to 152 + 00 N. An east tie line (140 E) and west tie line (65 E) were used to detect line directional and chaining errors.

The central portion of the grid was originally constructed by Kennco in 1961, and recut and chained by Meridian Exploration Syndicate in 1966. Personnel employed by Prism Resources has recently recut and chained the old grid and greatly enlarged coverage in all directions.

The lines, for the most part, were turned off by a brunton compass on a tripod, and "line of site" was maintained between 100 foot pickets by cutting brush with axes and a chain saw. Station intervals every 100 feet are marked by a numbered blaze orange flag attached to a similarly numbered wooden picket.

2-7 FIELD PROCEDURE

A standard Wenner Array with an "a" spacing of 600 feet was used for the IP survey of Prism Resources Ashnola property. For this array, the distance between pots and electrodes is equal, as illustrated below:

E_1 --- "a" --- P_1 --- "a" --- P_2 --- "a" --- E_2

rear positions   front positions

transit direction →

The front positions are positive and rear positions negative.

A suitable station was chosen for instrument to set up at and the stake men and front pot man moved to the appropriate positions on the line.

A small hole was dug beneath the humus and cleared of rocks in order to seat the pots. In dry soil, a small amount of salt water was added to improve electrical contact.

The stakemen cleared a strip of ground (roughly 2 ft. x 4 ft.) of moss, leaves and rocks, spread aluminum foil over the cleared part and drove a 1½ foot steel stake through the center. The stake was then removed, salt water was poured into the hole and the stake was replaced. Soil was then packed on top of the foil to ensure a large bearing area. If contact was still subnormal, two more stakes were set out some 6 feet to either side of the foil.

Communication with the instrument operator was facillitated by small transceivers and when all positions were reported "ready",the instrument operator commenced measurement. Firstly, the self potential of the ground between front (P_2) and rear (P_1) pots was balanced and recorded in millivolts (front pot was always defined as positive pole and data was corrected when plotted to account for changes in transit direction). A 4 second current pulse was then initiated during which the transmitter current and impressed EMF between the pots was noted. On cessation of the current pulse, an integrated value of the residual decay voltage is automatically registered on the receiver galvanometer. This value was recorded along with position of instrument, RC filter, integration function, output voltage of the transmitter, notes on terrain, steadiness of SP, and the "sharpness" of the IP. The IP was normalized and the procedure repeated until three successive values agreed to within 10 percent. Often an 8 second current pulse was used and various combinations of filters and integration times to assist in interpretation of results.

The order was then given to move on 600 feet to the next station. In the case of an "anomalous" reading the whole array was moved back to the previous setup and if the same values were obtained transit distance was shortened to 300 feet until off the anomalous area.

When direction of motion was changed from east to west, the array was set up on the first casting station to ensure there was no directional bias to the chargeability of the material present.

2 - 8 INSTRUMENTATION

A Hewitt Enterprises pulse type IP unit was used on the Ashnola survey. The unit consists of a DC transmitter and receiver physically coupled for portability.

The transmitter is powered by a 26 volt sealed lead acid battery pack and has an output at the current electrodes of 250, 500 or 1000 volts. Duration of current pulse can be varied between 1 to 10 seconds. Normally a 4 second current pulse with an output voltage of 1000 volts was used on the Ashnola survey. During the current pulse photo electric connection between the transmitter and receiver signals the receiver to measure the EMF impressed between the pots. 0.3 seconds after the cessation of the pulse (time delay), the residual decay voltage is integrated for 0.8 seconds (or integration function one) and the value obtained is automatically recorded on the receiver galvanometer. The time delay feature ensures that any "roundness" of the square pulse and any induction effects will not be integrated. Integration function two (IF-2) doubles the time of integration from 0.8 to 1.6 seconds and the ratios of IP effect for IF_2 compared to IF_1 as a function of IF_1 response gives useful information on the slope of the residual decay curve. The tandem integration functions IF_3 and IF_4 redouble the times to 1.6 and 3.2 seconds. These are used to eliminate AC noise (power lines, etc.). Various RC filters are available on the Hewitt 100 IP unit. These filters (RC 1, 2, 3, 10 & 30) are used to "smooth" the residual curve, that is, eliminate noise (particularly telluric noise caused by time variations in the geomagnetic field). Since they have the effect of reducing the IP value recorded on the galvanometer by a constant factor (½, 1/3, 1/10 and 1/30), they can also be used to bring values on scale without reducing the applied power.

As a by-product of the main IP survey, the self potential gradient and apparent resistivity of the ground is obtained. Because the Hewitt unit is not of the "brute force" variety, the self potential of the ground must be balanced out prior to pulsing and the resistivity is obtained by comparing the output current at the elctrodes to the impressed EMF across the receiving pots ($p = \frac{dv}{I} 2$). The component characteristics of the Hewitt unit is presented in tabular form below.

GENERAL SPECIFICATIONS OF THE HEWITT PULSE TYPE INDUCED POLARIZATION UNIT.

Transmitter Unit

Current pulse period (D.C. Pulse Manual initiated timer)	1 - 10 seconds
Current measuring ranges	0 - 300 milliamperes 0 - 500 0 - 900 0 - 1000 0 - 5000
Internal voltage converter 27 volt D.C. 350 watt output with belt back batteries	 250 volts D.C. 500 Nominal 1000
500 watts using 27 volts aircraft batteries	

Transmitter can switch up to 3 amps at 1000 volts from generator or battery supply with resistive load. The switching is done internally in the transmitter unit. Remote control output can switch up to 10 kilowatts of power by using a separate control unit. A remote control cord is supplied with auxiliary equipment.

Receiver Unit

Self Potential Range	0 - 1000 millivolts 1 millivolt resolution
Impressed EMF Ranges	0 - 30 0 - 100 millivolts 0 - 300 0 - 1000
Input Terminals with Three Combinations	$P_1 - P_2$ $P_1 - P_0$ $P_2 - P_0$
Induced Polarization Ranges	0 - 30 millivolt 0 - 60 seconds 0 - 90
Integration Time Periods	. 8 seconds 1.6 seconds
Tandem Integration Time Periods	1.6 seconds 3.2 seconds

Input Filtering	5 ranges plus 4 integration combinations
Delay Time from Cessation of Current Pulse (Combined Photo Electric Coupled Receiver and Transmitter)	.3 seconds
Operation Temperature	-25° F - 120° F

Power Supply

Receiver Unit	4 Eveready E136 Mercury Batteries 2 Eveready E134 Mercury Batteries 2 Eveready E401 Mercury Batteries
Transmitter Unit	4 sealed lead acid batteries wired in series to provide 26 volt D.C. 350 watt capable of providing a minimum of one day operation before recharge. Batteries fit in box roughly 12" x 8" x 7" which is strapped on pack board with IP unit.

2-9 DATA PROCESSING

The raw geophysical data was transferred to 80 column data coding forms and key punched onto a 113M punch card deck. The information on each station is contained on one card.

Through the facilities of Cross Canada Computer systems an IBM 360-40 computer was utilized to:

(a) correct line positions for directional error,
(b) calculate apparent resistivity in ohm-meters,
(c) normalized IP data into milliseconds.

Program instructions were written to plot the data automatically in the corrected position. Three plots were produced, an SP gradient map, an apparent resistivity map, and a chargeability map. These maps were then contoured by hand by the author.

PART THREE

3-1 DISCUSSION OF RESULTS

(a) Introduction

The final geophysical results are displayed on three maps. (see map pocket) and are designated Figure 3, Self Potential Plan; Figure 4, Apparent Resistivity Plan; and Figure 5, Chargeability Plan. All are plotted at a scale of 1 inch:400 feet.

(b) Self Potential

Self Potential is measured prior to current pulse application and is essentially a by-product of IP and resistivity surveying. The natural potential between the two receiving electrodes (pots) is "bucked out" prior to measuring dV and IP. The plotted SP results are gradient (or may be considered first linear derivative) values, with each line independent of all other lines. Figure 6 shows the natural (self) potential (in millivolts) measured between two stations 600 feet apart. The potential signs have been adjusted so that one convention applies, namely, they are gradients obtained when traversing from west to east. The SP has been plotted midway between the two receiving electrodes. Positive SP gradients are plotted above (north) of the traverse line and negative gradients, accompanied by a negative sign, are plotted below (south of) the traverse line.

Comparison of Figures 3 and 5 shows that a very close association exists between the two sets of data. In order to more quantatively define the relationship, SP data along line 104 N was normalized and corrected to an arbitrary base value (of +358) at the most westerly station on line 104 N, by algebraically adding each of the gradient values 600 feet east of a particular station to the westerly value. A total of 18 paired values (IP & SP) were analyzed. The calculated correlation coefficient between the actual self potential (in mV) and chargeability (in milliseconds) is -0.886. (Note: a coefficient of correlation value of +1 defines a perfect direct correlation; a value of 0 implies no correlation; and a value of -1, implies a perfect inverse correlation). Thus, the relation between the IP and SP data is very close indeed (i.e. high negative SP correlates well with high positive chargeability).

The overall shape of the high negative SPs very much resembles the high chargeability arch and this is what might be expected, (i.e. the oxydation of sulphides in the IP anomaly creates high negative SP anomalies).

The most positive gradient recorded was +253 millivolts at 95E: 96N and the most negative gradient, a -343 at 137E:120N. Several areas characterized by two or more juxtaposed steep gradients and are worthy of note. These occur at: 71 and 77E on line 112N (+140 to -268); 83 and 89E on line 80N (-337 to +151); and 125 and 131E on line 76N (-219 to +177).

There is not an easy or direct correlation between self potential gradient and volume percent sulphides since SP is quite sensitive to variations in thickness and type of overburden, amount, and Ph depth of ground water, changes in elevation, etc. It is quite noticeable in Figure 3, that the largest negative gradients were measured within stream valleys where ground water conditions are amenable to natural current formation. Whereas high positive values (especially the central high) which is situated close to the hilltop, lie in areas where conditions are not as favourable for the production of currents.

The highest priority SP targets are the high negative gradient areas, and areas of large along line gradient changes.

There is very little correlation of SP and IP data along McBride Creek, close to and around the baseline, (100E) where the highest chargeabilities were recorded. SP variation in this area is quite minimal, and therefore suggests that overburden thickness is affecting measurement of self potential.

The close correlation of IP with SP suggest the self potential method of geophysical exploration is a valid and useful one (at least in certain parts) on the Ashnola property. This suggests the possibility of substituting the relatively rapid and inexpensive SP technique for an IP survey in areas where "fill in" is felt to be justified.

(c) Apparent Resistivity

Apparent resistivity data (in ohm-meters) is displayed in Figure 4.

Individual results range from a high of 1767 ohm-meters (5430 ohm-feet) to a low of 268 ohm-meters (820 ohm-feet). Background, as determined over two miles west of the anomalies lies between 1000 and 1100 ohm-meters.

A very pronounced apparent resistivity low (conductivity high) was outlined, and is characterized by resistivities below 700 ohm-meters (approximate threshold). This low has a distinct arcuate shape, open to the east, and slightly skewed. The innermost (and lowest) depression (less than 300 ohm-meters) lies between 1000 and 5400 feet from a hypothetical central point (close to 119E on line 92 N).

The resistivity anomaly exhibits the same shape and size as both the high chargeable zone and SP anomalies and therefore, in general, the same causes are believed to have contributed to the formation of all three.

The chargeability and resistivity data show slight discrepancies at certain points. On the west half of line 104 and in and around 125 E:104 N, the resistivity is fairly low while the IP data is not as correspondingly high. This is believed to be due to a decrease in resistivity due to moisture in these areas, (upper part of McBride Creek, and a small tributary of Cat Creek).

On the extreme east end of lines 104, 112 and 120 N, an unusually sharp resistivity gradient is observable without similar IP changes. This may be due to a rock type change in this area.

On the whole, however, chargeability and resistivity information are highly compatible, and suggests the possibility (in this area, at least) of priority rating time domain chargeability data on the basis of apparent resistivity information (such as is done in frequency domain surveys).

(d) Chargeability

Just over 250 induced polarization values in millivolt seconds per volt (milliseconds) are displayed in Figure 5. (map pocket) Individual values ranged from a low of 4.3 to a high of 66.2 High amplitude results are arranged in a crude horseshoe shape, open to the east, and just less than two miles in outside diameter. The central core is an irregularly shaped zone up to 3400 feet long and 1500 feet wide and characterized by response below 10 milliseconds. The anomalous halo may be divided into three sectors; the southwest limb which exhibits the highest chargeabilities; the northwest limb, and the north limb. They are separated by geophysical disruptions, as yet of unknown geologic causes.

The amplitude and extent of the anomalous IP arch is best demonstrated by comparison with other anomalies, tabulated below:

Deposit	Background (m.s.)	High (m.s.)	Width along Traverse Line
Craigmont, B.C.	2	12	1200'
Krain Deposit, B.C.	3	8	1100'
Lornex, B.C.	5	13	2000'
Bethlehem, B.C.	4	9	+1000'
Brenda, B.C.	-		
	1 to 1.5 frequency effect units over background		1000'

The large, high amplitude anomaly discovered on the Ashnola property is believed to be primarily due to the presence of a pyrite halo. Due to lateral viewing with the large "a" spacing however, the lateral extent of the halo has been slightly exaggerated. Some additional amplitude to chargeability has been added, (membrane type polarization) presumably by some of the alteration products (such as clays, sericite and other platey minerals) within the pyrite halo. The class of polarization is indicated by the ratio of integrated decay voltages at both 8 and 4 second pulse times. A standard classification of ratios is as follows:

Ratio of 8 to 4 second IP response	Class
less than 1.20	membrane
1.20 to 1.30	hybrid
above 1.30	sulphide type .

These ratios show that the north limb is predominantly "sulphide type" whereas the southwest limb is hybrid (the latter then, likely due to more extensive alteration, and/or weathering and the presence of ground water in fractures). An important group of sulphide type ratios were recorded immediately west of the less than 10 millisecond core. Although the amplitude of response ranged from just above 10 to just over 30 milliseconds, the chargeability appears to be due almost entirely to sulphide minerals.

Relatively low IP response was recorded in and around 124E:88N, ("the core") and is believed to be due to a relatively unpyritized core. Bedrock alteration is observable, but rather than platey mineral assemblies (sericitic-propylitic alteration) this zone appears to be more silicified (quartz microveinlets) and slightly K-metosomatized.

Normal IP background in the area, as determined on line 152N, nearly two miles west of the base line (100 E) is approximately equivalent to 7.0 milliseconds. The background chargeability value, although presumably predominantly membrane polarization, is normally equivalent to one volume percent disseminated sulphides. Chargeability-sulphide percent correspondence is normally linear at low to moderate chargeabilities. Thus, the IP anomaly may be interpreted as due to sulphides in the order of 2½ (18 milliseconds) to 8 or so volume percent disseminated sulphides, (presumably pyrite).

The shape of the anomaly, and concentric zoning suggest the Ashnola property is a classic porphyry type deposit.

Respectfully submitted,

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. R. COCHRANE

D. R. Cochrane, P.Eng.

APPENDIX I

PERSONNEL

Name:	COCHRANE, Donald Robert
Education:	B.A.Sc. - University of Toronto M.Sc. (Eng.) - Queen's University
Professional Associations:	Professional Engineer of British Columbia, Ontario, and Saskatchewan. Jr. member of C.I.M.M., member of G.A.C., M.A.C.
Experience:	Engaged in the profession since 1962 while employed with Noranda Exploration Co. Ltd., Quebec Cartier Mines Ltd., Meridian Exploration Syndicate, and Geo-X Surveys Ltd. Presently consulting. Experience in West Indies, Latin America, South America, United States and Canada.

Name:	SCOTT, Alan R.
Education:	B.Sc. Geophysics - University of British Columbia
Experience:	July 1967-January 1968: Southern Okanagan Lands Project, Surveyor's Assistant February 1968-August 1968; April 1969-September 1969 Geo-X Surveys Ltd., Geophysical instrument operator May 1970-present. Employed by D.R. Cochrane as instrument operator.

Name:	GIROUX, Gary
Education:	B.A.Sc. (Geology) University of British Columbia

Name:	CUNNINGHAM, Bill
Education:	B.C. High School Diploma (Vancouver City College)
Experience:	Summer of 1969 employed in Seismic exploration with the Canadian Government in Northern Ontario

APPENDIX I

PERSONNEL

Name:	LILLIES, Wayne, Age 17
Education:	Grade 11, B.C. Secondary
Experience:	No previous Experience
Name:	HANBURY, Richmond, Age 23
Education:	2 years, Vancouver Art School
Experience:	No previous Experience
Name:	GRIFFITH, David, Age 23
Education:	B.A. (English), Queen's University
Experience:	One field season's general experience in mineral exploration

APPENDIX II

PERSONNEL & DAYS WORKED

The following personnel were employed by D. R. Cochrane on the Prism Resources Ltd. Ashnola project on the dates set out below.

D. Griffith	IP crewman	May 15-20, 26, May 28 - June 1, July 16
	Line cutter	May 21-25, 27
B. Cunningham	IP crewman	May 15-20, 26, May 28-June 1, June 8, 9, 11,-13, 15,-18 June 23 - July 8
	Line cutter	May 21 - 25, 27, June 10, July 9
W. Lillies	IP crewman	May 15 - 20, 26, May 28 - June 1, June 8, 9, 11, 12, 13, 15, 16, 17, 18, June 23 - July 8, July 10 - 17,
	Line cutter	May 21-25, 27, June 10, June 20-22, July 9
	Camp construction	May 11 - 14
R. Hanbury	IP crewman	June 8, 9, June 11-13, 15-18, June 23-July 8, July 10-17,
	Line cutter	May 21-25, 27, June 10, June 20-22, July 9
D. R. Cochrane P.Eng. (supervision)	Supervision	May 15-19, June 2-7; June 16-19, June 26-30, July 1, 2, July 9-18,
A. Scott	IP operator	May 15-20, 26, May 28 - June 1, June 8,9, 11-13, 15-18, June 23-July 8, July 10-17.
	Line cutter	May 21-25, 27, June 10, June 20-22, July 9
	Data Processing	July 27, 28, 29
R. Scott	Cook	May 19-31, June 1, June 6-18, June 20-29, July 1-17
W. Cochrane	Cook	May 15-19, July 16 & 17
J. Williams	Camp Construction	May 11-14

APPENDIX II (cont.)

PERSONNEL & DAYS WORKED

The following Prism Resources Limited personnel were employed on the Ashnola Projects on the dates set out below.

G. Giroux	Geology, linecutting,	May 7 to 31, June 1
	Camp Construction	June 2, 3,4-7
	Swamping for cat	June 8 - 30
	Sampling, Supervision	July 1 - 19
D. Griffith	Linecutting	May 7 to 15
	Camp Construction	June 2, 3, 4, 7
	Linecutting	June 8 - 30
		July 1 - 19
J. Williams	Camp Construction	June 2 - 6
	Linecutting	July 10 - 14
Dr. A. J. Sinclair	Supervision	May 14, June 30, July 1

APPENDIX III

COST BREAKDOWN

A. Period, May to June 1

IP Survey (D.R. Cochrane, P.Eng. as per contract) 12 days @ $310.00	$3,720.00
Linecutting (Cochrane Personnel) 4 days @ $150.00	600.00
Standby ½ day @ $10.00	50.00
Linecutting (Prism Personnel)	
(a) G. Giroux 17 3/4 days @ $38.00	674.50
(b) D. Griffith 9 days @ $25.00	225.00
Trenching (Tri-Valley Construction) D7E Cat and Operator	1,605.00
Transportation	
(a) Rental, 4 x 4 Landrover	315.00
(b) Rental, 4 x 4 Scout	285.00
Board Loss 104 man days @ $6.00/man/day	624.00
Engineering and Supervision: G. Giroux 6 days @ $38.00	228.00
Dr. A. J. Sinclair (May, 1970) 4 days @ $150.00	600.00
Total of A	$ 8,926.50

B. Period, June 2 to July 26

IP Survey (D.R. Cochrane, P.Eng. as per contract) 20 3/4 days @ $310.00	$ 6,432.50
Linecutting (Cochrane Personnel) 6½ days @ $150.00	975.00
Standby (Cochrane Personnel) 6½ days @ $100.00	650.00
Linecutting (Prism Personnel)	
(a) G. Giroux, 9 days @ $38.00	342.00
(b) D. Griffith, 9 days @ $25.00	225.00
(c) J. Williams, 5 days @ $25.00	125.00
Board Loss, 23 man days @ $5.00/man/day	115.00
Supervision (Dr. A. J. Sinclair)	530.55
On Property Transportation, Rental of 4 x 4 for June	315.00
Total of B	$ 9,710.05
GRAND TOTAL	$ 18,636.55

APPENDIX III (CONT.)

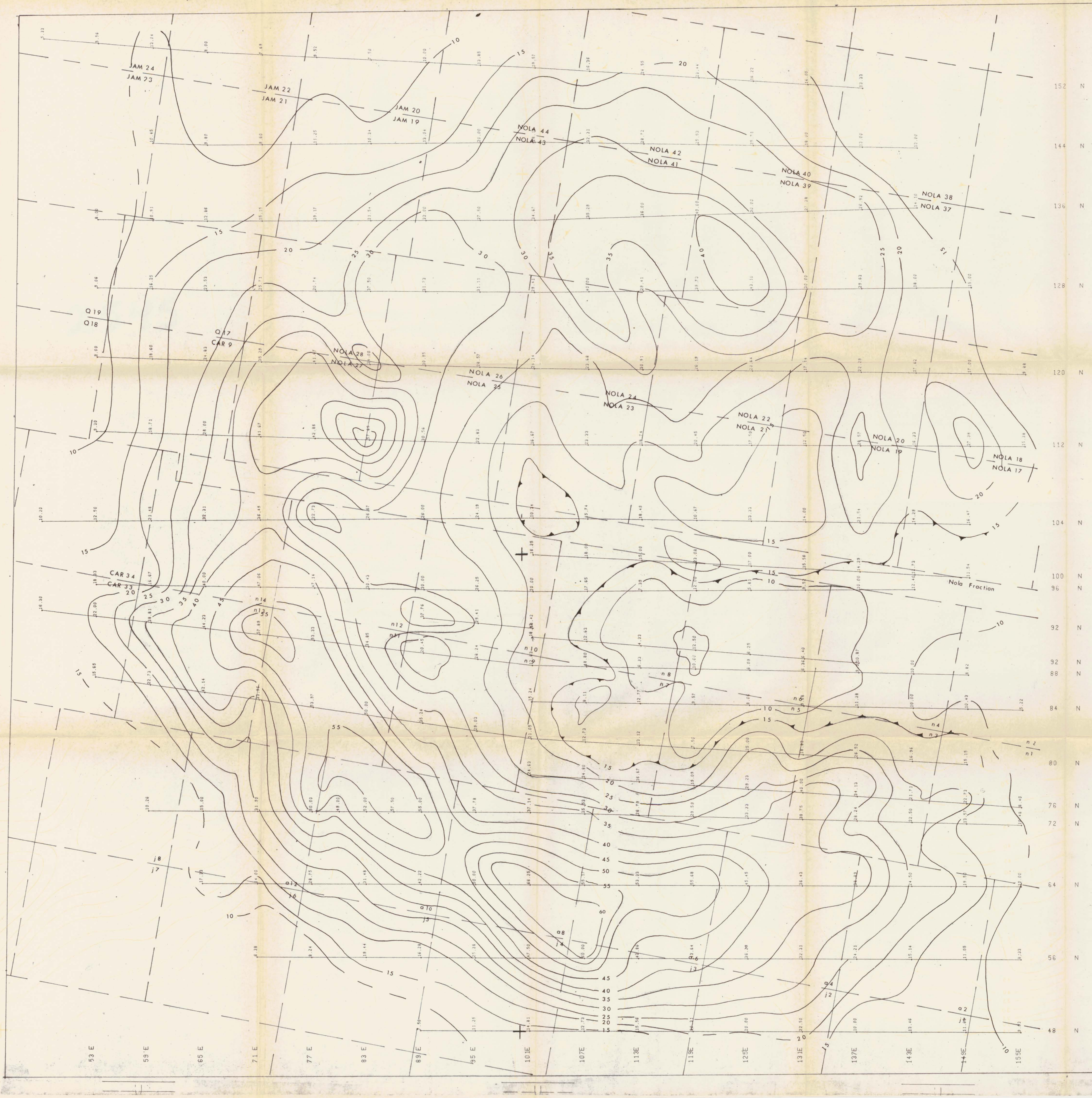
COST BREAKDOWN

Note:

The total cost of the I.P. Survey ($10,852.50) has not been applied on affidavits submitted at this time. The balance ($2,715.00) represents work done on certain of the claims since their 1970 anniversary dates and will be applied later this year. Therefore, reference will be made on later affidavits to this report of the entire area.

D. R. Cochrane, P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. R. COCHRANE



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2545 MAP #5

n denotes Nola claims
j Jam
a Ash

FIGURE 5

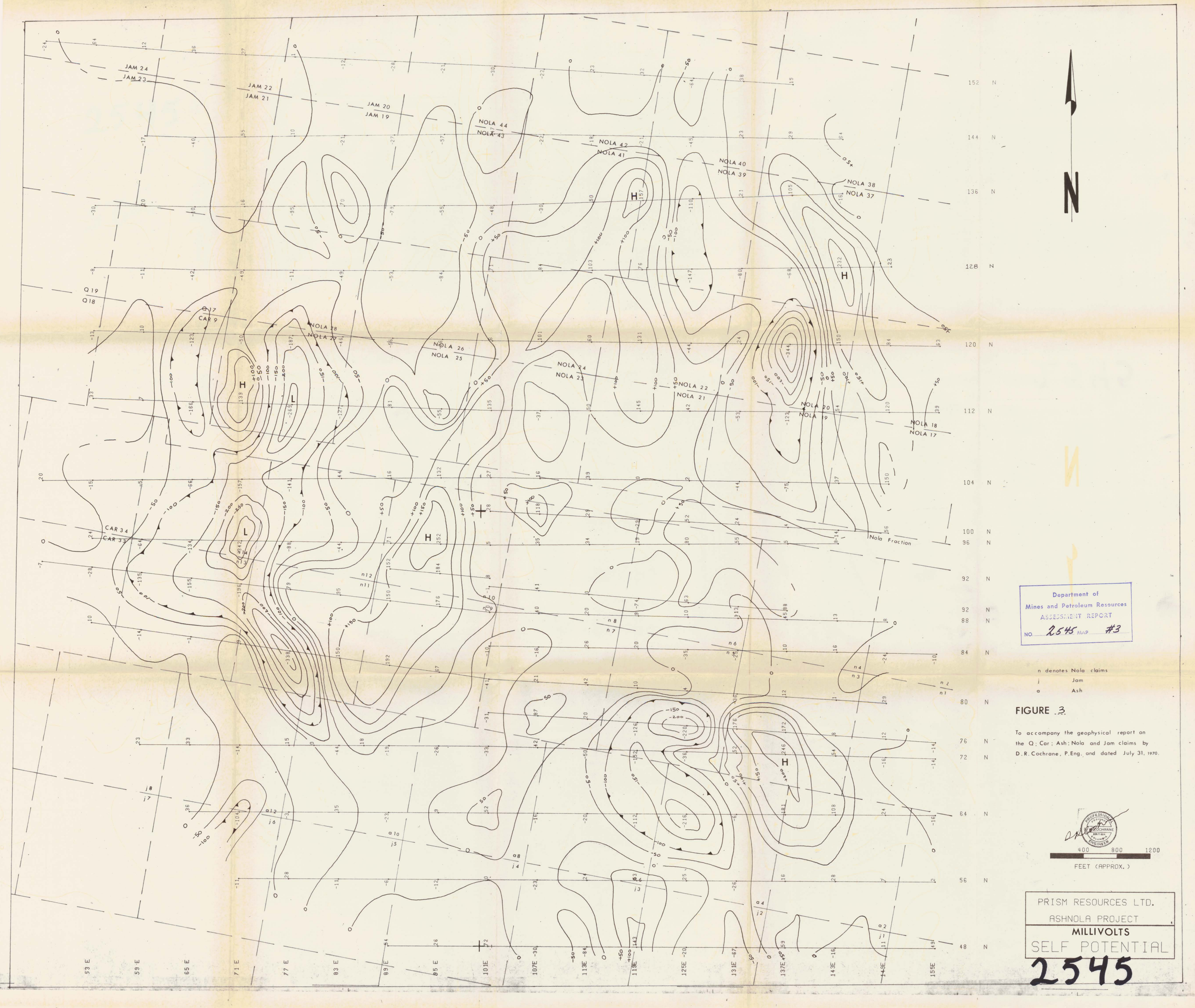
To accompany the geophysical report on the Q; Car; Ash; Nola and Jam claims by D. R. Cochrane, P. Eng. and dated July 31, 1970.

0 400 800 1200
FEET (APPROX.)

Values in MILLISECONDS (ms)

PRISM RESOURCES LTD.
ASHNOLA PROJECT
CHARGEABILITY
NORMALIZED IP

2545


PRISM RESOURCES LTD.
ASHNOLA PROJECT
MILLIVOLTS
SELF POTENTIAL
2545
FIGURE 3
To accompany the geophysical report on the Q; Car; Ash; Nola and Jam claims by D.R. Cochrane, P.Eng. and dated July 31, 1970.
n denotes Nola claims
j Jam
a Ash
400 800 1200
FEET (APPROX.)
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2545 MAP #3
N
JAM 24
JAM 23
JAM 22
JAM 21
JAM 20
JAM 19
NOLA 44
NOLA 43
NOLA 42
NOLA 41
NOLA 40
NOLA 39
NOLA 38
NOLA 37
NOLA 28
NOLA 27
NOLA 26
NOLA 25
NOLA 24
NOLA 23
NOLA 22
NOLA 21
NOLA 20
NOLA 19
NOLA 18
NOLA 17
Nola Fraction
Q 19
Q 18
Q 17
CAR 9
CAR 34
CAR 33
152 N
144 N
136 N
128 N
120 N
112 N
104 N
100 N
96 N
92 N
88 N
84 N
80 N
76 N
72 N
64 N
56 N
48 N
53 E
59 E
65 E
71 E
77 E
83 E
89 E
95 E
101 E
107 E
113 E
119 E
125 E
131 E
137 E
143 E
149 E
155 E

n denotes Nola claims
j Jam
a Ash

FIGURE 4

To accompany the geophysical report on the Q; Car; Ash; Nola and Jam claims by D.R. Cochrane, P.Eng. and dated July 31, 1970.

2545

400 800 1200
FEET (APPROX.)

Values in OHM-METERS

PRISM RESOURCES LTD.
ASHNOLA PROJECT

APPARENT
RESISTIVITY