Q37 No 38

491001

C.R.A. EXPLORATION PROPRIETARY LIMITED Q37/38

MICROFILMED

Ref. No. TAS. SK 55-3

E.L. 19/72

SUBJECT: GEOPHYSICAL PROGRAM, NIETTA, TASMANIA.

AUTHOR: Robert J. Smith (Consulting Geophysicist)

M5-1130

DATE: 4th October, 1975.

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491002

ROBERT J. SMITH
Consulting Geophysicist

2 Borthwick Ct.,
BEAUMONT, S.A. 5066
Telephone 79 6087

7-10-75

GEOPHYSICAL PROGRAM, NIETTA, TASMANIA, E.L 19/72

Dear Warren,

I hope the lack of formal drafting doesn't bother you. I was anxious to submit this memorandum as quickly as possible as I plan to be overseas for about two weeks. I will return before the end of October and would be pleased to discuss this project with you if required.

I will return the core samples direct to Burnie and retain the various maps, etc. temporarily in case you want me to refer to them again. If you want me to send them back please let me know.

I have enclosed photocopies of a couple of model tests, simulating fence responses to illustrate the type of response you might anticipate in the field They are very difficult to predict.

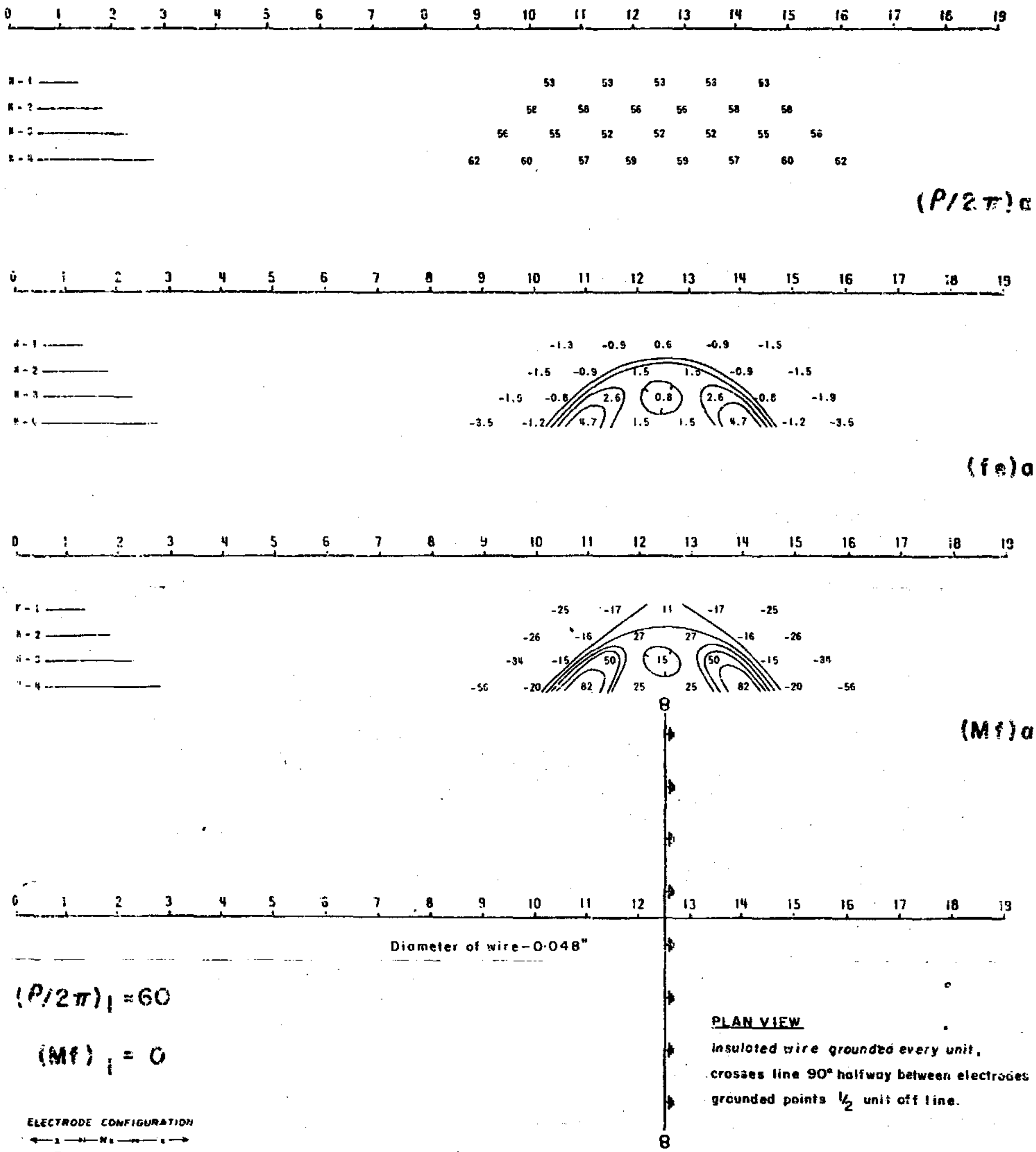
Yours sincerely,

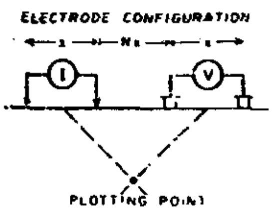
(Signed) Robert J. Smith

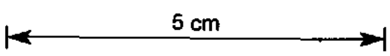
McPHAR GEOPHYSICS LIMITED

Theoretical Induced Polarization and Resistivity Studies

Scale Model Cases





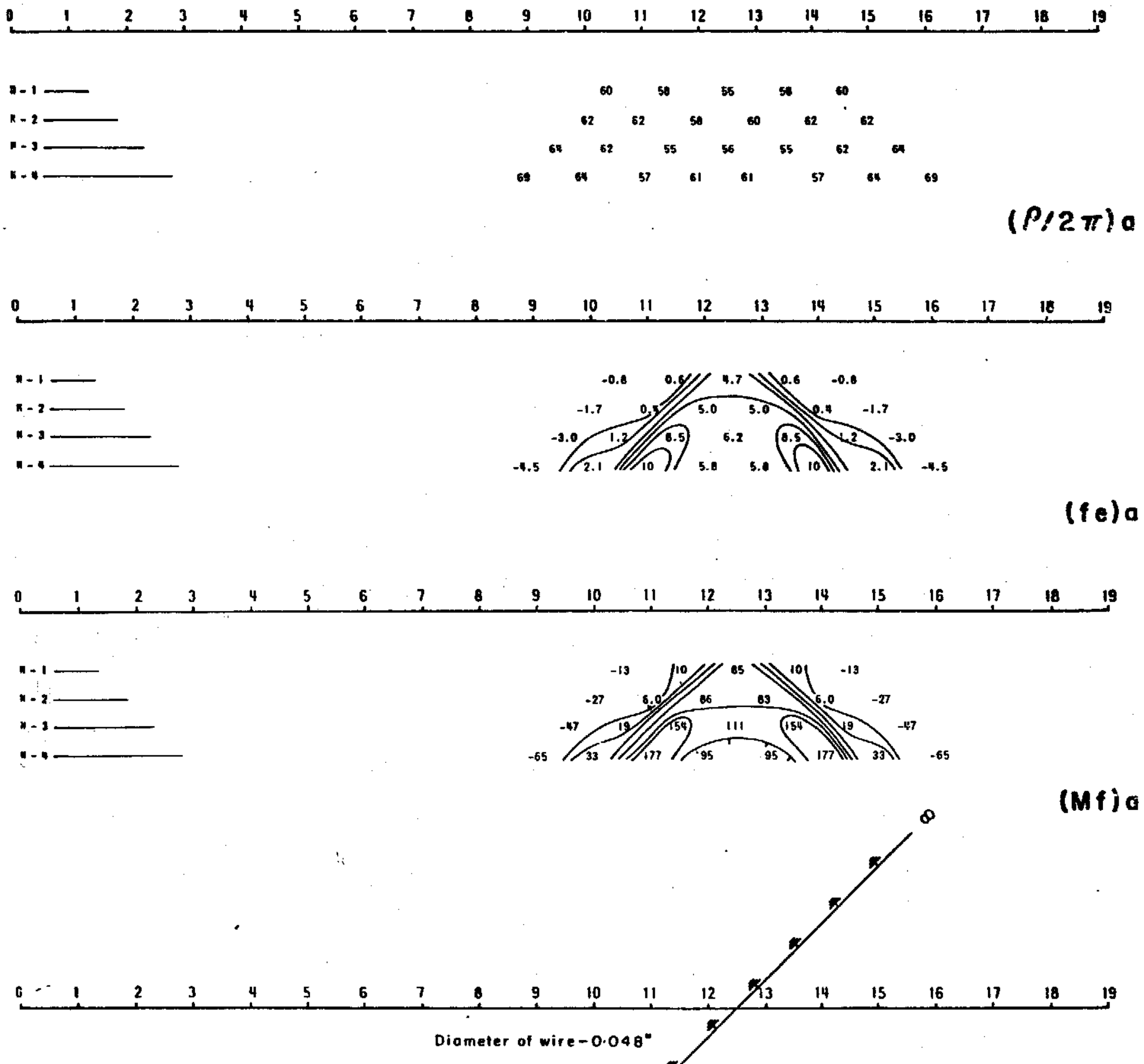


CASE
W-90°-gr. lu-be-gr. off l

McPHAR GEOPHYSICS LIMITED

Theoretical Induced Polarization and Resistivity Studies

Scale Model Cases

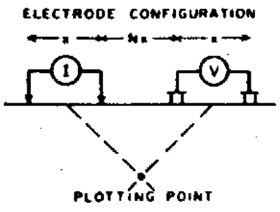


$(\rho/2\pi)_1 = 60$

$(Mf)_1 = 0$

PLAN VIEW

Insulated wire grounded every unit, crosses line 45° halfway between electrodes, grounded points ½ unit off line.



5 cm

CASE

W-45°-gr. lu-be-gr. off lin

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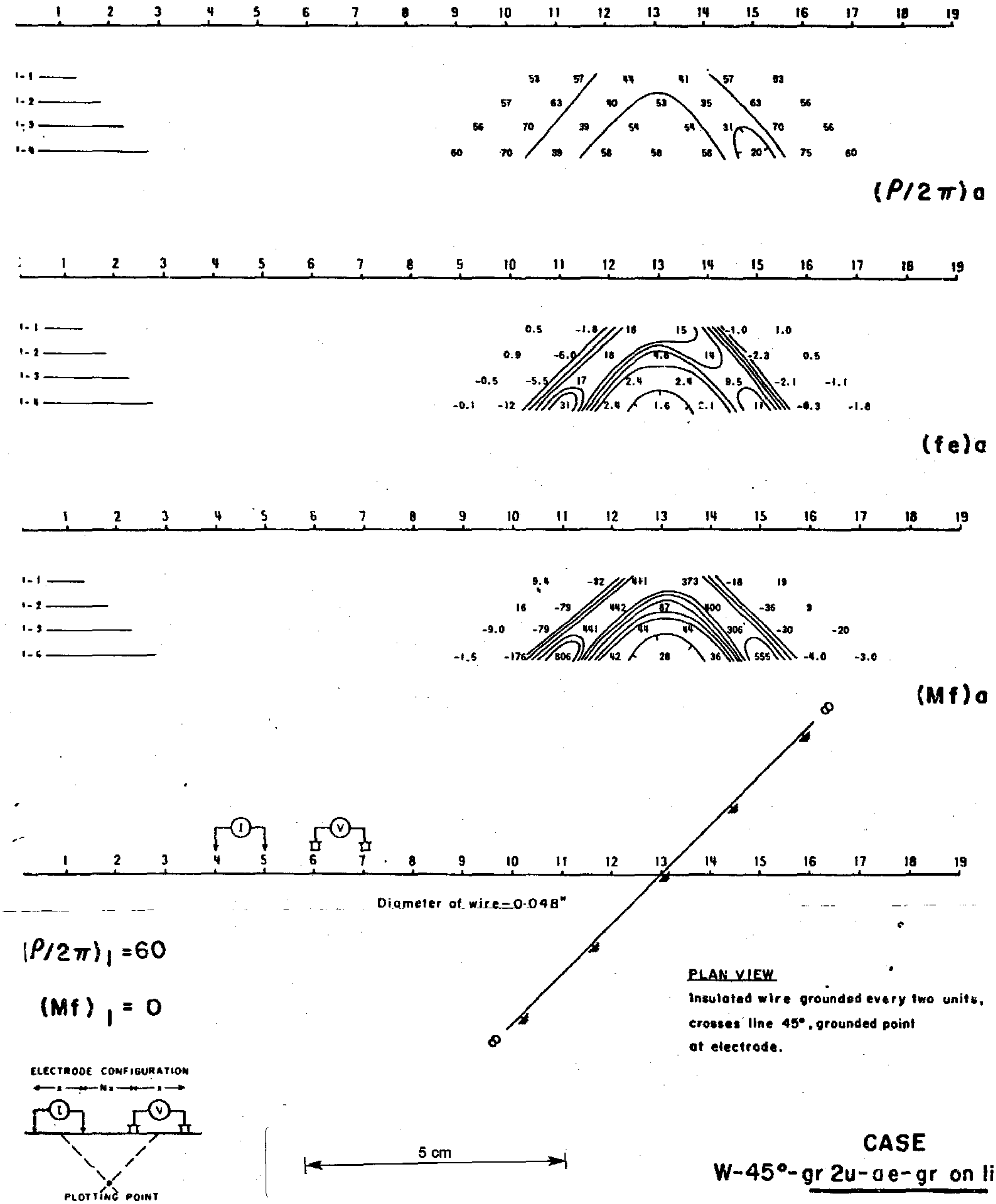
Theoretical Induced Polarization and Resistivity Studies

Scale Model Cases



CASE

W-45°-gr 2u-ae-gr on li

.004

ROBERT J. SMITH
CONSULTING GEOPHYSICIST

491006

2 BORTHWICK CT
BEAUMONT, S.A. 5066
Telephone 79 6087

October 4th, 1975

MEMO TO : MR. W. ATKINSON,
C.R.A. EXPLORATION PTY. LTD.,
G.P.O. BOX 384D,
MELBOURNE. VIC. 3001

MEMO FROM : MR. R.J. SMITH,
CONSULTING GEOPHYSICIST

SUBJECT - GEOPHYSICAL PROGRAM, NIETTA, TASMANIA

1. INTRODUCTION

At the request of Mr. M. Kirton of C.R.A. Exploration Pty. Ltd., the author recently (September 24th, 25th) visited Tasmania to review geophysical work in the Nietta area with Mr. T.M. Porter. The visit included a review of previous geochemical and geophysical work and current geological ideas on the project. It was also possible to arrange a field visit to the prospect to inspect the survey area.

An extensive reconnaissance geochemical program near Nietta had delineated three main areas of interest for further work, known as Crosby Creek, Loyetea North and Loyetea South. All three appeared to have potential for base metal sulphide mineralisation similar to Cue River (Cominco) or Woodlawn (Jododex). The most accessible, Crosby Creek, had been surveyed with several geophysical methods and three diamond drill holes were completed during mid 1975.

Although no significant sulphide mineralisation has been discovered, to date, the area is considered to retain potential for further exploration. The object of the recent visit was to review previous geophysical work on the prospect, collect core samples for laboratory tests and make recommendations for a further geophysical program in the area.

To assist in this review, the following data was made available to the author:

1. A draft report by G.P. Jenke of C.R.A. Exploration Pty. Ltd. on geophysical surveys at Crosby Creek, including:
   a. Helicopter E.M. and magnetics
   b. Self potential
   c. Ground magnetics
   d. Induced polarization and resistivity.
2. I.P. and resistivity pseudo - sections to accompany the above report (Plan No. T902-T914).
3. Plans T890 - T897, T899 - T901, T920, T921, geophysical plans to accompany the above report.
4. Geological and geochemical plans of the Crosby Creek grid at a scale of 1 : 2000
5. A transparency of the Crosby Creek grid at a scale of 1 : 2000 showing fence locations.
6. Analogue traces from the combined helicopter electromagnetic and magnetic survey of the Nietta area, by Geoex Pty. Ltd.

In addition, field notes from the geophysical surveys were available for inspection in the Burnie office of C.R.A. Exploration Pty. Ltd., Mr. T.M. Porter was available for an extensive review of the geology and background of the project and five core samples were collected from drill hole DD75 - CC1 for laboratory measurements of resistivity and I.P. effect.

II. DISCUSSION OF PREVIOUS GEOPHYSICAL RESULTS

a. Helicopter E.M. and Magnetics

Parts of the Nietta area were surveyed with the H400 system by Geoex Pty. Ltd. The survey was described in G.J. Jenke's report and anomalies were plotted and annotated on Plan No. T897.

A number of anomalies were noted and they generally appear to fall into groups. Several zones were noted with coincident (or nearly coincident) magnetic response, characterized by broad anomalies and low conductivity:

(a) Near the north-western corner of the survey area and the boundary of EL 19/72.

(b) Near 11000 mN/12000 mE

(c) Near 8000 mN - 9000 mN and 12000 mE - 15000 mE

(d) Near 10000 mN - 12000 mN and 13000 mE - 16000 mE

(e) Near 8000mN - 9000 mN and 8000 mE - 9000 mE.

(f) Near 6000 mN - 7000 mN and 8000 mE - 9000 mE.

These zones appear to coincide with mapped basalt and have been interpreted as due to the basalt. The correlation is excellent and this seems to be a reasonable interpretation although it is not obvious why the basalt gives such a marked response.

Several anomalies grouped around 8000 mN - 9000 mN and 8000 mE appear to indicate highly conductive sources (low frequency response/high frequency response > 1). An examination of the analogue traces suggests that these ratios have been inverted and, in fact, only a poor conductivity is indicated. Only one anomaly was considered to be of interest, near 7700 mN/ 8700 mE with a ratio of 0.5/0.7. Although the anomaly amplitude was small, it was clearly defined and quite narrow. A comparison of the detailed anomaly shape with model curves produced by S.H. Ward suggests that it is probably due to a flat lying conductor. This interpretation may be extracting too much from the data, but it appears consistent at both frequencies. One I.P. line (87E) did detect a shallow zone of low resistivity between 7730N and 7780N and this may be the same source. It is difficult to make a precise comparison between the airborne and ground data due to uncertainties in location, but it appears unlikely that the E.M. anomaly is due to a steeply dipping massive sulphide conductor - the target of the survey.

Although the airborne E.M. survey does not appear to have detected any conductors of major interest, neither the method nor the prospect is downgraded, a significant sulphide source could still exist outside the airborne survey area or at a depth too great for detection from the air.

The magnetic survey results were contoured by Geoex Pty. Ltd. and the contour plan was included as C.R.A.E. Plan No. T920. The main survey area appeared relatively flat (magnetically) surrounded by areas of steep magnetic relief generally coincident with the zones of E.M. anomalies listed above and mapped as basalt. Variations in the magnetic response probably reflect variations in thickness of the basalt flow which filled valleys etc. in the previously dissected terrain.

One magnetic anomaly, near 7000 mE, 9000 mN suggests a roughly circular, discrete source - possibly a volcanic throat. Other structures may be interpretable but since most of the magnetic response occurs near the margins of the survey area, anomaly patterns are generally incomplete.

b. <u>Self Potential</u>

The self potential method was first tested in an area of outcropping sulphides in a road cutting and results were displayed on Plan No. T892. Discrete, definite anomalies were detected coinciding with most of the exposed sulphides. The S.P. method relies on electro-chemical effects caused by oxidizing sulphides and a truly 'blind' deposit could easily be too deep for oxidation. The measured response is also complicated by terrain, drainage etc. and results may be difficult to interpret in steep terrain.

Several traverses were surveyed at Crosby Creek and the results are shown on Plan No. T891. It should be noted that the results on each line are independent (i.e. the lines were not connected to each other) and therefore the variations in potential from line to line are not significant. No definite anomalies were detected, a broad zone of weak local 'highs' was noticeable between 7300 mN and 7400 mN between Line 73E (7300 mE) and Line 76E (7600 mE) but it could not be interpreted with any confidence. The significance of this zone is not clear.

The S.P. method is cheap and rapid, but often ~~unreliable,~~ particularly in rugged terrain.

c. Magnetics

The Crosby Creek area was surveyed on a 50 m x 5 m grid with a proton precession magnetometer in an attempt to provide additional structural information on the area. It was not expected to lead directly to sulphide mineralisation but rather to a better understanding of the geology. The magnetic results were presented as stacked profiles (Plan Nos. T899, T900 and T901) and contours (Plan No. T890) at a scale of 1:2000.

At one end of the Crosby Creek grid (near 8800 mE, 8000 mN) a gossan was known and this area was surveyed on a 25 m x 2 m grid. Results were presented as profiles (Plan No. T893) and contours (Plan No. T894) at a scale of 1:500.

The magnetic map of the main Crosby Creek grid did reveal a number of significant anomalies which could be correlated with lithology. The magnetic interpretation is illustrated on Plan No. T921 and discussed in the report by G.P. Jenke.

A relatively long linear unit (described as Unit A) correlates closely with mapped "agglomerate, ash flow, lapilli and crystal tuffs". Unit B is unmapped but may be an extension of the same feature displaced by faulting.

Unit C coincides with mapped "microdiorite (including some rhyodacite)" which occurs quite extensively on the southern half of the grid.

Unit D, in the south western corner of the grid is quite complex but it appears to be related to "fine rhyolitic (to dacitic) tuffs and tuffaceous sediments."

Two major faults have been interpreted from the magnetics but they are rather inconclusive. One, extending from near 7100 mE/7200 mN to 8000 mE/7900 mN, appears to be in reasonable agreement with the geological interpretation and in fact was probably influenced by it. The second major fault, extending from near 7000 mE/ 7400 mN to 8500 mE/7800 mN, is based on less conclusive geophysical evidence and must be considered suspect.

There is little doubt that the geological structure is considerably more complex than was revealed by this initial interpretation. No attempt was made here to exhaustively study the magnetics as it was felt to be beyond the scope of this memorandum and of doubtful value at this stage. In the future, as geology becomes clearer, it may be possible to upgrade the magnetic interpretation and additional measurements should certainly be made on any new lines or extensions of existing lines.

Detailed magnetic results in the gossan area appear to disagree with results from the North East corner of the main Crosby Creek grid (see Plan No. T893 and T901). Possibly the lines were surveyed at different times and stations not exactly reoccupied. The detailed measurements over the gossan showed a weakly disturbed profile (see Line 88E near 7980N on Plan No. T893) in the area of the gossan outcrop. Immediately to the south (near 7970N) a pronounced local anomaly was detected and it could be traced from near 8000 mN/ 8875 mE to 7920 mN/8700 mE (missing on Line 87/25E and 87/5E). Although not exactly coincident with the gossan, this magnetic anomaly strikes parallel with it and is almost certainly related. This could possibly represent a fault (it would be on line with the second major fault interpreted by G.P. Jenke) with intermittent mineralisation along it.

Negative mangetic anomalies were noted on several lines near 8000 mN. These are possibly related to the fence, power line or other cultural features along the road and are therefore not considered significant.

The magnetic results have indicated a number of features of interest which are not yet completely understood but which could contribute to a better understanding of the geology in this area. The method is cheap to apply and it should be continued on any new or extended lines. Interpretation should be reviewed at intervals with Mr. T.M. Porter so that any new geological ideas can be considered and possibly tested.

d. <u>Induced Polarization</u>

Induced polarization and resistivity measurements were made on several lines on the Crosby Creek grid (including the gossan area). The measurements were made with Austral frequency domain equipment operating at frequencies of 3.0 and 0.3 Hz. All lines were surveyed with a dipole - dipole electrode array and electrode separations of 25 metre and 50 metre. The above specifications are conventional and should have been adequate to detect any significant concentrations of metallic mineralisation within say 80m - 100m. of the surface.

It should perhaps be noted here that sphalerite is not a good conductor and would not be detected directly by I.P.

Naturally, it usually occurs in association with other sulphides (e.g. pyrite) and can therefore be detected indirectly. A sulphide deposit of predominantly sphalerite might be expected therefore to give only a wak I.P. response, it would be most unusual to get no response at all.

The I.P. and resistivity results were plotted as pseudo sections (Plans T902 - T914) and interpreted anomalies were plotted on a grid plan (Plan T896) ~~which also showed~~ the locations of fences etc. During the author's visit to the area, the fences were inspected for possible interference with I.P. measurements. Since earthed fences are metallic conductors, they naturally give rise to significant I.P. responses if electrodes are oriented appropriately, close to them.

No pronounced definite anomalies were detected by the I.P. survey but a number of maringal responses were noted and some pronounced resistivity fluctuations appeared to correlate with geology.

A line by line discussion of the I.P. interpretation is included in the report by G.P. Jenke. The author has revised this interpretation and further comments are listed below. Anomalies were graded as definite, probable or possible and they have been added to the plan accompanying this memorandum.

Line 70E. This line was surveyed with 50 metre dipoles and detailed with 25 metre dipoles near 7500 N. A weak, probable anomaly was detected at about 7500 mN to 7580 mN and confirmed at 7505N to 7530N with detailed measurements. This anomaly coincides with the main geochemical anomaly and also with a 'wooden post fence'. The fence was not obviously earthed and the anomaly may indicate weak mineralisation.

At the southern end of the line, near 7330N to 7380N an incomplete anomaly was detected suggesting a probable anomaly further to the south. A 'rabbit proof fence' crossed the line near 7380N, it appeared to be well earthed and may contribute to this anomaly, but the line should be extended southwards to check it. This would also coincide with a pronounced geochemical anomaly and therefore cannot be ignored.

A local zone of high resistivity at depth near 7430N and 7480N appears to indicate a distinct lithology, probably microdiorite although the geology is rather complex. South of 7530N a distinct increase in percent frequency effect (P.F.E.) suggests a lithological change with a higher background to the south. Although the geology is much more complex than this implies, it does coincide roughly with a boundary between tuffs and tuffaceous sediments to the north and microdiorite and rhyodacite to the south.

Line 71E 50 metre dipoles. A weak, poorly defined probable anomaly was interpreted near 7350N to 7400N due to a local resistivity low flanked by pronounced resitivity highs to the north and south. This anomaly also coincides with a geochemical anomaly but it is close to the 'rabbit proof fence' and therefore suspect.

The resistivity high near 7400N to 7500N, correlates with the similar feature on Line 70E and is probably due to the microdiorite. The southern resistivity high is incomplete but appears to correlate with rhodacite. The high background P.F.E. on this line is consistent with results on the southern half of Line 70E.

Line 73E 50 metre dipoles. A shallow, probable anomaly was interpreted at 7400N to 7450N, straddling the "rabbit proof fence". Fence responses are very difficult to predict but this local, shallow, high P.F.E. is typical of the sort of response one might anticipate from the fence. It does not coincide with a geochemical anomaly and is highly suspect.

A weaker, possible anomaly at 7550N to 7600N has no obvious cultural source and coincides with a geochemical anomaly. Although the anomaly is probably real, it is very weak and does not suggest significant metallic mineralisation. Drill hole DD75CC3, on Line 73/5E should have adequately tested this anomaly, together with the main geochemical anomaly.

South of 7400N, a pronounced increase in resistivity again coincided with the microdiorite intrusive.

Line 75E 50 metre dipoles. A weak possible anomaly at 7650N to 7700N is barely interpretable and unlikely to prove significant. A probable anomaly was indicated at 7450N to 7350N open to the south. It may be partly influenced by the 'rabbit proof fence' near 7450N, but appears to suggest a metallic source further south. The line should be extended southwards to check this possibility.

A pronounced resistivity high near 7700N to 7750N coincided with the band of "crystal tuff" identified as Unit A in the ground magnetic interpretation. A marked change in P.F.E. was noted near 7500N, similar to Line 70E, with a high background to the south.

Line 76E 50 metre dipoles. A weak, possible anomaly was detected at 7660N to 7710N, similar to the weak anomaly on Line 75E. A broad, probable anomaly was detected extending from about 7350N to 7500N, this anomaly occurs parallel with a well earthed "rabbit proof fence" and is probably influenced by it over most of its length. Near 7500N, just north of the "rabbit proof fence" there is a slight change in the response close to a geochemical anomaly. No significant metallic source is indicated but there could be weak mineralisation and local, deeper weathering.

A resistivity high at 7710N to 7760N again coincided with the mapped band of "crystal tuff" and a high resistivity at the southern end of the line appeared to coincide with microdiorite.

Line 76/5 E 25 metre dipoles. Detailed measurements on this line detected a shallow, weak anomaly at 7445N to 7470N, coincident with the "rabbit proof fence" but also close to a geochemical anomaly. Further south a shallow, broad probable anomaly was detected but its significance is not clear, it may also be partly influenced by the parallel "rabbit proof fence". Both of these anomalies should have been tested by DD75CC1 and the lack of significant mineralisation is certainly consistent with the I.P. results.

High resistivities were indicated but not completely outlined at the northern and southern ends of this line similar to results obtained on Line 76E.

Line 77E 50 metre dipoles. A very weak possible anomaly was detected at 7620N to 7700N, it may be partly influenced by a parallel "rabbit proof fence" to the east, but in any case, is unlikely to prove significant.

A poorly defined probable anomaly near 7420N to 7500N occurs close to a perpendicular "rabbit proof fence" and a geochemical anomaly. It is not pronounced and unlikely to prove significant. This zone has probably been adequately tested by DD75CC1.

Zones of high resistivity at the northern and southern ends of the line appear to be related to similar features to those described on Line 76E.

Line 82E 50 metre dipoles. A broad, shallow possible anomaly was detected at 7350N to 7500N. The anomaly was almost entirely defined by P.F.E. and its shape is typical of a shallow, flat lying or parallel metallic source. A parallel fence does exist close to the line but it had wooden posts and was not obviously earthed. At best, the anomaly must be considered suspect. A further possible anomaly at the southern end of the line is primarily due to a zone of low resistivity at depth and may indicate a metallic source further south.

Both zones appear to coincide with geochemical anomalies and the northern one should have been tested by DD75CC2.

A local zone of high resistivity near 7300N to 7400N also appears to coincide with microdiorite.

Line 82/5E 50 metre dipoles. A shallow, definite anomaly was detected at 7080N to 7180N, open to the south. It coincides with a "rabbit proof fence" and a geochemical anomaly. This anomaly should be checked by resurveying with 25 metre dipoles and extending measurements further to the south.

A resistivity high at 7280N to 7480N again coincided with microdiorite.

Line 87E 50 metre dipoles. This line was surveyed west of the gossan, which if projected should have been near 7900N to 8000N. Unfortunately, the power line and fences near 8000N prevented readings in this vicinity although there is some suggestion of an anomaly near 7950N. No other significant anomalies were detected.

Line 88E 50 metre and 25 metre dipoles. The gossan was mapped near 7980N on this line, closely coincident with a steel dropper fence, power line, etc.

The results are inconclusive, probable anomalies were detected with both 50 metre and 25 metre dipoles, close to the gossan but probably influenced by cultural features. No pronounced, definite anomaly was detected suggesting only limited, if any, sulphide mineralisation beneath the gossan.

Line 88/5E 50 metre dipoles. A weak possible anomaly was detected near 8000N, again possibly influenced by cultural features. There is no indication of significant sulphide mineralisation.

III. LABORATORY CORE MEASUREMENTS

Five core samples from the 115m - 122m interval in DD75 CC1 were submitted for laboratory measurements of resistivity and percent frequency effect by Geoex Pty. Ltd. in Adelaide. All five samples showed traces of sulphide mineralisation but none were sufficient to be of ecnomic interest. The results of the laboratory measurements are appended with this memorandum.

Laboratory measurements of resistivity can be misleading since they are highly dependent on the degree and salinity of water saturation. In addition, field measurements of apparent resistivity are usually influenced by a surface layer of less resistive overburden resulting in lower values of apparent resistivity. Under these circumstances more reliance is placed on measurements of P.F.E. as an indicator of I.P. response.

The five core samples were saturated with water by soaking but tended to dry out rapidly during measurement. Measured values of resistivity ranged from 1000 to 4000 ohm metre and no particular significance is attached to these measurements.

Measurements of P.F.E. ranged from 1.4 to 3.2, while not pronounced these values are certainly above background. It seems reasonable therefore to assume that greater ~~concentrations of similar~~ mineralisation should give recognizable I.P. responses in field measurements.

IV. CONCLUSION

Although no major geophysical targets were detected by any of the methods applied at Crosby Creek, neither were any significant zones of metallic mineralisation revealed by drilling. Since geochemical reconnaissance has been completed over all of the area of interest, and detailed geochemical surveying has been completed at Crosby Creek and Loyetea, there seems little point in considering additional airborne geophysics. The next phase of the exploration program should be detailed work designed to locate specific targets for drilling. The general area of interest has been defined by geochemistry and now detailed geophysics appears warranted.

It appears that the target mineralisation should be massive sulphides but, since it may possibly be predominantly sphalerite, it need not necessarily be a good electrical conductor. The most reliable method for the detection of this type of deposit is I.P. (and resistivity). The mineralisation is not expected to be magnetic but may have some structural association and the magnetic method could also prove useful.

As I.P. measurements have been made on several lines at Crosby Creek, without success, any additional measurements should extend beyond the area previously tested in the hope of detecting 'blind' deposits, related to the known geochemical anomalies but without a specific geochemical signature at the surface. In addition, some intermediate lines and extensions should be added to the existing Crosby Creek grid to ensure complete coverage and to test, for example, encouraging responses at the southern ends of Line 70E, Line 75E and Line 82/5E.

V. RECOMMENDATIONS

A routine I.P. and resistivity survey should be planned to cover all three grids; Crosby Creek, Loyetea North and Loyetea South. The choice of time or frequency domain I.P. is probably not critical but the author of this memorandum has more experience with frequency domain methods and therefore tends to prefer them. Dipole - dipole electrode array is recommended, with 50 metre dipoles on Lines 100 metre apart for a first pass. Additional intermediate lines, or measurements with other electrode intervals may be required to detail any anomalies detected on the first pass. All lines should be surveyed with a proton precession magnetometer and tied in to previous magnetic measurements at Crosby Creek.

A suggested I.P. program is listed below:

a. Crosby Creek - grid generally clear and easily accessible but numerous fences.

Line	Range to be Covered
84E	6750N - 7750N
83E	6750N - 7750N
82E	6750N - 7750N *
81E	6750N - 7750N
80E	6750N - 7750N
79E	6750N - 7750N
78E	7250N - 7750N
77E	one set up at 7500N *
76E	one set up at 7500N *
75E	one set up at 7500N *
74E	7150N - 7750N
73E	7100N - 7750N *
72E	7100N - 7750N
71E	7100N - 7750N *
70E	7100N - 7750N *
69E	7250N - 7750N

Beyond 69E the baseline should skew towards the north west and six more lines should be added at 100 metre intervals.

68E – 63E	one double set up on each line

The lines marked * would be either complete or partial repeats of earlier work. A selection should be repeated as a check, if they prove satisfactory there would be no need to repeat the rest.

The above program should represent about fifteen operating days for a geophysical crew, less if some of the repeats are omitted.

b. Loyetea North - grid partially cleared, no fences.

Line	Range to be covered.
19E	one set up at 6100N
20E	one set up at 6100N
21E	one set up at 6250N
22E	~~one set up at 6350N~~
23E	one set up at 6400N
24E	one set up at 6500N
25E	one set up at 6700N
26E	one set up at 6800N
27E	one set up at 6900N

This program should take about five operating days.

c. Loyetea South - grid not cleared, steep and inaccessible.

Line	Range to be covered
25E	4650N - 5300N
26E	4600N - 5350N
27E	4800N - 5400N
28E	4900N — 5450N
29E	4950N - 5500N
30E	4950N - 5450N
31E	5100N - 5600N

With due allowance for the rough terrain and inaccessible grid, this should take 8-10 operating days.

It is recommended that the I.P. survey should be carried out by a contractor as this would free company personnel for supervision, interpretation, magnetic survey where necessary, etc. Contract rates are variable, but usually average about $300.00 per operating day (without interpretation and reporting). The total cost for the above program would therefore be about $10,000.00 plus some allowance for contingencies (bad weather etc.). In addition, some allowance should be made for additional detail after the initial program if any anomalies are detected. This program should hopefully result in the definition of drilling targets for later testing.

If available, G.P. Jenke should be in the area during the survey to liaise with the geophysical crew, interpret results and complete additional magnetic measurements. The author of this memorandum would naturally be available for additional consultation if required.

This memorandum is an attempt to summarize a great deal of complex information and it may require further clarification. The author would welcome the opportunity to discuss the project further if the recommended program is to be carried out.

Robert J. Smith

ROBERT J. SMITH.
Geophysicist.

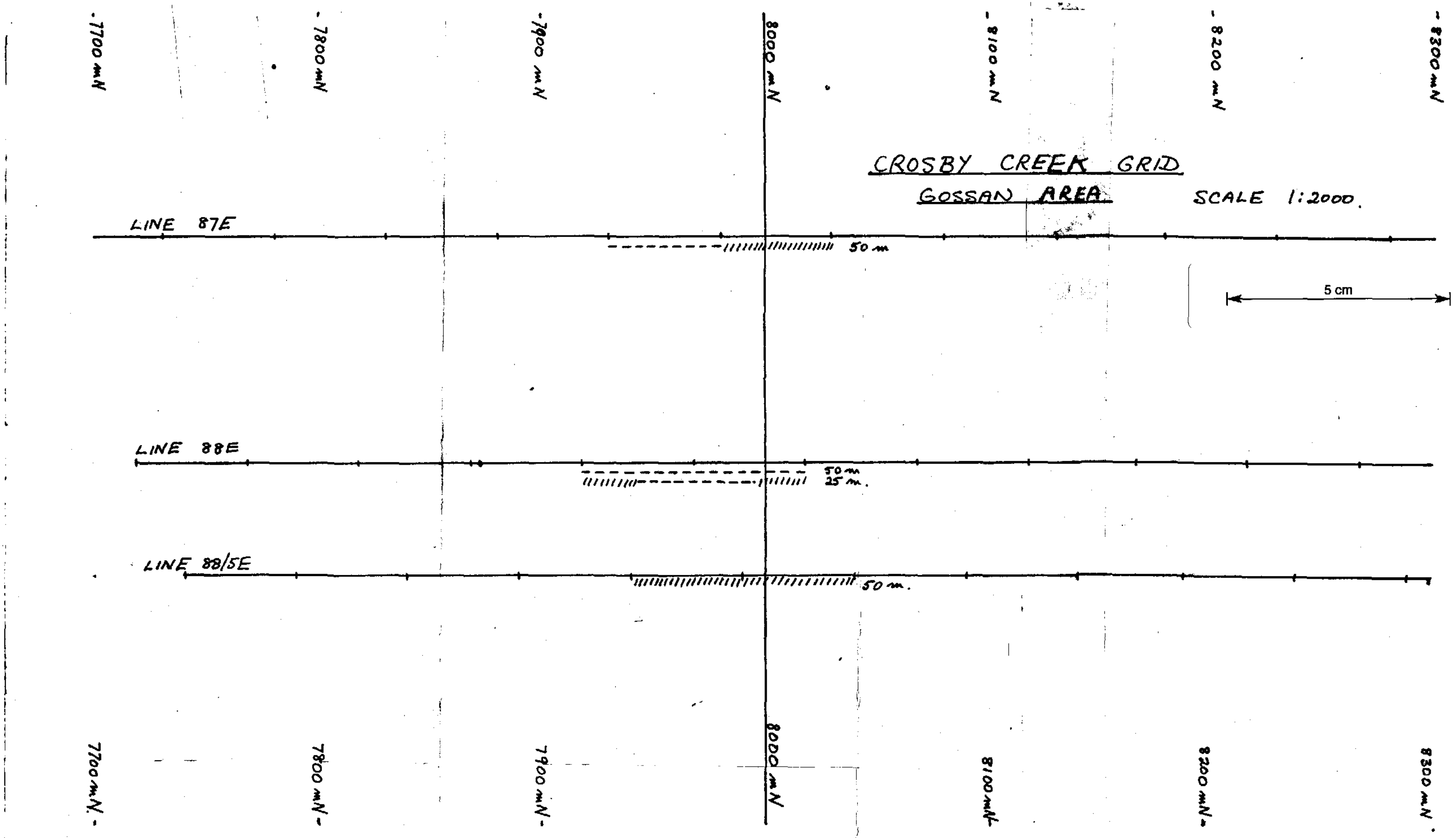
018

GEOEX PTY. LTD.

Submitted by R. J. Smith
Company
Area
Date Submitted 26/9/75
Date Tested 29/9/75
Tested by T. Wilson

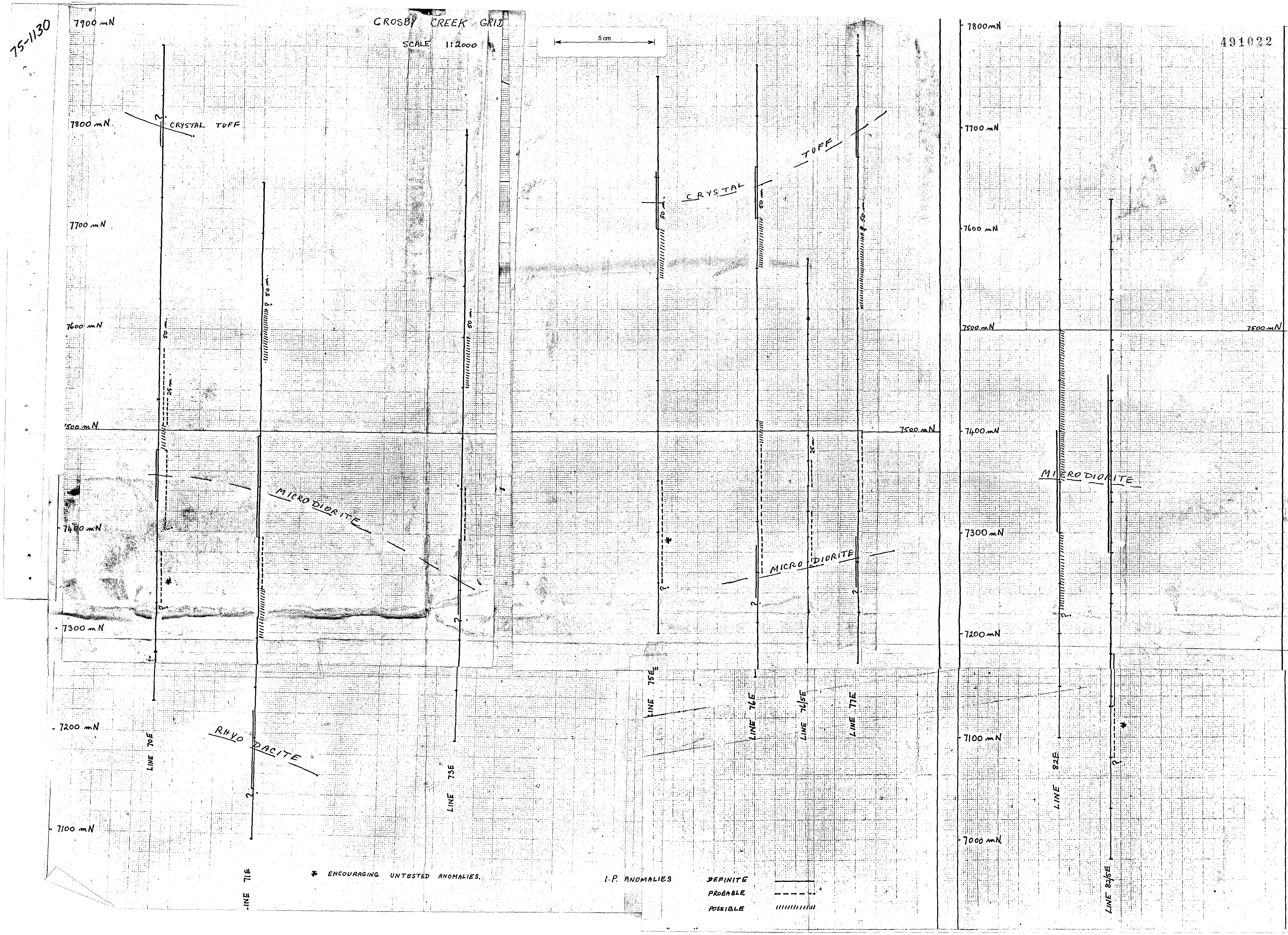
PHYSICAL PROPERTY ROCK TEST

Sample No. Client	Sample No. Geoex	Description	Dimensions: Cross Section X x Y or diam. (sq. cm)	Dimensions: Length between measuring electrodes (cm)	Magnetic Susceptibility c.g.s. units	Resistance K ohms.	Resistivity Freq 0.3 Hz 5.0 Hz. Ohm-metre	P.F.E. (%) Freq 0.3 Hz 5.0 Hz	Metal Factor
	A		7.5	4.9		88.0	1346.9	1.5	1.11
	B		7.25	5.7		132.8	1689.1	2.0	1.18
	C		4.75	5.6		477.6	4051.1	2.6	0.64
	D		6.25	5.6		306.0	3415.2	1.4	0.41
	E		7.25	2.6		82.0	2286.5	3.2	1.4



CROSBY CREEK GRID
GOSSAN AREA
SCALE 1:2000
5 cm
LINE 87E
50 m
LINE 88E
50 m
25 m.
LINE 88/5E
50 m.
7700 mN
7800 mN
7900 mN
8000 mN
8100 mN
8200 mN
8300 mN

491021


75-1130
491022
CROSBY CREEK GRID
SCALE 1:2000
5 cm
7900 mN
7800 mN
7700 mN
7600 mN
7500 mN
7400 mN
7300 mN
7200 mN
7100 mN
7000 mN
CRYSTAL TUFF
MICRODIORITE
RHYO DACITE
LINE 70E
LINE 71E
LINE 73E
LINE 75E
LINE 76E
LINE 76.5E
LINE 77E
LINE 82E
LINE 82.5E
50 m
25 m
* ENCOURAGING UNTESTED ANOMALIES.
I.P. ANOMALIES
DEFINITE
PROBABLE
POSSIBLE