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TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

FEBRUARY 1988 TO FEBRUARY 1989

TEXT AND APPENDICES 1-14

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V1/4

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PREPARED BY:
A. W. McNEILL,
GEOLOGIST.

ISSUED BY:
D. B. WALLACE,
REGIONAL MANAGER.

MARCH 1989.

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1. DDH MAC-20 - Coarse lapilli volcaniclastic. (430638).
2. DDH MAC-22 - Eutaxitic volcaniclastic. (430767).

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PLATES

Plate	Scale	Title
MAC237	1:25,000	Exploration activity, February 1988-February 1989.
MAC114	N/S	Surface geological mapping legend.
MAC115	N/S	Geological legend, 1:1000 scale DDH sections.
MAC161 A	1:10,000	Interpretive geology
MAC161 B	1:10,000	Interpretive geology
MAC161 C	1:10,000	Interpretive geology
MAC89 BB	1:2,500	Outcrop geology
MAC89 CC	1:2,500	Outcrop geology
MAC89 EE	1:2,500	Outcrop geology
MAC89 FF	1:2,500	Outcrop geology
MAC89 KK	1:2,500	Outcrop geology
MAC89 MM	1:2,500	Outcrop geology
MAC89 SS	1:2,500	Outcrop geology
MAC89 ZZ	1:2,500	Outcrop geology
MAC89 3	1:2,500	Outcrop geology
MAC89 4	1:2,500	Outcrop geology
MAC89 5	1:2,500	Outcrop geology
MAC89 6	1:2,500	Outcrop geology
MAC89 7	1:2,500	Outcrop geology
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MAC223	1:1,000	Section 13450N DDH MAC-20
MAC223 A	1:1,000	DDH MAC-20 - Core Grind Geochemistry
MAC225	1:1,000	Section 19400N DDH MAC-22
MAC225 A	1:1,000	DDH MAC-22 - Core Grind Geochemistry
HT37d	1:250	Costean 4550N/4400E.
MAC232	As shown	VLF Survey - Southwell River area.
MAC233	As shown	VLF Survey - Medway River area.
MAC234	1:1,000	Mt. Charter - Massive barite - rock chips.
MAC235	1:10,000	South Hatfield - Ground magnetic profiles.

1. SUMMARY

Areas of exploration activity on the Lake Mackintosh licence for the period February 1988 to February 1989 are shown on plate MAC237. Major results are :

i) Mapping and -80# stream sediment sampling, north and east of Hellyer has located prospective areas, the Medway River and east of the Hellyer portal, in the Southwell Sub-group which conformably overlies the Que-Hellyer volcanics. Drilling of two holes (821m) to test for mafic volcanics below Tertiary Basalt cover near Middlesex Road was unsuccessful and has downgraded the potential of this area.

ii) South of the Hatfield River an area of probable Central Volcanic Complex lithologies, with weakly anomalous base metal values in a rock chip sample, were found to conformably underly Cambrian mica sandstone, and are considered to be a target for Rosebery style VMS.

iii) Gold (45 ppb max.) and base metal (Cu, Zn) -80# stream sediment anomalies were generated in the Henty Fault Zone and are considered to be high priority for follow-up.

iv) Possible hangingwall style alteration in Central Volcanic Complex lithologies was tested by drilling (DDH MAC 16 367m). Weak Cu, Zn mineralisation was intersected but downhole geophysics failed to provide any encouragement. Stream sediment sampling, both -80# and BCL was likewise not encouraging.

v) A poorly defined UTEM anomaly at I Zone, adjacent to a Pb soil anomaly and a lense of probable Hellyer basalt is being tested by further UTEM.

vi) Re-assaying of core (e.g. MC-1 110m 0.9 g/t Au, 16 g/t Ag (core grind)) and rock chip sampling, maximum 3.8 g/t Au, 77.5 g/t Ag, indicate potential for a large tonnage low grade precious metal resource at Mt. Charter, while soil sampling has located a previously untested Ag-Au-As-Ba anomaly, of equal tenor to the main Mt. Charter zone, in the hangingwall of this alteration system.

2. INTRODUCTION

The Lake Mackintosh licence (EL 106/87) was granted to Aberfoyle Resources Limited on February 5, 1988 as a result of the Hellyer Mine Agreement Ratification Act 1987. The licence comprises 135 km^2 previously covered by EL's 2/70 (Mackintosh) and 15/73 (Hatfield) and encloses the 20.2 km^2 of CML's 68M/84 and 103M/87 (around the Que River and Hellyer mines and facilities).

This report summarises exploration completed on the Mackintosh licence, excluding the CML's, for the period February 1988 to February 1989.

3. SOUTHWELL RIVER - LEVEN RIVER AREA

3.1 Introduction

The Cambrian volcanics and younger cover rocks of this area have been under-explored; work being limited to a stream sediment survey (1971-1972) and airborne EM coverage (Webster 1975). One airborne EM anomaly (4/75) was recommended for follow-up but this was apparently not carried out due to rugged terrain and difficult access.

Much of this area has been mapped, at 1:25,000, by Komyshan (1986) and Vicary and Pemberton (1988) as part of the Department of Mines MRV project.

3.2 Geology

The 1:2500 outcrop geology of this area is shown on sheets MAC89/5, 6, 7, 14, 15, A1 and A2 and 1:10,000 reconaissance mapping by MAC193/A (See plate MAC114 for legend). A geological interpretation is presented as plates MAC161 A and B.

Conformably overlying the QHV and Que River Shale is the upper rhyolitic sequence (or the Southwell sub-group of Corbett 1988 (pers. comm)), a sequence of felsic volcanics and sediments that passes conformably into Tyndall Group equivalents and Cambro-Ordovician Owen Conglomerate. These are all unconformably overlain by Tertiary flood basalts and sediments of highly variable thickness.

Individual rock types, as used on plate MAC161A and B, will be described while petrographic descriptions of selected specimens are included in Appendix 1.

3.2.1 Rhyolitic intrusives and extrusives (R.L. and R.D.L.)

Immediately east of the Hellyer portal a large body of massive to flow-banded rhyolitic intrusive cuts the stratigraphy at a low angle and is terminated north of the Cradle Mt. link road by a fault. This albite-quartz-phyric body is pervasively devitrified and although dominantly intrusive is at least in part extrusive i.e. sample 427369 is an autobreccia.

A second rhyolitic body S.W. of Mt. Cripps may be continuous with a rhyolitic unit mapped on the Cradle Mt. link road. This unit is quite variable in nature from massive to flow-banded, autobrecciated and vesicular in part but, is dominantly albite-quartz-phyric. This body is considered to be partially extrusive due to the presence of hyaloclastic textures (e.g. 427407) predominantly on its eastern margin.

In the Medway River area massive to brecciated rhyolite is dominantly quartz-, with minor feldspar and altered amphibole, - phyric. Whether this body was intrusive or extrusive is unclear, however, it appears to have been a topographic high in the Late Cambrian as it is overlain by Owen Conglomerate with no intervening Tyndall Group correlate.

3.2.2 Mica Sandstone, grit, shale (Mss)

This unit is highly variable but is dominated by green-brown fine to coarse grained mica sandstone, some units being similar in appearance to the Animal Creek Greywacke (of Collins 1981), interbedded with grey to black shale, often laminated and dolomitic, and polymict grit. The polymict grits (e.g. 427316) are dominated by greenschist facies pelitic and quartzite detritus, with minor dolomitic or limestone clasts, and very little volcanogenic material. Rare, fine to medium pebble conglomerate units occur at 14510N, 6720E and 14640N, 6230E and have the same general appearance as the Owen Conglomerate but, have an appreciable volcanogenic component.

The mica sandstone may contain volcanogenic detritus, normally quartz and feldspar crystal fragments with rare felsic lava clasts, and may be interbedded with thin volcaniclastic units often of Flv type.

3.2.3 Felsic volcaniclastic (Flv)

These are typically mottled green-grey sericitic volcaniclastic lithologies with abundant feldspar-phyric, chloritic or occasionally sericitic "fiamme" and variable amounts of felsic lava, ash volcaniclastic and quartzite clasts. Quartz and feldspar crystal fragments are common in an often shard rich matrix. Clasts are generally lapilli size but some ash grade sediments (e.g. 427440) were recorded as were shale interbeds and some reworked and slumped volcaniclastics (e.g. 427493).

3.2.4 Tyndall Group volcaniclastic (TV_2)

This lower unit comprises rhyolitic to dacitic medium lapilli to ash volcaniclastic and shale. They are pink, often Mn stained and crystal rich, some with altered ferromagnesian crystals, with prominent pink felsic lava fragments. Some samples (e.g. 427386) have a glassy shard rich matrix with ignimbritic characteristic while others (e.g. 427393) appear to be epiclastics with pelitic and cherty fragments.

Around 13950N 7390E, typical volcaniclastics are interbedded with brown laminated shale, containing agnostid and polymnid trilobites (latest Middle Cambrian age - K. D. Corbett pers. comm.) and felsic volcaniclastics similar to the Flv in the underlying Southwell Sub-group.

The Tv_2 lenses out south west of Mt. Cripps and is terminated abruptly by Southwell sub-group lithologies near the Medway River, however there is little evidence that this contact is faulted as indicated by Vicary and Pemberton (1988).

3.2.5 Tyndall-Group Volcaniclastic Conglomerate (Tv_1)

Conformably overlying TV_2 is a unit of red-purple hematitic coarse lapilli to breccia volcaniclastic, with clasts to 0.4m diameter, composed dominantly of feldspar-phyric ?andesitic lava with a trachytic groundmass, and lesser felsic material (see 427443 for detailed description) interbedded with lenses of Tv_2 type material. This unit is a lithological correlate of the Dora-Selina conglomerate, i.e. the upper part of the Tyndall Group.

3.2.6 Owen Conglomerate (Ocg)

North of the Cradle Mountain link road the Owen Conglomerate is dominated by correlates of the upper owen (i.e. COou of McNeill 1987) a pink to grey, fine to medium pebble conglomerate interbedded with medium to coarse quartz sandstone. Characteristic of this unit are angular to sub-angular white to pink chert clasts and heavy mineral concentrations. At 14680N, 8580E this unit conformably overlies Tyndall Group volcaniclastics, however around 13850N 8270E the volcaniclastics are conformably overlain by a pink-medium to coarse-pebble conglomerate with quartz-phyric rhyolite clasts at its base and minor pink sandstone lenses, a probable correlate of the middle Owen (i.e. COom). This massive unit forms the base of the Owen Conglomerate south to Mt. Cripps where it is overlain by thinly bedded medium to coarse pink quartz sandstone with obvious channels and cross-beds (the lower-upper Owen of Corbett 1988 pers. comm.).

3.2.7 Siluro-Devonian (S-D)

Reconnaissance mapping has located a small window, in the tertiary basalt, of grey to pink quartz sandstone at the end of Painter Road (See plate MAC161A). Fossils from this outcrop suggest a Silurian age and probable correlation with the Crotty Quartzite (P.W. Baillie Pers. Comm. 1988).
The area south of the Cripps fault on the Cripps Road (10000N, 9350E) and creek to the east are dominated by light green-grey well bedded quartz-sandstone (e.g. 427442) probable correlates of the Eldon Group.

3.2.8 Tertiary Basalt (TB) and associated Silcrete

Much of this area is covered by massive to highly vesicular basalt, generally seen as rounded dark brown-red oxidised boulders in a red-orange soil. No detailed examination of the basalt has been made but petrography from DDH BDP-10 indicates that it is dominantly olivine basalt.

Silcrete, or "Grey Billy", occurs at the contact between Tertiary basalt and siliceous basement sediments. It varies from a coarse sandstone to a breccia with "clasts" of the underlying lithologies, and in many cases appears to grade into the underlying sediments. The silcrete weathers to sub-rounded boulders with prominent low angle jointing.

3.3 Alteration and Mineralisation

The dominant alteration style, pervasive sericite-quartz-carbonate±chlorite of variable intensity, occurred in all volcanic rocks examined and is attributed to low grade regional metamorphism, probably during Devonian Deformation, rather than a hydrothermal event.

Near 16450N, 7600E prominent outcrops of rhyolitic lava are pervasively and intensely hematite altered. Adjacent outcrops are brecciated with a sericite rich matrix, supporting hematite altered rhyolitic fragments. In thin section the alteration comprises ultrafine hematite disseminated through the matrix and hematite and sericite replacing probable pyroxene phenocrysts. Hematite alteration is widespread in this area but, is generally limited to within 1-3m of the contact with overlying Owen Conglomerate and associated with weak hematite veining. Reconnaissance rock-chip sampling of this alteration type (plate MAC209) suggest it is not associated with base or precious metals.

South west of Mount Cripps at 11400N, 8150E disseminated and vein pyrite occur in a massive to brecciated lava, adjacent to sheared and sericite altered lava, however, no anomalous stream sediment (section 3.5) rock chip analyses (Appendix 3) were returned from this area. To the north, around 11650N 7520E, grey silicified and pyritic volcanics produced weak Au (13 ppb) and As (27 ppm) anomalies in rock chips and an As - 80# stream sediment anomaly (section 3.5.1).

On the Cradle Mountain Link Road (13080N, 6100E) a rhyolitic intrusive hosts barite veins, to 30 cm thick, and is in faulted contact with fuchsite altered volcaniclastic grit. This fuchsite alteration persists 100m down sequence and may be related to the weak alteration around, 12799N, 6470E, also spatially related to the rhyolite. It would appear that fuchsite occurs only in the more porous volcaniclastic grits and mica sandstone and not Flv type lithologies.

The association of fuchsite and barite is suggestive of hangingwall alteration as seen above Hellyer however, the lack of carbonate alteration and sulfides is a major difference. Channel sampling around the rhyolite margin has been completed but results are not yet to hand.

3.4 Structure

Bedding in the Southwell sub-group consistently dips and faces north to north-east excepting in one area on the Cradle Mt. Link Road, 13950N, 7390E, where dips are dominantly east to southeast, the reason for this is not clear but, Vicary and Pemberton (1988) suggest it is related to faulting. Lithological trends suggest the continuation of the Hellyer anticline north of the Cradle Mt. Link Road, and possibly a synclinal structure East of the Southwell River. Very few minor folds, excepting these associated with shear zone and faults were noted, the most prominent being a NW trending structure, ?2nd phase of Devonian deformation, at 13500N 6800E. Folding is more obvious in the overlying Owen Conglomerate. A N-NE trending syncline, with steep to slightly overturned western limp and shallower eastern limb occurs at Mt. Cripps while a major anticline, of similar orientation, occurs in the headwaters of Medway River. This structure appears to have been complicated by NW trending minor folds.

Minor faults in the volcanics have a dominant NW-SE trend and are steeply dipping both to the east and west. The major fault in this area is the Cripps fault, separating Cambrian and Siluro-Devonian sequences which has an E-W orientation southwest of Mount Cripps. Reconnaissance mapping (Plate MAC193F) indicates that this fault curves into a N-NE trend south of the Mt. Cripps and disappears under Tertiary Basalt cover.

3.5 Geochemistry

3.5.1 Stream Sediment

The 1972 Aberfoyle survey, over part of this area, produced no obvious anomalies however, later orientation studies (Webster and Skey 1979, Van Moort 1982) suggest that the sample density, approximately 1 per km^2, and relatively coarse size fraction analysed, -20#, may not have been optimum. The 1988 survey was designed with a sample density of approximately 5 samples per km^2, with samples collected above creek junctions or at 3-400m intervals where no junctions were encountered. Two or three kilograms of wet active stream sediment were collected, dried and sieved to -72# in the laboratory. No sieving was used in the field.

A total of 108 samples were collected and analysed for Cu, Pb, Zn, Ba, As, Ag and Au. Sample locations are shown on plate MAC203A, B and F while analytical results are presented in appendix 2 and plates MAC204A, B and F. The raw data, for Cu, Pb, Zn, Ba and As, was plotted on probability paper to determine threshold values using the method of Sinclair (1974). Results are tabulated below :

Element	Background (ppm)	Weakly anomalous	Highly Anomalous
Cu	25	120	305
Pb	15	70	130
Zn	55	340	400
Ba	400	1100	1100
As	-	-	21

The curve obtained for As, a partial bimodal curve, indicates that insufficient samples were taken to define a statistically anomalous population. The threshold was therefore determined by the mean + 2 standard deviations.

Due to the large number of Au and Ag analyses below detection limit, thresholds were set at 20 ppb and 1.5 ppm, respectively, by visual examination of the data. Several anomalies were defined and these are detailed below.

i) 10700N, 6800E. 1st order anomalous As, Pb, Zn and 2nd order Cu occur in two samples from this creek draining east from the Hellyer Mill Site. It was initially considered that this anomaly may be due to contamination from construction work however, most of the construction area is in the catchment of streams draining to the north-north east. The geology of this area is relatively poorly known and its catchment has not been covered by soil geochemistry.

ii) Six samples draining the ridge immediately east of the Hellyer portal produced first order As, Pb and Zn and second order Cu anomalies. These creeks drain the margin of a large rhyolite sill, and are also centred around airborne E.M. anomaly 4/75. This anomaly may be related to vein style mineralisation on the margin of the rhyolite or leakage on the rhyolite-volcanic contact from a VMS at depth.

iii) Single point Au and As anomalies around 10000N, 8000E. Mapping has not located an obvious source for this anomaly.

iv) A first order Pb and 2nd order Zn anomaly, to the west, and an As anomaly, to the east around 11520N, 7900E. Pyrite-silica altered volcanics occur upstream of the As anomaly.

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v) A first order As and 2nd order Cu anomaly at 13200N, 6200E may be sourced by veining on the margin of a rhyolite intrusive.

3.5.2 Rock Chip

A total of 54 samples were analysed and results are presented in appendix 3 and on plate MAC209; see plates MAC89/5, 6, 7, 14, 15, A1 and MAC193A for locations.

Base and precious metal values are all low. Weakly elevated Zn (max. 245 ppm in 428417) and Au (max. 13 ppb in 427416) occur in the major creek around 10450N, 7750E but have no obvious source while a single high Ag value (2.5 ppm in 427420) occurs in a Flv type lithology interbedded with Tyndall Group volcaniclastics. Elevated As (27 ppm) and gold (13 ppb) in an altered volcanic (427411) may be related to stream sediment anomaly (iv).

3.6 Geophysics

3.6.1 VLF-EM

Two reconnaissance VLF lines were read, using a sabre model 26 unit, in the Medway River area and three lines read over Airborne EM anomaly 4/75. Results are presented on plates MAC232 and 233. Both Japanese and Australian sources were used in the case of anomaly 4/75 due to its north-south orientation. No anomalies were detected by either survey.

Re-examination of the anomaly 4/75 data, by E.T. Eadie, indicated that the anomaly was very weak and coupled with the lack of a VLF response considerably downgrades this anomaly.

3.6.2 EM Depth-Sounding

Two 1 km lines near Middlesex Road were read with Sirotem, using 100mx100m loops, and EM-37 to determine the thickness of Tertiary Basalt, prior to drilling. Results and interpretation of these surveys are presented in appendix 4.

3.7 Diamond Drilling

3.7.1 DDH MAC-20

Geology

The discovery of Andesitic-Basaltic volcanics in DDH MCPD-1,2 and 3, by Pan Continental on E.L. 14/85, raised the possibility of a mafic complex, either the Que-Hellyer volcanics or a similar complex higher in the sequence, extending beneath Tertiary Basalt cover into the N.E. corner

of E.L. 106/87. DDH MAC-20 was sited near Middlesex Road (see plate MAC161A for location) as this area lies on the extrapolated Que-Hellyer-Charter trend, approximately 9 km north of Hellyer, and a combination of mapping, in the Medway River area, and drill hole, BDP-10, data indicated that Post-Cambrian cover may be absent. The final collar location was determined by the Sirotem and EM-37 depth sounding surveys (Section 3.6).

A detailed log and petrographic report are included as appendix 5 while a section of the hole is presented as plate MAC223. A summary log is as follows :

0-3.0m	Tricone.
3.0-49.5m	Massive to brecciated Tertiary Basalt.
49.5-51.4m	Tertiary sediments.
51.4-159.4m	Coarse lapilli to ash polymict volcaniclastic.
159.4-184.0m	Dominantly ash to fine lapilli polymict volcaniclastic.
184.0-309.9m	Interbedded mica sandstone, grit and shale with minor ash volcaniclastic. Faulted contact to:-
309.9-347.6m	Fine-medium lapilli polymict volcaniclastic.
347.6-368.3m	Polymict breccia volcaniclastic with grey carbonate rich clasts (Figure 1). Abrupt conformable contact to:-
368.3-397.5m	Eutaxitic ash to fine lapilli volcaniclastic.

The upper unit of polymict volcaniclastic is considered to be transitional from Tyndall Group to Southwell sub-group, as above 105m it contains clasts of dark-green feldspar phyric to vesicular ?Andesitic lava and scattered micaceous quartzite, typical of the Tyndall Group. Below 105m the volcaniclastic contains felsic lava and sericitic "fiamme" clasts typical of the Southwell sub-group Flv type units. From 159.4m to 397m lithologies are direct correlates of the Flv and Mss, although they have a generally coarser grainsize and wider range of clast-types. Thin section petrography (Appendix 5) indicates that the Mss correlates contain scattered clasts of altered basic lava, the source of which is unknown.

Mineralisation is limited to trace disseminations of pyrite and scattered carbonate-quartz-pyrite±sphalerite veins. Pyritic chert clasts are a minor component throughout the section. Lithologies are regionally quartz-sericite±carbonate altered but no hydrothermal overprint is obvious.

Core orientation measurements indicate that the sequence is moderately southwest dipping (e.g. 54° to 240° at 196.6m) between 196 and 310m.

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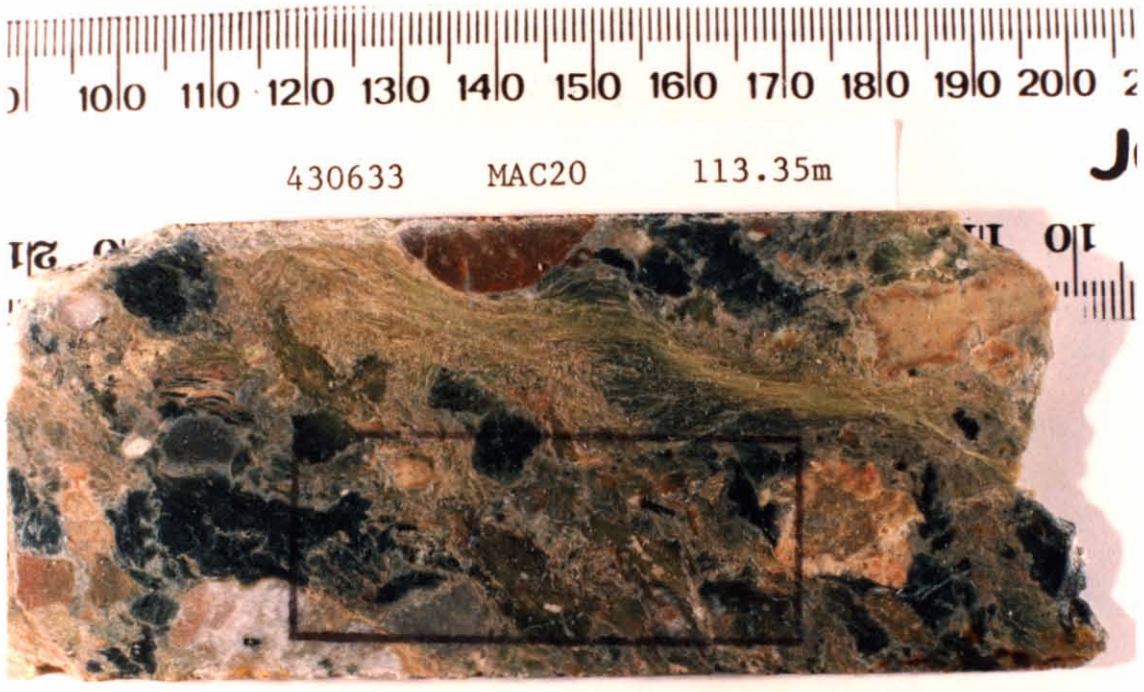

FIGURE 1: DDH MAC-20, Coarse grained mass flow unitswith clasts of grey carbonate rich material.

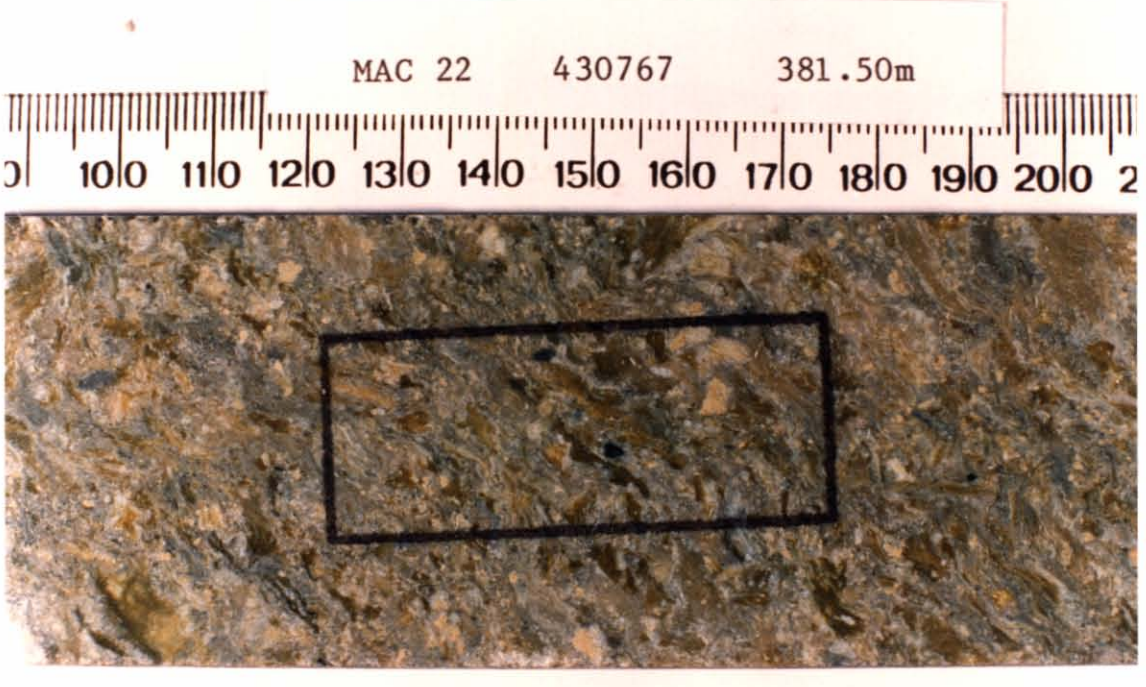

FIGURE 2: DDH MAC-22, Typical fine grained eutaxitic volcaniclastic similar to the flv units seen at surface.

Geochemistry

The complete length of MAC-20 was core-ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag in addition the Tertiary basalts were analysed for Cr, Ti, Zr, Y while the volcanics were asayed for Au. Samples were selected on lithological boundaries or over approximately 10m intervals from areas of uniform lithology. Results are presented as plate MAC-223A, and in appendix 6.

Precious and base metal values in the Cambrian volcanics are generally low but, from 287-309 weakly elevated gold (21 ppb max.) Pb (105 ppm max.) Zn (500 ppm) and As (48 ppm) occur in a black shale unit with obvious syngenetic pyrite bands. A copper high (355 ppm) from 171 - 182.5m has no obvious source.

Lithologically the volcanics are rhyolitic to dacitic (see appendix 5 for analyses) based on the Zr/Ti ratio and low Cr contents while the sandstone and grits have high Cr values, similar to the Animal Creek Greywacke, probably due to detrital chromite.

Geophysics

MAC-20 was cased with PVC and read with DHEM (EM-37). No off-hole conductors were detected. Results of the survey are included as appendix 9.

3.7.2 DDH MAC-22

Geology

Following the failure of MAC-20 to intersect mafic volcanics a step out of 900m to the north was made for MAC-22 (see plate MAC161A for location). Assuming the southwesterly dips determined in MAC-20 remained constant, then MAC-22 should have tested deeper in the sequence.

A detailed log and petrographic report are included as appendix 7 while a section of the hole is presented as plate MAC225. A summary log is as follows :

0-3.8m	Tricone.
3.8-122m	Massive to brecciated Tertiary Basalt.
122-124.3m	Tertiary sediments.
124.3-144.2m	Owen conglomerate. Faulted contact to:-
144.2-175.4m	Mica sandstone and grit with minor shale.
175.4-214.9m	Polymict fine to coarse lapilli volcaniclastic.
214.9-239.9m	Eutaxitic volcaniclastic interbedded with shale and mica sandstone.

239.9-247.5m	Mica sandstone and shale.
247.5-264.1m	Eutaxitic sericitic volcaniclastic.
264.1-277.3m	Mica Sandstone.
277.3-294.0m	Eutaxitic volcaniclastic with minor shale and sandstone.
294.0-396.0m	Polymict fine to coarse volcaniclastic (Figure 2) with minor sandstone and grit intervals (e.g. 348.6-352.9m). Faulted contact to:-
396.0-424.3m	Rhyolitic lava. Vesicular in part.

The Owen Conglomerate comprises pink to green fine pebble conglomerate and sandstone, with prominent chert clasts and minor detrital heavy minerals, a probable correlate of the Upper Owen. Clasts of basaltic and rhyolitic lava (Appendix 7) suggest that this unit forms the base of the Owen Conglomerate in this area. The Mica sandstone directly underlying this unit is patchily hematite altered for ~20m below the contact, probably as a result of remobilisation of iron from the conglomerate during Devonian deformation.

The volcano-sedimentary sequence is generally similar to that intersected in MAC-20 and would appear to be a series of volcaniclastic mass flows separated by periods of shale and sandstone deposition. The major differences with the MAC-20 section are in the relative abundance of eutaxitic volcaniclastics and generally finer grain size.

Mineralisation is restricted to disseminated pyrite and pyritic chert clasts in volcaniclastics and scattered quartz-carbonate-pyrite-sphalerite veins throughout the section. Rare syngenetic sphalerite has been recorded in the mica sandstone (430765 - appendix 7).

Sericite-quartz-carbonate alteration in pervasive and appears to be a low grade regional metamorphic overprint.

Geochemistry

The interval below the Owen Conglomerate (i.e.144.2-424.3m) was core ground and samples analysed for Cu, Pb, Zn, Ag, Au, Ba, As, Cr, Ti, Zr. Results are presented as plate MAC225A, and in appendix 8.

The Zr/Ti ratios indicate that the sequence is rhyolitic excepting the uppermost volcaniclastic unit (175.4 - 185.9m) which is dacitic. High Cr values, upto 660 ppm, occur in mica sandstone and shale units and are probably attributable to detrital chromite.

Precious metal values are all low, however base metal peaks of 700 ppm Pb and 1000 ppm Zn, with elevated As (41 ppm max.) occur in mica sandstone (259-277.3m) described as containing syngenetic sphalerite (Appendix 7). The interval 166-173m has

relatively high Cu (135 ppm) and As (37 ppm) possibly associated with pyritic patches in sandstone and shale.

Geophysics

A blockage at 404m prevented casing the entire hole with PVC, and at the time of writing the hole had not been read with DHEM.

3.8 Summary and Recommendations

Conformably overlying the QHV and Que River Shale is a NE to E dipping sequence of rhyolitic lava and intrusive, volcaniclastic, sandstone and shale (the Southwell sub-group). These are overlain by Tyndall Group volcaniclastics which in turn are overlain by Owen Conglomerate. However, around the head waters of the Medway River, rhyolite lava or intrusive flanked by volcaniclastics is overlain by Owen Conglomerate, with no intervening Tyndall Group, suggesting a topographic high in the Late Cambrian. This is a similar stratigraphic setting to the Red Hills, and thus may be prospective for Rosebery Style VMS. Further exploration of this area, by detailed mapping, soil sampling and ground magnetics, is recommended.

The possibility of QHV type volcanics occurring near Middlesex Road beneath Tertiary basalt cover has been tested by two drill holes, with negative results, downgrading the prospectivity of this area.

Major base metal stream sediment anomalies, (i) and (ii), near the Hellyer Portal and a lower order anomaly, (iv), associated with pyrite-silica altered volcanics are recommended for follow-up.

4. NORTH HATFIELD

4.1 Introduction

Previous reconnaissance mapping by Aberfoyle Exploration (McNeill 1989B) and mapping by Komyshan (1986) indicated that an unexplored window, in Tertiary Basalt, of Cambrian sediments extended from the Cradle Mountain link road to south of the Hatfield river. Department of Mines drilling (DDH BDP-6) intersected Siluro-Devonian sediments below Tertiary basalt to the north of this window, and as exploration through both Tertiary Basalt and earlier cover is not feasible, then areas where such cover occurs are suitable for relinquishment in the first phase of E.L. reduction in 1990.

4.2 Geology

A programme of mapping, both 1:10,000 (plate MAC193B and 161A) and 1:2,500 (plate MAC 89/ZZ, 3 and 4), and rock-chip sampling (Appendix 10) was completed to initiate exploration in this area.

Exposures on the Cradle Mountain link road are dominated by grey-green mica sandstone and black shale similar in appearance to the Animal Creek Greywacke with rare interbedded crystal rich volcaniclastics, folded by moderately open shallowly NE and SW plunging structures and cut by dominantly SE trending steeply east or west dipping faults, often associated with silicification and quartz veining of adjacent sandstones. These sandstones become "dirtier" to the east and grade into sandstones similar to those from the Southwell Sub-group.

North of the Cradle Mountain link road the volcaniclastic component increase (e.g. 427809) in generally fine grained sandstones interbedded with mica sandstone. Around 12700N, 1700E is conspicuous float of yellow-brown massive to vesicular dacitic lava (e.g. 427814) sericite-pyrite altered in part. Two short costeans at 12658N, 1605E and 12725N, 1575E, exposed outcrop of this lava and in the easternmost, interbedded lava and mica sandstone, with veinlets and disseminations of pyrite adjacent to lithological contacts As the mica sandstone appears to dip off the lava, it is suggested that the lava is younger, and possibly a correlate of the central volcanic complex. older?

Reconnaissance mapping failed to locate the windows of Owen Conglomerate (CQ 907029) and Cambrian Volcanics (CP 992990) indicated by Barton et al (1966) or any further windows on EL 106/87 however, an area of silcrete, containing blocks of probable Siluro-Devonian quartz sandstone, and outcrop of pink-green quartzite (Moina Sandstone or upper-upper Owen Conglomerate) were located in the Mines Department exempt area around 20000N, 2500E.

4.3 Geochemistry

4.3.1 Rock Chip

Samples from this area (Appendix 11, see plate MAC193A for location) generally yielded low base metal values the exception being sample 427814 (525 ppm Pb, 1300 ppm Zn, 1.0 g/t Ag) a weakly pyrite altered dacitic lava. Sampling of the costeans (12685N and 12725N) has been completed but assay results had not been received at the time of writing.

4.4 Summary and Recommendations

A window of patchily sericite-pyrite altered dacitic lava, flanked by probable basal mica sandstone (Correlate of the Animal Creek Greywacke), may be a correlate of the Central Volcanic Complex, and thus prospective for Rosebery style mineralisation. Follow-up by gridding, soil sampling and ground magnetics is recommended for 1989. Further geological information will be provided by a planned DOM drill hole to be collared at approximately 12500N, 1700E.

Reconnaissance mapping failed to locate any windows of volcanics or Palaeozoic cover in the Tertiary Basalt, although outcrop of probable Siluro-Devonian and Ordovician lithologies were located to the north of the E.L.

Further 1:10,000 scale mapping and possibly stratigraphic drilling is required to test interpretations of the sub-basalt geology in this area.

5. HENTY FAULT ZONE

5.1 Introduction

The Henty Fault Zone (HFZ) is now considered to be highly prospective for gold, following the discovery of the Henty Prospect (EL 9/66, RGC; a 1/2 mt 10 g/t resource) and the lakeside prospect (Billiton/EZ, EL 1/62) to the South. A secondary target is considered to be North Mount Farrell style Pb-Ag mineralisation.

Previous exploration ofthe 9 km strike length ofthe HFZ, in EL 106/87, is limited to partial coverage by 1:2500 geological mapping and reconnaissance rock-chip sampling and mapping around Lake Mackintosh.

5.2 Geology

1:2500 scale mapping is covered by sheets MAC89/SS, KK, EE and FF while a 1:10,000 scale geological interpretation is included on Plate MAC161B. A petrological report is included as Appendix 12.

The HFZ is well defined south of 5200N however, to the north its position is less obvious, and the Geological setting more complex.

To the south the fault zone contains a mixed sequence of variability sheared, generally west dipping, mica sandstone, shale and volcaniclastic. As the fault is crossed there is a dramatic decrease in the intensity of deformation and a sequence of massive, west dipping, mica sandstone (an equivalent of the Animal Creek Greywacke) and overlying prehnite-pumpellyite altered basalt (the lower basalt of the QHV) is encountered. To the east the HFZ is bounded by the Owen Conglomerate, dominantly correlates of the Middle Owen, dipping moderately to the east, which unconformably overly variably silicified and hematite altered, sheared to massive rhyolitic lava. The affinities of this lava (i.e. Southwell sub-group or Central Volcanics) is currently unclear.

Southwest of the Sharks-Fin Owen Conglomerate overlies rhyolitic lava and volcaniclastic, which are interbedded with mica sandstone north of 5500N, 6000E, suggesting they stratigraphly underly the Animal Creek Greywacke, and that very little movement has occurred on the HFZ. Line 5200N is the northernmost line on which intense deformation, as seen to the south, is exposed but, here the cleavage appears to be at a high angle to the normal NW-SE trend associated with the HFZ, suggesting possible cross faulting, that may offset the HFZ.

Evidence for the location of the HFZ from 5200N to the Sharks Fin track, 6600N, is sparse while the exposure on this track is also not definitive, although sheared sandstone and rhyolitic-dacitic lava have been mapped.

5.3 Geochemistry

5.3.1 Rock Chip

A total of 24 samples from the HFZ and associated sequences were assayed. Results are included in Appendix 13 (for sample locations refer plates MAC89/SS, KK EE and FF). No anomalous gold values were returned, the most significant results being from sample 427425, a weakly altered sandstone hosting galena veins, with weakly anomalous Pb, Zn and As, and 427459, an altered volcanic, with high Pb, Ag (2.5 g/t) and As (280 ppm). Both of these samples occur within the HFZ. Cr values from mica sandstone samples in HFZ are generally lower, up to 220 ppm, than those from the Animal Creek greywacke. This difference may be useful in differentiating between the two sequences.

5.3.2 Stream Sediment

i) Bulk Cyanide Leach

As the low detection limit (50 ppt) of this method should allow detection of anomalies at relatively large distances from source, a pattern of widely spaced sample sites, one per major creek was selected and for ease of access these sites were located around the Shore of Lake Mackintosh. A total of 15 samples varying from 7.2 - 13.5 kg wet, of active stream sediment were collected. No sieving was carried out in the field to avoid losing very fine grained material but, samples were generally <7mm material. Samples were despatched wet and all contained some organic material.

Sample locations are shown on plate MAC203/C and D, and results on plate MAC204/C and D, and in appendix 14. The results were disappointing, the majority being below detection limit and none above 1 ppb. Samples 427893 and 427900 were splits from the one sample site and showed some variation, 427900 being below detection limit while 427893 yielded the highest value i.e. 150 ppt.

ii) -80#

A total of 44 samples (427709-427752) were collected using the procedures and spacing outlined in section 3.5.1. These samples were analysed for Cu, Pb, Zn, Ba, As, Ag, Au. Sample locations are shown on plates MAC203/C and D and results on plates MAC204/C, D, and in appendix 14.

On visual examination a prominent Cu (120 ppm max.) Pb (260 ppm max.) and Zn (2150 ppm) anomaly occurs over the 2 km sampled length of the major creek south-southwest of the Sharks-fin. This creek drains the area below the Que River Mine portal and run-off from this area is an obvious source for this anomaly. As a result of this contamination samples 427726, 427738, 427740 and 427743 have been deleted from the data set.

Due to the relatively small number of samples, statistical analysis using probability paper was not feasible and thus thresholds were selected using the Mean + 2 standard deviations. Results are tabulated below :

Element	Mean (ppm)	Threshold (ppm)
Cu	37.9	114
Pb	27.8	170
Zn	97.7	374
Ba	212.1	469
As	5.3	24

As a large number of Au and Ag analyses were below detection limit thresholds of .01 ppm and 2.00 ppm respectively, were selected by visual examination of the data.

The anomalies detected and follow-up work completed are detailed below :

A) Sample 427718 (Cu) and 427719 (Cu, Pb, Zn, Ag, Au anomalous) occur in adjacent creeks around 2800N, 6700E. Mapping of these creeks failed to find an obvious source for these anomalies.

   Follow-up sampling, spaced at 100m, suggests that the source of this anomaly is confined to the area between 6600E and 6800E and within approximately 100m of the Lakes shore. It should be noted that the follow-up results were treated as a statistically separate data set, to allow for analytical variance, and that a repeat of 427719 (Sample 427765) was anomalous in Cu and Zn only while, a repeat of 427718 (427773) was not statistically anomalous in Cu, although the value obtained was in the upper 15% of the population.

B) Sample 427729 (4080N 6260E) was anomalous in Pb with weakly anomalous Au. This anomaly was not repeated by follow-up sampling and 100m spaced sampling upstream was not encouraging.

C) Sample 427748 (6130E, 5230N) assayed 127 ppb Au with anomalous Ba and As. A repeat sample at this site (427753) contained significantly less, but still highly anomalous Au (48 ppb) and anomalous As, Ba and Pb. 100m spaced sampling up this creek indicates the Au anomaly extends ~400m upstream, and is closed off around 5980E, suggesting the anomaly is probably not related to the Mt. Charter Au zone. Ba and As show a strong correlation with Au (correlation coefficients of 0.82 and 0.83 respectively) although, these anomalous values persist upstream of the Au anomaly.

D) A weak Au anomaly (427741) in a small creek (4950N, 6350E) was follow-up by repeat sampling, Au below detection limit, and a sample ~100m upstream, 8 ppb Au. This creek drains a ridge forming part of the Anomaly C catchment, and may be related to the source of this anomaly.

5.4 Summary, Recommendations

The HFZ has been confidently located from approximately 500S to 5200N however, north of this point thre is little evidence for its location and it may have been offset by a cross structure. Stream sediment sampling has defined a base metal anomaly (A) and Au anomalies (C and D). The Au anomalies are considered high priority for follow-up by soil and rock-chip sampling, however, it should be demonstrated that they are not related to the Mt. Charter Au zone.

6. SOUTH HATFIELD

6.1 Introduction

This portion of the licence, south and west of the South-Charter track, is dominated by Central Volcanic Complex lithologies, massive felsic lava and ignimbritic volcaniclastics and an overlying dominantly ash volcaniclastic sequence transitional to QHV. A UTEM survey (1987 - McNeill 1989B), soil sampling, on 200-400m spaced lines, ground magnetics, coverage completed in this reporting period, and mapping failed to locate any VMS targets although weak hangingwall style alteration, the boundary prospect, at 2990N 2810E had not been tested by geophysics. This target was tested by drilling and the gold potential of this area assessed by stream sediment geochemistry.

6.2 Geochemistry

6.2.1 Stream Sediment

i) Bulk Cyanide Leach

A total of 10 samples were collected from sites either below major creek junctions or where creeks intersected roads, for ease of access. From 4.6 to 16 kg of sieved (-6mm) wet, active stream sediment was collected and partially dried prior to submission for analysis by ALS using method PM216. All samples contained some organic material.

Sample locations are shown on plate MAC203C while analytical results are presented on plate MAC204C and in appendix 15. Results were disappointing, the majority being below detection limit (i.e. 50 ppt) with a maximum of 300 ppt.

It is interesting to compare sample 430843 (<50 ppt) and the two -80# samples taken upstream (430790, 791) both of which are weakly anomalous in Au (0.01 ppm). This suggests that the Au may be unavailable for cyanide leaching i.e. included within sulfide grains.

ii) -80# Stream Sediment

A total of 45 samples (430786-430830) were collected using the procedures outlined in section 3.5.1. Samples were analysed for Cu, Pb, Zn, Ba, As, Ag, Au and splits of 430792, 430803 and 430826 (430831-833 respectively) were assayed as a check on analytical precision. Sample locations are shown on plate MAC203C and results on MAC204C and in appendix 15.

Due to the relatively small sample set, statistical analysis using probability paper was not feasible and thus thresholds wee selected using the mean + 2 standard deviations. Results are tabulated below :

Element	Mean (ppm)	Threshold (ppm)
Cu	28	52
Pb	33	137
Zn	86	293
Ba	360	591
As	16	79

A threshold of 15 ppb was set for Au by visual examination of the data while no Ag results were considered to be anomalous, i.e. all were at or below detection limit. Three anomalies were defined:

i) Sample 430786 (2790N, 2185E) is anomalous in Cu, As and Ag with high Ba (550 ppm). A probable source is the hangingwall style alteration at the boundary prospect, tested by DDH MAC-16 (section 6.4).

ii) Sample 430829 (2780N, 3940E) a single point 15 ppb Au anomaly.

iii) Samples 430786-430787 (near 1550N, 2350E) are anomalous in Au and Pb and Zn in the case of 430786. These occur downstream of an area of relatively high Au values (>10 ppb). This anomaly occurs outside the S.W. corner of the licence.

6.2.2 Soil Sampling

"C" horizon soil sampling on 400m spaced lines (McNeill 1989B) defined a weak Ba-Zn-As anomaly around 1800N, 4300E. Infill sampling was designed to further detail this anomaly and in combination with rock-chip sampling (6.2.3) indicate its source. A total of 92, 25m spaced samples on lines 1600N and 2000N (3700-4700E) and 2400N (4200-4500E) were collected by hand auger, sieved to -80# and analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ti and Zr. Sample locations and results are included as appendix 17. Planned sampling at 12.5m intervals were abandoned due to difficult ground conditions.

Weakly anomalous As (<20 ppm) and Zn (<165 ppm) occur between 1600N-2400N around 4300E. The anomaly appears to be related to the contact between rhyodacitic lava and ash volcaniclastics. A single, point Au (36 ppb) anomaly occurs at 1600N, 4175E, with no obvious source.

6.2.3 Rock Chip

A total of 15 samples from lines 1400N-3200N were analysed for Cu, Pb, Zn, Ba, As, Cr, Ti, Zr and Au. Results are included as appendix 16, see plate MAC89/MM for locations. High Zn and As occur in apparently unmineralised ash volcaniclastic adjacent to the contact with underlying lavas and probably source the soil anomaly.

6.3 Geophysis

Infill ground magnetics were read on the Mt. Charter dolerite and South Hatfield grids. A total of 28 line km of 10m spaced data was collected using an Omni 4 EDA proton precession magnetometer. This data was dumped to a porta-pak computer and combined with data from a second Omni 4 magnetometer used as a continuously monitoring base station. These were combined to produce the stacked profiles on plate MAC235 (overlays MAC161C).

The main aims of this survey were to detail a magnetic low, possibly due to magnetite destructive alteration at the Boundary Prospect and as aid to mapping.

6.4 Diamond Drilling

6.4.1 DDH MAC-16

Geology

DDH MAC-16 was sited 3 km southwest of Mt. Charter (plate MAC161C) to test Hellyer type hangingwall alteration in rhyolitic Central Complex Volcanics, the target being Hellyer or Rosebery type VMS.

Intense K-feldspar-sericite-quartz alteration, associated with barite veining, is restricted to one exposure in a quarry and further costeaning in this area has failed to located any further alteration. UTEM was ineffective in this area, due to the proximity of powerlines and thus the alteration system had not been geophysically tested. As the orientation of the alteration was unknown a vertical hole, collared on the most intense alteration, was designed to test this target.

A detailed log and petrographic report are included in appendix 18 while a section of the hole is included as plate MAC200. A summary log is as follows :

0-44.2m	Rhyodacitic lava. Barite-pyrite-quartz veins to 9.8m.
44.2-55.4m	Banded volcaniclastic with lava clasts.
55.4-116.7m	Rhyodacitic lava.
116.7-123.1m	Felsic lapilli volcaniclastic.
123.1-173.1m	Rhyodacitic - dacitic lava. Variably chloritized + silicified. 146-148.5m trace native Cu in microfissures.
173.1-223.6m	Eutaxitic volcaniclastic with rhyodacitic lava clasts.
223.6-275.6m	Silica-K-feldspar-chlorite altered volcanic. Increasing intensity of quartz veins down-hole.
275.6-287m	Quartz vein, massive to vuggy.
287-281m	Altered, intensely quartz veined lava. Fault contact to:
281-340.4m	Rhyodacitic-dacitic lava.
340.4-367.4m	Felsic lapilli volcaniclastic with pink lava clasts.

The quartz-pyrite-sericite-k feldspar alteration seen at surface extends to approximately 12m depth, but may be equivalent to the alteration associated with quartz veining deeper in the hole. Mineralisation, i.e. native Cu, malachite and chalcocite (often rimming chalcopyrite) has supragene characteristics although both sphalerite and chalcopyrite occur in the quartz vein, as do zones of sericite, k-feldspar manganese oxide. The alteration and mineralisation appears to have characteristics similar to both epithermal and VMS hangingwall systems, and is considered to sub-parallel the hole. Outside this alteration pyrite is often associated with chloritic veinlets or alteration patches, in the regionally silica-sericite altered lavas and probable ignimbritic volcaniclastics. Bedding and flow-banding in the volcanics appears to be at a high angle to the core axis indicating relatively shallow dips.

Geochemistry

The majority of MAC-16 was core-ground, on nominal 10m intervals or lithological boundaries, and analysed for Cu, Pb, Zn, Ba, As, Cr, Ti, Zr, Ag and As while the interval 140.3-152.1m was split and analysed for the elements listed above and epithermal indicator elements. Results are presented on plate MAC200A and in appendix 19.

Low Cr values and high Zr/Ti ratios indicate lithologies are dominantly rhyodacitic to rhyolitic and not andesitic to dacitic as suggested by petrographic descriptions (appendix 18).

High Ba and As at the top of the hole correlate with the hangingwall style alteration however, elevated Zn values reach a peak below the obviously altered interval. The reason for this is not obvious.

The quartz vein is associated with high Cu (to 2000 ppm) which also occurs in the interval 146-148m while Ba shows a marked depletion (and Zn is weakly enriched) around this vein system.

The depletion of Ba is not characteristic of hangingwall alteration and suggests the two altered intervals may be unrelated. Precious metal values are low throughout the hole.

Geophysics

MAC-16 was read with Sirotem, results and interpretations of which are presented in appendix 9. No anomalies were detected.

6.5 Summary and Recommendations

Hellyer hangingwall style alteration was tested by DDH MAC-16 which intersected a weakly Cu, Zn mineralised quartz vein system and associated altered volcanics. In the light of a negative DHEM test and the lack of precious metal mineralisation, this target has been considerably downgraded.

Stream sediment sampling failed to locate any significant Au anomalies within the lease, although a point anomaly may warrant follow-up.

A weak As-Zn-Ba soil anomaly was detailed by further soil and rock-chip sampling and would appear to be a lithological feature.

This area is now considered to have been adequately tested for both VMS and Au targets.

7. I ZONE

7.1 Introduction

The southern part of this area, southwest of the Que River Mine, has been surveyed by UTEM and a shallow target drilled (DDH HAT-7, McNeill 1989b) however, the geology of this area was still poorly understood and a "C" horizon Pb soil anomaly, around 6200N, occured in a window in UTEM coverage and had not been tested. A programme of line cutting (20 km) mapping, soil sampling (initially for lithological indicator elements) and UTEM was carried out over this area.

7.2 Geology

Mapping, from 4800N to 6600N, at 1:25,000 is recorded on plates MAC87/BB and CC while petrology reports are included as appendix 20. Outcrop is very poor over much of this area but improves on the eastern part of the grid. No major modifications to the interpretation of this area, as shown on plate MAC161 C, have been made based on this mapping. Major points of interest are the presence of volcaniclastics in the dominantly andesitic lava sequence, although these do not form mappable units, an apparently mixed sequence of andesite and basalt at the contact of andesite and lower basalt, and much more widespread prehnite-pumpellyite alteration than previously noted.

7.3 Geochemistry

7.3.1 Soil Sampling

Initial sampling on 200m spaced lines, 4800N-6600N, was extended in the light of encouraging results at Mt. Charter with 100m spaced infill lines from 4500N-5400N. "C" Horizon samples were collected by hand auger on a 12.5m spacing, and total of 65.2 25m spaced samples were sieved to -80# and analysed for Cu, Pb, Zn, Ba, As, Cr, Ti, Zr and Au (south of 5300N). Analytical results and sample locations are included as appendix 22.

Several major lithological features may be seen while those relevant to Mt. Charter are discussed in section 8.3.3:

i) The Que River fault, as defined by the southern extent of high Cr and Ti/Zr values, i.e. basalt, occurs further to the north than is currently interpreted.

ii) Cr values suggest the lower basalt - andesite contact is further east than has been mapped.

iii) Cu, Cr and Ti/Zr defines the possible Hellyer basalt lense exposed in the costean at 5700N and indicates an area of basalt around 6000-6200N. Cu and Ti/Zr are coincident over this lense but the Cr high appears to be offset to the west. The reason for this is unclear. Ti/Zr values are also high (>50) over this northern basalt and suggest it may be of the type found directly above Hellyer. Rock chip sampling is required to confirm this correlation.

iv) An apparent lobe of basalt i.e. high Cr, Cu occurs on 5400N around the collar of MC-11. Core grind data from this hole indicates no basalt near surface. This conflict should be resolved. The Pb anomaly, detected by previous surveys, was repeated and is associated with a moderate-weak Zinc anomaly.

7.3.2 Rock Chip

A total of 21 samples were assayed, results in appendix 23 and locations on plates MAC89/BB and CC. These samples were collected dominantly for lithological discrimination, between andesites and basalts using Cr vs Zr/Ti, as an aid to mapping.

Sample 427846 from a small pit in the massive barite at Mt. Charter assayed at 2.4% Zn, 30 g/t Ag, 1.8 g/t Au, a much higher zinc content, although comparable Ag and Au, than other samples from this area (see 8.3.2). High Pb (1100 ppm max.) and Zn (1600 ppm max.) were recorded in from a barite, with trace galena and sphalerite, veined andesitic lavas (427847-848) in the hangingwall of the Mt. Charter alteration.

7.4 Geophysics

A total of 3.5 line km of 50m spaced UTEM data was collected, between 5800N and 6600N. Results and interpretations are presented in Appendix 23. A possible conductor was detected but due to poor quality data a second loop will be required to detail the anomaly. Data collection from loop 2 was in progress at the time of writing. Due to powerline interference an area, from 5800-6600N and 3800E-4100E, remains untested by UTEM.

7.5 Summary and Recommendations

"C" horizon soil sampling and mapping have been completed and indicate that there may be two lenses of Hellyer basalt overlying andesitic lava and volcaniclastic in this area. A moderately strong Pb soil anomaly flanks the northernmost basalt lense to the west and a poorly defined UTEM conductor occurs to the east. This UTEM feature is currently being detailed by a second survey.

8. MT. CHARTER

8.1 Introduction

Pyrite-sericite alteration below a zone of vein and massive barite was recognised near the summit of Mt. Charter in the early 1970's and subsequently a strong IP response over this zone was tested by DDH's MC-1, 2 and 3. Only stringer type mineralisation was intersected (Hespe 1984A).

A second phase of exploration, based on the model of barite occurring on the palaeo-seafloor, at the contact of dacitic and andesitic volcanics, distal to a VMS deposit resulted in the drilling of DDH's MC-5, 6 and 8. No significant base metal grades were intersected and DHEM failed to locate any conductors (Hespe 1984B).

8.2 Geology

Mapping at 1:2500 completed during the reporting period is summarised in section (7.2). No major changes to the previous geological interpretation of this area have been made.

A study of the Mt. Charter mineralisation (Rand 1988) indicates that it was formed by low temperature (250°C) fluids with a considerable seawater component. The alteration consists of a core of sericite-silica-pyrite, with barite+pyrite±sphalerite, galena and tennantite as veins and disseminations, surrounded by an outer sericite-pyrite-carbonate±chlorite zone. Gold occurs in the core zone as electrum both included in pyrite as free grains.

Rand (ibid) invokes a replacement style genetic model involving barite forming at the contact of permeable dacitic and impermeable andesitic volcanics. The alteration zone extending NW to MC-4 is ascribed to fluids migrating along this contact.

8.3 Geochemistry

8.3.1 Diamond Drill Core

In conjunction with Rand's Study of the Mt. Charter mineralisation DDH's MC-1, 2, 3 and 4 were core-ground and analysed for Cu, Pb, Zn, As, Au, Ba, As, Cr, Ti, Zr. Results and grinding intervals are included as appendix 24. Significant results were :

MC-1 110m (71.0-181.0m) of 0.9 g/t Au and 16 g/t Ag.
MC-2 56.5m (62.2-114.7m) of 0.3 g/t Au and 10 g/t Ag.
MC-3 91.3m (173.1-264.4 E.O.H.) of 0.6 g/t Au and 11 g/t Ag.
MC-4 20m (20-40m) of 0.4 g/t Au and 2.5 g/t Ag and 10m (170-180m) of 0.4 g/t Au and 0.5 g/t Ag.

Selected intervals of MC-3 were split and assayed by Classic Comlabs (see Appendix 24 for results) as a check of the core-grind assays. Results were of a similar tenor but lower (e.g. 228.1-233.1 core grind = 0.983 ppm, split core = 0.58 ppm).

An interval, 81-131m, from MC-1 was also split, on 1m intervals, and assayed for Cu, Pb, Zn, Ag, Au, Ba, Fe and Sb (results in appendix 24) with a resulting maximum grade of 2.1 g/t Au from 108-109m and 24 g/t Ag from 128-129m. A split of this interval from MC1 was used for preliminary metallurgical testwork which indicated that simple flotation recovered approximately 80% of the Au to a sulfide concentrate and that finer grinding may result in a greater recovery. A report on this testwork is included in appendix 25.

8.3.2 Rock Chip

Re-assaying of channel samples from the 4500N costean, see plate HT37d and appendix 26 for results, indicated a 50m zone averaging 0.6 g/t Au, 21 g/t Ag in barite veined altered volcanics. A further 41 samples from the "massive barite" near MC-2 and MC-3 were assayed, results in appendix 26 and on plate MAC234, the best result being 3.8 g/t Au, 77.5 g/t Ag, although one sample returned 176 g/t Ag. An average grade from the "massive" barite zone is 2 g/t Au and 60 g/t Ag.

8.3.3 Soil Sampling

C horizon soil sampling over the Mt. Charter area on 100m spaced lines was completed as part of the I Zone programme (see 7.3.1). As expected a coincident Pb, Ba, Ag, Au, As anomaly was defined at and stratigraphically below the Massive Barite horizon however, an unexpected feature on lines 4600N-4900N, 4000E-4200E was a NW trending, roughly parallel to the andesite/dacite contact, Pb, Zn, Ba, Ag, Au, As anomaly downslope of the main Mt. Charter anomaly. Maximum gold values in this zone are lower than those over the massive barite (0.29 ppm vs 0.8 ppm respectively), Ba and Zn are comparable (maximum 185 ppm, 14.7% respectively) and Ag, Pb and As are slightly enriched (max. 1500 ppm Pb, 35.0 ppm Ag, 1100 ppm As vs 330 ppm As).

This anomaly may be the result of downslope dispersion, as it is centred around two small creeks draining the main Mt. Charter anomaly, however CSIRO studies at Que River indicated that As and Ag are relatively immobile in this environment. A second alternative is that the anomaly is due to alteration or mineralisation hangingwall to the massive barite.

Geological information in this area is sparse, with only float of weakly sericite altered andesite and minor massive barite recorded. A weak UTEM anomaly (I_4) trends through the anomalous zone while previous drilling has not tested beneath the soil anomaly.

8.4 Summary and Recommendations

At Mt. Charter a silica-sericite-pyrite altered core zone containing low grade gold, up to 0.9 g/t and silver, to 16 g/t in core grinds, underlies a zone of massive to intensely barite veined material, containing up to 3.8 g/t Au, 176 g/t Ag, at the contact of dacitic and andesitic volcanics. At surface this zone is defined by a coincident Pb, Zn, Ba, As, Ag, Au soil geochemical anomaly while a possible zone of hangingwall alteration/mineralisation is suggested by a soil anomaly, in the andesite, of equal tenor, and warrants further investigation.

Potential exists for a large tonnage low grade gold-silver deposit, and as much of the previous drilling was aimed at a VMS target, further drilling is required to define the subsurface extent of the gold zone and possible grade variations with depth in the system.

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APPENDIX I.

APPENDIX

Sample No.	Description	Location
427366	Intrusive?	6100E 10480N
427367	Glassy volcaniclastic	6120E 10470N
427368	Rhyolitic lava	6600E 13570N
427369	Ash volcaniclastic?	6970E 11970N
427370	Ash volcaniclastic	6990E 11000N
427371	Crystal volcaniclastic	6910E 11300N
427372	Brecciated ash volcaniclastic?	7140E 13510N

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

29th March, 1988

REPORT CMS 88/2/21

YOUR REFERENCE:	Letter dated 23.2.1988
DATE RECEIVED:	24th February, 1988
SAMPLE NOS.:	427366 - 427372
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIc. 3123

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REPORT CMS 88/2/21

Seven rock chip samples from the Que-Hellyer and Southwell River areas were received for routine petrological description. Representative thin-sections wereprepared, examined in transmitted light and, together with respective offcuts, in oblique incident light, with stain tests performed as warrented.

Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite is dominated by generally fine-grained tuffaceous rocks of felsic intermediate-acid character and typically distal pelitic types. These reflect subaerially transported fine ashy material in varying proportions with "basinal" clastic sedimentary components. Individual rocks may be categorised tuffaceous pelites, impure pelitic ashes or xenotuffs. This group includes samples 427366, 427367, 427370 and 427372.

Sample 427371 represents an ?ignimbritic psammitic tuff with "dacitic" relict compositional characteristics.

Sample 427368 represents a (devitrified and altered) porphyritic rhyolite with lava-type textural characteristics. Sample 427369 is a composite of altered rhyolitic lava clasts and a cherty argillite sedimentary facies. This rock bears analogy with the Hellyer impure chert-cemented basic and intermediate subaqueous lava breccias.

Alteration features are noted in the individual descriptions.

D. Cowan, B. Sc.

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SAMPLE NO.: 427366 (T.S. 59715)

CLASSIFICATION/ COMPOSITION: **Sericitised Xenotuff.** Near-massive sericite aggregates with thinly disseminated silt- to fine sand-sized quartz grains, fine to medium sand-sized sericitised fiamme and carbonaceous shale clasts.

FABRIC: Incipiently sheared/phyllitic. Pervasive relict random to semi-eutaxitic shardy microtextures, randomly disseminated quartz grains and lithoclasts.

ACCESSORIES: Minor sericite-pseudomorphed feldspar grains. Rare fine silt-sized clastic muscovite flakes. Leucoxenised opaques.

INTERPRETATION/ COMMENTS: A thoroughly sericitised pyroclastic; primarily a felsic intermediate-acid (?dacitic) carbonaceous shale-xenolithic vitric tuff with accessory lithic and crystal components. Distal ignimbritic characteristics.

SAMPLE NO.: 427367 (T.S. 59716)

CLASSIFICATION/ COMPOSITION: **Sericitised Pelitic Ash.** Sericite aggregates with pervasively disseminated silt- to fine sand-sized sericitic/variably carbonaceous and weakly Fe-stained (degraded ?dolomite) pelite clasts, minor quartz grains.

FABRIC: Weakly banded, pervasively vaguely relict microshard-textured (silty vitroclastic) sericitised matrix; dispersed, incipiently bedded lithoclast. Very incipiently sheared.

ACCESSORIES: Minor clastic leucoxene and silt-sized muscovite flakes. Vague sericite pseudomorphs of clastic feldspar grains.

INTERPRETATION/ COMMENTS: Similarities with, and possibly a variant of, 427366. Reflects a composite of distal vitric ashy (major) and silty/fine sandy pelitic-lithoclastic sedimentation.

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SAMPLE NO.: 427368 (T.S. 59717)

CLASSIFICATION/ COMPOSITION: Porphyritic Rhyolite. Variably sericite-stained albite-, subordinate variably corroded quartz phenocrysts in a matrix of microcrystalline quartz and incipiently Fe-stained/partly degraded sericite aggregates.

FABRIC: Variably porphyritic, finely flow- and semi-compositionally banded, with a microfelsitic (devitrified) groundmass.

ACCESSORIES: Minor sericite-quartz-ferruginised carbonate-pseudomorphed ?K-feldspar phenocrysts. Leucoxenised opaques. Irregular quartz-, sericitic quartz- and late sericite veinlets.

INTERPRETATION/ COMMENTS: Sericite(-quartz-carbonate)-altered sodic/trend sodi-potassic rhyolitic lava; flow-banded and primarily subvitric.

SAMPLE NO.: 427369 (T.S. 59718)

CLASSIFICATION/ COMPOSITION: Rhyolitic Breccia. Clasts of sericite/microcrystalline quartz-altered, quartz-porphyritic lava; minor "volcanic" quartz grains. Matrix of impure chert/cherty argillite, comprising cryptocrystalline quartz aggregates with abundant fine silt-sized detrital muscovite flakes and thinly dispersed silt- to sand-sized quartz grains.

FABRIC: Massive to incipiently banded impure chert/cherty argillite with a centimetric-scale interunit of breccia comprising impure chert-cemented, sub- to millimetric, angular to irregular quartz-porphyritic lava clasts.

ACCESSORIES: Traces of carbonaceous matter, silt-sized carbonaceous pelite clasts in matrix. Minor clots of chlorite, films of degraded/ ferruginised ?carbonate in clasts.

INTERPRETATION/ COMMENTS: Impure chert/cherty argillite with an intercalated zone of impure chert-matrixed rhyolitic breccia, with selectively sericite-quartz-altered clasts. Textural affinities with the Hellyer chert-matrixed andesitic lava breccias.

SAMPLE NO.: 427370 (T.S. 59719)

CLASSIFICATION/ COMPOSITION: Altered Tuffaceous Pelite. Semi-sericitic white mica aggregates pervasively stained with fine-grained sideritic carbonate rhombs and granules. Thinly disseminated sub- to euhedral sand-sized grains of variably sericite-carbonate-altered albite. Semi-pervasive silt-sized carbonaceous pelite clasts and muscovite flakes.

FABRIC: Massive to weakly banded, shale-matrixed, silty clastic to vaguely relict vitroclastic, with more or less evenly disseminated sand-sized "crystal" tuffaceous debris. Incipiently sheared.

ACCESSORIES: Minor silt- to fine sand-sized quartz grains, rare apatite. Semi-pervasive fine silt-sized detrital leucoxene. Sparse sericitic quartz veinlets, crosscutting carbonate veinlets, late sericitic microfractures.

INTERPRETATION/ COMMENTS: Strictly a silty/slightly sandy shale, with the sand component of crystal-pyroclastic origin and at least minor shards in the silt fraction. Apparently primarily dolomitic. Reflects sericite/ Fe-carbonate alteration, both marked and pervasive.

SAMPLE NO.: 427371 (T.s. 59720)

CLASSIFICATION/ COMPOSITION: Altered Tuff. Abundant sericitised/degraded, ferruginised carbonate-stained feldspar crystals/crystal fragments, relatively minor sericitised/variably cherty-silicified lithic clasts, minor quartz crystal fragments. Matrix of semi- to sericitic white mica and varying proportions of sericite-stained microcrystalline quartz.

FABRIC: Crystal-rich, poorly sorted, psammite-grade fragmental with sporadic poorly recognisable fiamme and a vaguely relict shardy-microtextured matrix. Incipiently sheared.

ACCESSORIES: Conspicuous leucoxenised opaques, traces of oxidised fine-grained pyrite. Minor irregular partly segmented sericite veinlets.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz-carbonate-altered and mildly sheared crystal-rich psammitic tuff. Relict features consistent with an ignimbritic mode of origin, but critical detail obscured by alteration, shearing, and partial weathering effects. Broadly dacitic relict compositional features, but with unusually abundant leucoxenised opaques.

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SAMPLE NO.: 427372 (T.S. 59721)

CLASSIFICATION/ COMPOSITION: "Tuffaceous Siltstone". Compact framework of splintery to subangular kaolin-clouded, poorly determinate feldspar and subordinate quartz grains with a microcrystalline quartzofeldspathic cement. Conspicuous fine silt-sized clastic leucoxene. Pervasive network of quartz veinlets with films and clots of leached/partly ferruginised carbonate, minor chlorite.

FABRIC: Massive (unbanded), well-sorted, silty clastic. Two generations of quartz veinlet networks.

ACCESSORIES: Minor traces of dolomitic carbonate, detrital muscovite.

INTERPRETATION/ COMMENTS: Unusually homogeneous quartzofeldspathic silty clastic rock, apparently a distal crystal ash. The feldspar conceivably represents devitrified fragmented vitric debris, but there is litt;le positive microtextural evidence. Early generation veinlets are weakly stressed and relatively (weathered) carbonate-rich.

SAMPLE NO.:

CLASSIFICATION/ COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

APPENDIX

Sample No.	Description	Location
427376	Coarse Sandstone	6680E 11945N
427386	Rhyolitic lava	6275E 14420N
427391	Volcaniclastic	7050E 12100N
427392	Sandstone	7150E 12100N
427393	Crystal volcaniclastic	7590E 12410N
427399	Fine grained volcaniclastic	7050E 10995N
427404	Altered + brecciated lava?	8565E 10720N
427405	Dacite lava?	8330E 10820N
427407	Rhyolitic lava?	8205E 11335N
427409	Altered Rhyodacitic lava?	8195E 11380N
427415	Volcaniclastic	7640E 10440N
427416	Volcaniclastic	7780E 10570N
427421	Jukes type volcaniclastic	7150E 13880N
427422	Rhyolitic volcaniclastic	6755E 13540N
427424	Rhyolitic lava	6670E 13470N

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

4th May, 1988

REPORT CMS 88/3/34

YOUR REFERENCE:	Letter dated 29.3.1988
DATE RECEIVED:	31st March, 1988
SAMPLE NOS.:	15 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

649048

REPORT CMS 88/3/34

A suite of fifteen rock chip samples from the Southwall River area was received for routine petrological description. Representative thin-sections were prepared, examined in transmitted light and, together with respective cobaltinitrite-stained offcuts, in oblique incident light, with carbonate stain test performed as warranted. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises mainly acid volcanics, including lavas and tuffs, with subordinate tuffaceous sedimentary rocks. General features are analogous to, and support correlation with, the Tyndall Group as described by Corbett (1981).

Volcanics are dominantly rhyolitic, with subordinate dacitic types. Pyroclastics predominate and include ignimbritic types. Sediments include pelite and chert-matrixed tuffaceous varieties consistent with fluctuating subaerial to subaqueous conditions for the suite as a whole.

Volcanics are generally altered, with assemblages detailed in individual descriptions. Characteristic, however, are combinations of secondary quartz, sericite, chlorite and Fe-carbonate. Individual rocks carry trace to accessory proportions of pyrite. Several rocks exhibit weathering effects, with carbonate typically represented by limonitic pseudomorphs. These features conceivably mask traces of oxidised sulphide, and geochemical evaluation may thus be warranted.

D. Cowan, B. Sc.

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SAMPLE NO.: 427376 (T.S. 59828)

CLASSIFICATION/ COMPOSITION: Polymict Grit. Framework of low-grade regional quartzose metapelite (quartz-muscovite phyllite), subordinate quartz grains and composites, minor clasts of chert, sericitic impure chert, limestone and dolomite. Matrix of quartzose-micaceous, fine-grained sandstone with semi-pervasive carbonate (?dolomite)-derived limonitic Fe-stainings.

FABRIC: Poorly sorted (medium sandy to pebbly), sandstone-matrixed, gritty clastic. Moderately stressed.

ACCESSORIES: Carbonaceous matter (concentrated in metapelite clasts). Clastic leucoxenic semi-opaques. Sparse discontinuous cherty quartz and ferruginised mica (?sericite) veinlets.

INTERPRETATION/ COMMENTS: A quartzose-micaceous ?dolomitic carbonaceous sandstone-matrixed lithic grit, polymict but dominated by greenschist facies regional metapelite- and vein quartz-derived components. No tangible volcanic components. Finer detail obscured by partial ferruginisation.

SAMPLE NO.: 427386 (T.S. 59829)

CLASSIFICATION/ COMPOSITION: Rhyolitic Tuff. Frequent feldspar (dominantly albite, minor orthoclase) crystals/crystal fragments, subordinate corroded quartz "phenocrysts", minor chloritised ferromags (pyroxene, amphibole) and felsic lava clasts in a partly degraded/kaolin-stained, cryptocrystalline, quartzofeldspathic matrix.

FABRIC: Crystal-rich, weakly flow-structured psammite-grade fragmental with a microfelsitic (devitrified), eutaxite-like, finely shardy matrix.

ACCESSORIES: Disseminated magnetite, conspicuous fine to ultrafine leucoxenised opaques. Pervasive Fe-pigmentation in matrix. Minor feldspar-replacive sericite.

INTERPRETATION/ COMMENTS: A mildly altered and partly weathered tuff; ignimbritic characteristics, with a welded, finely shardy, semi-flow-structured matrix. Sodi-potassic rhyolitic compositional characteristics.

SAMPLE NO.: 427391 (T.S. 59830)

CLASSIFICATION/ COMPOSITION: "Dacitic" Tuff. Clasts of semi-selectively chlorite-sericite-altered, weakly albite- and quartz-porphyritic felsic lava in a matrix of crypto- to microcrystalline quartz and minor sericite.

FABRIC: Semi-flow-orientated, angular to irregular, microspherulitic (devitrified)psammite to lapilli grade lithoclasts in a vaguely relict microshard-textured matrix. Weakly stressed.

ACCESSORIES: Semi-pervasive limonite pseudomorphs and cavities after single to clustered carbonate rhombs. Disseminated leucoxenised opaques. Minor traces partly oxidised pyrite.

INTERPRETATION/ COMMENTS: A devitrified and quartz-sericite-chlorite-carbonate-altered felsic intermediate-acid lithic-vitric tuff. Exhibits ignimbritic characteristics in common with 427386.

SAMPLE NO.: 427392 (T.S. 59831)

CLASSIFICATION/ COMPOSITION: Rhyolitic Xenotuff. Abundant sericitic feldspar, subordinate quartz and chloritised ferromagnesian crystals/crystal fragments, sporadic chloritised and silicified lava clasts, minor sericitic pelite and quartz-sericite metapelite clasts. Matrix/cement of chlorite, sericite and cloudy fine sparry to microcrystalline ankeritic carbonate.

FABRIC: Poorly sorted, weakly bedded, fine to medium sandy clastic, with a vaguely vitroclastic silty clastic matrix.

ACCESSORIES: Minor traces of carbonaceous matter, minor carbonaceous pelite clasts. Traces of clastic muscovite. Clastic leucoxenic semi-opaques. Minor traces of pyrite.

INTERPRETATION/ COMMENTS: Textural and compositional features consistent with a subaqueously deposited rhyolitic "crystal tuff" with a pelitic ashy matrix and minor non-volcanic components (hence xenotuff). Finer detail obscured by chlorite-carbonate-sericite alteration.

SAMPLE NO.: 427393 (T.S. 59832)

CLASSIFICATION/ COMPOSITION: Rhyolitic Xenotuff. Loose framework of feldspar (oligoclase-albite and orthoclase) and quartz crystals/crystal fragments and microcrystalline silicified rhyolitic lava clasts in near-equant proportions. Minor selectively chloritised indeterminate lava clasts, sparse sericitic pelite and carbonaceous pelite clasts. Matrix/cement of microcrystalline quartz with fine-scale vugs, veinlets of fine-grained quartz.

FABRIC: Poorly sorted, psammite-grade, angular fragmental. Corrosive/ replacive cherty quartz matrix/cement.

ACCESSORIES: Leucoxenised opaques. Rare silt-sized clastic muscovite flakes. Sporadic discontinuous sericite-chlorite veinlets. Minor degraded/ ferruginised rhombs and clots of carbonate.

INTERPRETATION/ COMMENTS: A thoroughly silicified sodi-potassic rhyolitic lithic-crystal tuff; subaqueous depositional characteristics with affinities to 427392. Main contrast is the absence of altered ferromagnesian crystal fragments. The cement is apparently sedimentary chert in part, complexed by vugs and veinlets of hydrothermal quartz.

SAMPLE NO.: 427399 (T.S. 59833)

CLASSIFICATION/ COMPOSITION: Tuffaceous Pelite. Semi-sericitic white mica with minor intergrown microcrystalline quartz. Pervasively disseminated silt-sized detrital muscovite flakes, sand-sized albite grains, subordinate quartz grains, minor sericitised "rhyolitic" lava clasts. Pervasive limonitic pseudomorphs after fine sparry ?dolomite.

FABRIC: Quartzose-micaceous silty shale with randomly disseminated, poorly sorted sand-sized crystal fragments and lithoclasts. Incipiently sheared.

ACCESSORIES: Carbonaceous matter, clastic leucoxenic semi-opaques. Late irregular limonitic and locally manganese oxide-stained microfractures. Rare chalcedonic simple radiolaria and ?sponge spicule fragments.

INTERPRETATION/ COMMENTS:

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SAMPLE NO.: 427404 (T.S. 59834)

CLASSIFICATION/ COMPOSITION: Dacitic Tuff Lava. Albitised/weakly sericitic plagioclase phenocrysts and phenocrystal clusters, minor corroded quartz microphenocrysts in a matrix of microcrystalline quartz with varying proportions of sericite, minor chlorite, disseminated to conspicuous fine-grained, degraded/ferruginised carbonate.

FABRIC: Random angular to irregular porphyritic felsitic lava clasts (to 1 cm+) in a similarly textured but finer-grained, weakly flow-banded matrix.

ACCESSORIES: Leucoxenised opaques. Secondary films of limonite and Mn-oxides.

INTERPRETATION/ COMMENTS: A flow-structured clastic lava (tuff lava) with typical dacitic relict compositional characteristics. Clasts are semi-selectively sericite-chlorite-carbonate-altered, and the matrix lava is relatively silicified.

SAMPLE NO.: 427405 (T.S. 59835)

CLASSIFICATION/ COMPOSITION: Rhyolite. Frequent sericite-stained and partly weathered/kaolin-clouded albite-, subordinate corroded quartz phenocrysts, in a matrix of weakly/pervasively Fe-stained sericite and fine to microcrystalline quartz.

FABRIC: Weakly glomeroporphyritic, flow-structured, and weakly flow-banded, with a semi-felsitic, weakly perlitic-microstructured groundmass.

ACCESSORIES: Leucoxenised opaques. Semi-pervasive very fine-grained degraded/ ferruginised carbonate. Secondary limonite and Mn-oxide films.

INTERPRETATION/ COMMENTS: Compositional affinities with 427404, but with an enhanced phenocrystal quartz component and thus reasonably categorised as (sodic) rhyolitic. Extensively sericite-carbonate-altered and partly weathered.

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SAMPLE NO.: 427407 (T.S. 59836)

CLASSIFICATION/ COMPOSITION: **Dacitic Breccia**. Clasts of sericite-quartz-altered sericitic plagioclase-/weakly quartz-porphyritic felsic lava, subordinate clasts of tuffaceous cherty argillite and impure chert. Sparse matrix of tuffaceous cherty argillite comprising silt- to medium sand-sized albite and quartz grains in a sericitic kaolin-illite/ crypto- to microcrystalline quartz matrix.

FABRIC: Moulded to argillite-matrixed lithoclastic. Randomly sorted, submillimetric- to centimetric-scale irregular clasts. Lava clasts are weakly xenolithic, include clasts of the matrix.

ACCESSORIES: Leucoxenised opaques. Sparse clusters of fine-grained, variably oxidised pyrite euhedra. Minor partly degraded chlorite and degraded/ferruginised carbonate. Secondary limonite films. Sparse radiolaria, spicules in matrix.

INTERPRETATION/ COMMENTS: An altered dacitic lava breccia interpreted as subaqueous on the basis of intraclasts and matrix of cherty argillite. The sediment is similar to 427399, but distinctly cherty in comparison.

SAMPLE NO.: 427409 (T.S. 59837)

CLASSIFICATION/ COMPOSITION: **Amygdaloidal Dacite**. Sericite-stained plagioclase (albite, near oligoclase) phenocrysts and phenocrystal clusters, relatively minor corroded quartz phenocrysts, sparse quartz amygdales in an altered groundmass of weakly/pervasively chlorite- and sericite-stained microcrystalline quartz.

FABRIC: Weakly amgydaloidal, semi-glomeroporphyritic, weakly flow-structured; silicified, microfelsitic (devitrified) groundmass.

ACCESSORIES: Sporadic discontinuous microcrystalline quartz veinlets with partly oxidised fine-grained pyrite disseminations. Minor late sericitic microfractures. Disseminated leucoxenised opaques.

INTERPRETATION/ COMMENTS: A weakly amygdaloidal dacitic lava, extensively silicified, with accessory proportions of chlorite, sericite and quartz veinlet-hosted pyrite disseminations.

SAMPLE NO.: 427415 (T.S. 59838)

CLASSIFICATION/ COMPOSITION: "Rhyolitic" Tuff. Sericite aggregates with relatively minor crypto- to microcrystalline quartz and partly degraded chlorite. Disseminated sericite pseudomorphs after feldspar phenocrysts and crystal fragments. Minor quartz phenocrysts and crystal fragments.

FABRIC: Poorly sorted psammite to lapilli grade lithic fragmental with a contorted eutaxitic matrix, frequent "fiamme", subordinate porphyritic lava clasts, minor crystal fragments.

ACCESSORIES: Leucoxenised opaques, traces of degraded/ferruginised carbonate and partly oxidised fine pyrite. Secondary limonitic Fe- and Mn-oxide stainings.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz(-chlorite-carbonate)-altered and weakly pyritised acid fragmental. Relict textural features consistent with a flow- or autobrecciated ignimbrite. Possibly strictly dacitic; compositional detail obscured by relatively marked and pervasive alteration.

SAMPLE NO.: 427416 (T.S. 59839)

CLASSIFICATION/ COMPOSITION: Dacitic Tuff. Variably sericite-stained and calcite-impregnated albite phenocrysts and crystal fragments in a matrix of sericite and crypto- to microcrystalline quartz with subordinate/variable proportions of chlorite and calcite.

FABRIC: Poorly sorted (psammite to lapilli grade) lithic-crystal fragmental with a phyllitic overprint.

ACCESSORIES: Minor quartz microphenocrysts and crystal fragments. Leucoxenised opaques and minor traces of magnetite.

INTERPRETATION/ COMMENTS: A sericite-quartz-chlorite-calcite-altered and relatively sheared lithic-crystal tuff with dacitic relict compositional characteristics.

SAMPLE NO.: 427421 (T.S. 59840)

CLASSIFICATION/ COMPOSITION: Rhyolitic Tuff. Loose framework of sand-sized, variably silicified and chlorite-sericite-calcite-impregnated acid lava clasts, subordinate quartz and sericitic feldspar crystals/crystal fragments, minor chloritised ferromagnesian grains. Cement of cherty microcrystalline quartz with disseminated fine-scale vugs of calcite and quartz.

FABRIC: Similar to 427393. Mildly corrosive cement in comparison.

ACCESSORIES: Clastic magnetite and sparse leucoxenic semi-opaques. Minor clasts of impure chert. Minor traces of pyrite.

INTERPRETATION/ COMMENTS: Affinities with 427393 and 427392, similarly interpreted. Clasts are generally angular, and quartz crystals retain embayments, with little tangible evidence of abrasion, consistent with a primary rather than reworked subaqueous (lithic-crystal) tuff. Alteration analogous to that in 427393, but with relatively abundant chlorite and carbonate.

SAMPLE NO.: 427422 (T.S. 59841)

CLASSIFICATION/ COMPOSITION: Rhyolitic Tuff. Abundant sericitic/poorly determinate feldspar-, slightly subordinate corroded quartz crystals and crystal fragments, sporadic variably sericite-chlorite-stained/partly silicified felsitic lava clasts in a matrix of weakly devitrified/kaolin-stained potassic glass.

FABRIC: Crystal-rich, poorly sorted, psammite-grade fragmental with a contorted, flow-structured, microscale-eutaxitic matrix.

ACCESSORIES: Leucoxenised opaques, minor magnetite. Minor veinlets of micro-crystalline quartz. Sparse micro-amygdales of montmorillonitic clay and quartz. Rare chloritised ferromags.

INTERPRETATION/ COMMENTS: Sodi-potassic rhyolitic "crystal" (strictly a lithic-vitric-crystal) tuff; affinities with 427386 and similarly interpreted as ignimbritic. Exhibits relatively marked sericitic alteration of feldspars, subordinate development of secondary quartz, chlorite and montmorillonite.

SAMPLE NO.: 427424 (T.S. 59842)

CLASSIFICATION/ COMPOSITION: Amygdaloidal Dacite. Thinly dispersed sericite-stained/poorly determinate plagioclase-, subordinate corroded quartz phenocrysts, sporadic quartz amygdales in a matrix of fine anhedral sericitised feldspar, subordinate quartz, with semi-pervasive spongy clots of cloudy microcrystalline sideritic carbonate. Sporadic discontinuous irregular quartz veinlets.

FABRIC: Weakly/variably porphyritic, flow-structured, amygdaloidal felsitic, weakly perlitic on a microscale. Displacive quartz veinlets.

ACCESSORIES: Minor silicified ferromagnesian phenocrysts (pyroxene in part). Sparse leucoxenised opaques. Secondary spongy limonitic stainings (after carbonate).

INTERPRETATION/ COMMENTS: Essentially a devitrified and (sericite-quartz-carbonate) altered dacitic pitchstone. Quartz veinlets and amygdales are recrystallised chalcedonic in part.

SAMPLE NO.:

CLASSIFICATION/ COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

ATTACHMENT

Sample No.	Location	Rock Type
427440	10080N 9400E	Ash volcaniclastic
427442	9960N 9330E	Sandstone - Eldon Group
427443	13270N 7620E	Crystal rich volcaniclastic

649058

Southwell River Area - Additional Petrology

A. McNeill May 1988

427440. A light grey, massive fine grained lithology that, in thin section, is composed dominantly of sericite rich felsite with scattered quartz crystal fragments and opaque grains, these clasts have haloes of relatively coarsely crystallised sericite and quartz. Unidentified opaque acicular minerals are also common. This lithology is considered to be a highly recrystallised ash volcaniclastic.

427442. A light green-grey fine grained sandstone. Equigranular, subangular quartz grains with weakly serate grain boundaries and undulose extinction form a grain to weakly matrix supported mass and constitute 90% of the sample. Other clast types are micaceous quartzite and detrital muscovite while the major accessories, subhedral tourmaline and anhedral zircon define bedding. Rare subhedral pyrite was noted. The matrix is fine grained sericite with a weak crystallographic preferred orientation defining a cleavage.

This lithology appears to be dominantly derived from a low-grade regionally metamorphosed source and is a probable Eldon group correlate.

427443. This brown-pink lithology contains subrounded clasts, up to 7mm diameter, set in a fine grained green-brown matrix. In thin section the major clast types are :

Embayed quartz crystal fragments
Feldspar crystals
Quartz phyric lava, varying from spherulitic to snowflake textured.
Turbid brown feldspar-phyric, opaque rich lava with a trachytic groundmass (probably andesitic)
Snowflake textured feldspar-phyric vesicular lava.
Fine grained quartz and feldspar sandstone with a sericitic matrix.
Quartz and feldspar-phyric flow textured ?ignimbrite.
Fine grained aphyric felsite.

The lithology is grain supported with a chlorite and sericite rich matrix. It is a probable correlate of the dora-selina conglomerate, i.e. the upper part of the Tyndall Group.

649059

APPENDIX

Sample No.	Description	Location
427479	Crystal rich volcaniclastic	16130N, 8000E
427482	Haematite altered rhyolitic lava	16440N, 7550E
427486	Owen Conglomerate - upper unit	14900N, 6750E
427488	Fine grained volcaniclastic	15120N, 7200E
427489	Lapilli volcaniclastic - extauxitic?	16700N, 7950E
427490	Brecciated rhyolitic lava	16440N, 7630E
427491	Rhyolitic lava	16390N, 7460E
427492	Rhyolitic lava	16330N, 7200E
427493	Lapilli volcaniclastic	16320N, 7140E
427494	Unaltered rhyolitic lava	16160N, 7020E
427495	Crystal rich volcaniclastic	15650N, 7520E

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649060

Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

13th July, 1988

REPORT CMS 88/6/28

YOUR REFERENCE:	Letter dated 16.6.1988
DATE RECEIVED:	20th June, 1988
SAMPLE NOS.:	11 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/6/28

A suite of eleven rock chip samples from probable Tyndall Group correlates N.E. of Hellyer was received for routine petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with respective offcuts, in oblique incident light (stereobinocular), with K-feldspar stain tests performed as warranted. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite consists entirely of altered acid volcanics, with the single exception of 427486 which represents a pebbly orthoquartzite facies of the Owen Conglomerate.

Acid volcanics are broadly rhyolitic (if not in detail, obscured by alteration), and where relatively fresh range from sodic to sodi-potassic. The abundance of rhyolitic volcanics and their compositionally variable nature contrasts these rocks with the Que-Hellyer (Mount Read) volcanics, with a typically sodic, and minor, rhyolitic component.

Texturally, these rocks range from lavas to a variety of pyroclastic facies. Fragmentals include distinctly ignimbritic types in addition to sandy clastic variants with subaqueous depositional characteristics. These variants imply fluctuating depositional modes, and are relatively marked in comparison with previous suites.

The volcanics typically reflect sericite-quartz alteration assemblages with, locally, accessory chlorite and carbonate. Fine (oxidised) pyrite may be present. Sample 427495 reflects albitisation as the major alteration trend.

D. Cowan, B. Sc.

SAMPLE NO.: 427479 (T.S. 60184)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Tuff.** Framework of strongly porphyritic lava clasts (with frequent sericite-stained albite, subordinate corroded quartz, and selectively sericitised amphibole and biotite phenocrysts), with weakly devitrified, mildly/variably sericite-quartz-altered, Fe-pigmented, potassic glassy groundmasses; varying proportions of sericitic albite, quartz and sericitised ferromagnesian crystal fragments. Cement and more or less pervasive microscale discontinuous veinlets of cherty microcrystalline quartz with minor microscale vugs after very fine crystal quartz.

FABRIC: Poorly sorted, angular to irregular, psammite- to lapilli-grade lithic-crystal fragmental. Lithoclasts are locally moulded, but are more typically cherty quartz-cemented.

ACCESSORIES: Disseminated leucoxenised opaques and martitised magnetite. Minor clots of weakly Fe-stained "montmorillonitic" clay. Minor sericite and clay films in quartz veinlets.

INTERPRETATION/ COMMENTS: A rhyolitic lithic-crystal tuff with the crystal-rich mesoscopic appearance reflecting strongly porphyritic lava clasts. These are glassy types, mildly devitrified and sericite-quartz-veined and -altered, and more or less pervasively Fe-stained in response to partial weathering. The cherty quartz cement is mildly corrosive and of hydrothermal character. Textural features consistent with subaerial deposition.

SAMPLE NO.: 427482 (T.S. 60185)

CLASSIFICATION/ COMPOSITION: **Hematitic, Sericitic "Rhyolite".** Disseminated variably corroded quartz (mean 500 um), subordinate sericite-pseudomorphed feldspar phenocrysts and hematitic sericite pseudomorphs after amphibole microphenocrysts (mean 150 um). Groundmass of variably sericite-stained fine (mean 50 um) anhedral quartz, sericite aggregates and pervasive ultrafine, partly degraded hematite.

FABRIC: Weakly flow-structured, porphyritic, felsitic (devitrified). Unstressed.

ACCESSORIES: Sporadic microfractures with bleached selvedges (sericitic, hematite-deficient). Thinly disseminated leucoxenised opaques and martitised magnetite. Minor ill-defined sericitised "basaltic" xenoliths (to 500 um).

INTERPRETATION/ COMMENTS: A devitrified, pervasively sericite-quartz-altered and hematite-stained porphyritic acid volcanic. Reasonably categorised as rhyolitic, but possibly strictly rhyodacitic. Incipiently xenolithic, with thoroughly sericitised basic lava clasts. The Fe-oxide (partly degraded hematite) appears to be primary in part and is "bleached" adjacent to sericitic microfractures.

62

SAMPLE NO.: 427 486 (T.S. 60186) 2.

CLASSIFICATION/ COMPOSITION: **Pebbly Orthoquartzite**. Framework of subangular to subround quartz grains, relatively minor chert clasts; interspersed pebble-sized clasts of chert and vein-type quartz aggregates. Cement consists of overgrowth quartz, supplemented by a little intergranular microcrystalline quartz.

FABRIC: Bimodally sorted/weakly bedded, locally slumped pebbly medium sandstone. Weakly stressed and microfractured.

ACCESSORIES: Conspicuous detrital chromite, subordinate zircons, leucoxene, minor rutile, and traces of tourmaline, monazite and hematite.

INTERPRETATION/ COMMENTS: A pebbly, medium-grained quartz sandstone (orthoquartzite) with slumped bedding defined by a weak primary dimensional orientation and enhanced by contorted heavy mineral partings ("placers"). Rock "grades" locally into a sand-supported conglomerate. Unaltered, but mildly stressed.

SAMPLE NO.: 427488 (T.S. 60187)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Tuff**. Loose framework of weakly sericitic feldspar (mainly albite) crystals/crystal fragments, relatively minor quartz crystal fragments and ill-defined microcrystalline lava clasts. Matrix of Fe-pigmented cloudy microcrystalline K-feldspar with minor quartz. Disseminated silt-sized leucoxenic semi-opaques and subordinate magnetite.

FABRIC: Weakly bedded fine sandy angular clastic, with a vaguely relict microshardy-textured, devitrified glassy matrix.

ACCESSORIES: Minor chloritised ferromagnesian silicate crystal fragments. Thinly disseminated clastic apatite, rare zircons.

INTERPRETATION/ COMMENTS: A rhyolitic vitric-crystal tuff or psammitic ash with sub-distal subaqueous characteristics. Strictly a sandy pelitic ash. Reflects devitrification and mild chloritic/sericitic alteration after ferromags. and plagioclase respectively.

63 SAMPLE NO.: 427489 (T.S. 60188)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Tuff**. Aggregates of sericite and crypto- to microcrystalline quartz with thinly disseminated sericite-pseudomorphed feldspar grains and corroded phenocrystal quartz. Sporadic clots and films of limonite, minor limonitic cavities representing degraded/ferruginised carbonate impregnations.

FABRIC: Contorted, flow-structured lapilli; lithoclastic with recognisable fiamme and a poorly defined contorted eutaxitic matrix.

ACCESSORIES: Rare xenoliths of quartz-mica phyllite. Rare ultrafine discontinuous films of carbonaceous matter. Thinly disseminated leucoxenised opaques.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz(-carbonate)-altered acid tuff with flow-brecciated ignimbritic characteristics. Includes rare xenoliths of low-grade regional metapelite and microscale discontinuous films of carbonaceous matter apparently remobilised from pelitic xenoclasts. Compositional detail obscured, but broadly rhyolitic.

SAMPLE NO.: 427490 (T.S. 60189)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Breccia**. Aggregates of microcrystalline quartz with varying proportions of sericite, thinly disseminated to locally conspicuous corroded phenocrystal quartz, relatively minor sericite-quartz pseudomorphs after phenocrystal feldspar. Semi-pervasive limonitic/degraded hematitic Fe-stainings; subordinate leucoxenic stainings.

FABRIC: Psammite- to lapilli-grade, contorte, flow-structured, lithoclastic. Clasts are mainly microfelsitic (devitrified lava), but include sporadic fiamme. Microfelsitic matrix. Incipiently sheared.

ACCESSORIES: Irregular networks of sericitic microcrystalline quartz veinlets. Minor leucoxenised opaques and thinly disseminated martitised magnetite.

INTERPRETATION/ COMMENTS: A devitrified and thoroughly quartz-sericite-altered rhyolitic lithoclastic breccia. General features are tuff lava/lava breccia-like, but corroded relics of fiamme-structured lithoclasts indicate a thoroughly welded/flow-brecciated ignimbritic mode of origin.

SAMPLE NO.: 427491 (T.S. 60190)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Breccia**. Microcrystalline quartz with subordinate/variable proportions of sericite. Disseminated to semi-conspicuous corroded phenocrystal quartz, minor quartz-pseudomorphed feldspar and leucoxenic, sericitic quartz-pseudomorphed ferromagnesian (?pyroxene) phenocrysts.

FABRIC: Contorted/flow-structured, psammite- to lapilli-grade, moulded lithoclastic, with sporadic fiamme supplementing felsite-micro-textured lava clasts. Very incipiently sheared.

ACCESSORIES: Leucoxenic stainings, minor leucoxenised opaques. Sparse microscopic cavities after carbonate rhombs. Minor secondary films of limonite.

INTERPRETATION/ COMMENTS: Affinities with 427490; essentially similarly textured, altered, and similarly interpreted. In contrast, this rock exhibits minor altered ferromagnesian phenocrysts, has a relatively moulded fabric, and is only incipiently iron-stained.

SAMPLE NO.: 427492 (T.S. 60191)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Tuff**. Sericite with subordinate crypto - to microcrystalline quartz with disseminated sericite- and sericite-quartz-pseudomorphed feldspar- and minor quartz crystal fragments. Disseminated leucoxenised opaques.

FABRIC: Weakly lithic-crystal fragmental (psammite grade), with a vaguely relict shardy, semi-eutaxitic matrix. Incipiently sheared.

ACCESSORIES: Traces of martitised, degraded magnetite. Minor silicified microshards (bulk are sericitised). Rare quartz microspherulites.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz-altered felsic ("rhyolitic") lithic-vitric-crystal tuff; dominated by ill-defined sericitised shards with relatively minor clearly defined silicified vitric components. The vague relict fabric is consistent with an ignimbritic mode of origin. Degraded magnetite possibly masks traces of oxidised pyrite.

SAMPLE NO.: 427493 (T.S. 60192)

CLASSIFICATION/ COMPOSITION: **Rhyolitic "Tuff"**. Aggregates of crypto- to microcrystalline quartz with subordinate sericite, minor to locally conspicuous clastic quartz grains and ill-defined sericitised feldspar grains. Disseminated to conspicuous sericite-quartz-altered clasts of felsic ("rhyolitic") lava and subordinate clasts of similarly altered vitric tuff.

FABRIC: Variable, but essentially fine sandy angular lithoclastic, with irregularly interspersed zones of lithoclastic sand-matrixed, coarser-grained lithic breccia, and coarse slumped-intraclastic zones of sandy breccia.

ACCESSORIES: Irregularly dispersed limonitic stainings (fine carbonate-derived in part). Sparse leucoxenic semi-opaques.

INTERPRETATION/ COMMENTS: This rock appears to represent a composite of mildly reworked and subordinate primary rhyolitic tuffaceous components. Detail is obscured by slumping effects and particularly by the marked cherty silicification of lithoclasts in the sandy matrix interunits and slumped intraclasts.

SAMPLE NO.: 427494 (T.S. 60193)

CLASSIFICATION/ COMPOSITION: **Brecciated Rhyolite**. Frequent corroded quartz phenocrysts, relatively minor sericite-pseudomorphed feldspar phenocrysts in an altered groundmass of sericite and variably sericite-stained very fine anhedral quartz.

This rock exhibits a pervasive irregular network of cherty microcrystalline quartz-infilled fractures with disseminated to conspicuous mechanically included quartz grains and altered lava clasts.

FABRIC: Strongly porphyritic and finely felsitic (devitrified). Brecciated and cemented with ultrafinely microcrystalline quartz.

ACCESSORIES: Minor leucoxenised opaques and minor traces oxidised very fine pyrite. Minor late veinlets and vugs of chalcedonic quartz. Minor secondary limonite films and stainings.

INTERPRETATION/ COMMENTS: A strongly quartz-porphyritic glassy rhyolite, devitrified and pervasively sericite-quartz-altered, subsequently fractured and re-cemented with microcrystalline quartz, weakly refractured and veined with chalcedonic silica.

SAMPLE NO.: 427495 (T.S. 60194)

CLASSIFICATION/ COMPOSITION: **Rhyolitic Xenotuff**. Framework of weakly sericitic albite, subordinate quartz and minor orthoclase crystals/crystal fragments with interspersed albitised and variably chloritic rhyolitic lava and porphyry clasts. Weakly chloritic crypto- to microcrystalline albite matrix/cement.

FABRIC: Poorly sorted, weakly bedded psammite to (minor) lapilli-grade crystal-rich fragmental. Mildly stressed.

ACCESSORIES: Minor clasts of "andesitic" lava, ferruginous silty shale and low-grade regional impure (sericitic) metachert. Conspicuous lithoclast-hosted and clastic magnetite, minor leucoxene. Weak Fe-stainings.

INTERPRETATION/ COMMENTS: A rhyolitic lithic-crystal tuff with minor extraneous lithoclasts (hence xenotuff). Subaqueous depositional characteristics, with an intraclastic cavity-filling albite cement. Lithoclasts exhibit albite-chlorite alteration; feldspars incipiently chloritised.

SAMPLE NO.:

CLASSIFICATION/ COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

67

ATTACHMENT

Sample No.	Description	Location
379488	Rhyolitic lava/intrusive	
427447	Dolerite?	10330N 4755E
427448	Dolerite	10320N 4735E
427449	Pelitic ash volcaniclastic	10800N 4830E
427808	Brecciated Rhyolitic lava	16440N, 7630E

Petrographic Descriptions

379488

In hand specimen this is a Massive green lithology with phenocrysts of clear subhedral quartz, up to 2mm diameter, and green subhedral to euhedral sericitised feldspar in a fine grained siliceous groundmass cut by fine white carbonate veins.

In thin section the quartz phenocrysts are seriate and generally have embayed and in some cases, finely recrystallised grain margins. The feldspars are pervasively altered to sericite +/- calcite while rare lathes of highly opaque included muscovite were noted. Accessories include zircon, rutile/leucoxene and ?pyrite. The groundmass has been coarsely recrystallised to a mixture of sericite k-feldspar and quartz, typical of the felsic lava's in this area. As noted above veins are dominantly carbonate with minor quartz-carbonate varieties.

427808

In outcrop a hackly weathering pattern results from subrounded fragments of massive pink-red lava in a finer grained foliated matrix. In thin section subhedral-euhedral quartz phenocrysts, often embayed and fractured, have a wide range of sizes, up to 2mm diameter. Subordinate sericitised feldspars are generally subhedral. The groundmass has been strongly recrystallised to granular quartz and k-feldspar with minor disseminated sericite and some sub-rounded radially structured spherulites. Zircon and apatite are the two major accessories. Two pervasive alteration types were noted, firstly fine disseminated red-brown opaques, probably hematite, and secondly sericite and lesser chlorite also disseminated in the groundmass. It is these two contrasting alteration types that have produced the breccia like appearance in outcrop.

427449

In hand specimen this is a fine grained, massive dark-grey to black lithology with obvious scattered quartz and feldspar crystal fragments and fine grained volcanic lithic fragments. In thin section, the clasts are dominated by embayed quartz crystals, up to 2mm diameter, and sub-angular quartz splinters. Feldspars are generally weakly sericitized, subhedral and up to 3mm diameter while the lithic fragments appear to be feldspar phyric lava with recrystallised quartz-k-feldspar-sericite groundmass, up to 2mm diameter. Minor clast types include possible detrified cuspate glass shards and a pyritic as fine grained recrystallised volcanic. These are set in a very fine grained, muddy, iron oxide impregnated matrix that is cut by stylolitic fractures. The matrix appears to have little obvious volcanogenic affinites and looks somewhat like the QRS. Minor quartz + iron oxide veins were noted.

APPENDIX 2.

649071

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05250

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3036	

DATE RECEIVED	RESULTS REQUIRED
14/03/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
5	07/04/88	1	108

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427601/708	SS	Prep: 016						Cu,Pb,Zn,Ag/101,As/114		
	427601/708	SS							Ba/401		
	427601/708	SS							Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

SOUTHWELL S/SEDS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05250	07/04/88	3036	1 OF 5

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427601	45	40	140	0.5	<0.008	330	13		
2	427602	25	20	55	0.5	<0.008	380	3		
3	427603	70	15	95	0.5	<0.008	410	4		
4	427604	30	10	70	0.5	<0.008	450	3		
5	427605	80	10	90	<0.5	<0.008	320	3		
6	427606	15	10	55	<0.5	<0.008	360	3		
7	427607	65	10	75	1.0	<0.008	260	8		
8	427608	30	20	100	1.0	<0.008	280	9		
9	427609	50	30	90	<0.5	<0.008	360	7		
10	427610	10	10	30	<0.5	<0.008	130	1		
11	427611	15	10	70	<0.5	<0.008	270	10		
12	427612	20	15	50	1.0	<0.008	280	2		
13	427613	10	10	15	<0.5	<0.008	100	1		
14	427614	15	20	65	0.5	<0.008	420	16		
15	427615	25	20	40	0.5	<0.008	340	9		
16	427616	20	15	60	<0.5	<0.008	450	4		
	427617	15	20	25	0.5	<0.008	250	8		
18	427618	15	10	55	<0.5	<0.008	360	4		
19	427619	15	5	30	<0.5	<0.008	360	4		
20	427620	225	85	320	<0.5	<0.008	410	9		
21	427621	410	190	725	1.0	<0.008	950	14		
22	427622	125	15	165	0.5	<0.008	370	6		
23	427623	215	40	425	0.5	<0.008	1450	7		
24	427624	175	60	520	<0.5	<0.008	310	14		
25	427625	85	25	130	0.5	<0.008	380	8		

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05250	07/04/88	3036	2 OF 5

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427626	55	10	90	0.5	<0.008	240	7		
2	427627	35	10	75	1.0	<0.008	<10	4		
3	427628	15	5	25	<0.5	<0.008	230	2		
4	427629	10	15	20	<0.5	<0.008	45	3		
5	427630	10	25	10	<0.5	<0.008	45	2		
6	427631	35	10	45	0.5	<0.008	100	6		
7	427632	50	15	90	<0.5	<0.008	210	21		
8	427633	50	20	105	<0.5	<0.008	700	7		
9	427634	15	10	45	<0.5	<0.008	330	3		
10	427635	20	15	55	<0.5	<0.008	440	1		
11	427636	50	5	110	0.5	<0.008	560	5		
12	427637	25	20	50	<0.5	<0.008	480	4		
13	427638	25	25	40	1.0	<0.008	310	2		
14	427639	20	5	30	<0.5	<0.008	190	2		
15	427640	15	10	20	<0.5	<0.008	140	3		
16	427641	25	15	30	1.0	0.010	40	2		
	427642	45	10	35	<0.5	<0.008	55	3		
18	427643	25	15	155	1.0	<0.008	25	3		
19	427644	20	5	40	<0.5	<0.008	360	2		
20	427645	20	20	125	<0.5	<0.008	310	5		
21	427646	15	25	30	1.0	<0.008	290	2		
22	427647	10	20	65	<0.5	<0.008	400	4		
23	427648	15	10	40	<0.5	0.010	380	8		
24	427649	20	25	80	<0.5	<0.008	630	4		
25	427650	25	5	70	1.0	<0.008	470	9		

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05250	07/04/88	3036	3 OF 5

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427651	5	<5	40	1.0	<0.008	430	3		
2	427652	5	20	20	<0.5	<0.008	80	1		
3	427653	10	15	40	<0.5	<0.008	35	1		
4	427654	15	10	15	<0.5	<0.008	15	1		
5	427655	5	<5	10	<0.5	<0.008	10	1		
6	427656	25	20	25	1.0	<0.008	<10	1		
7	427657	10	10	30	<0.5	0.010	300	1		
8	427658	10	10	40	<0.5	<0.008	320	1		
9	427659	10	10	40	<0.5	<0.008	290	2		
10	427660	5	10	30	<0.5	<0.008	220	1		
11	427661	5	<5	20	2.5	<0.008	240	1		
12	427662	<5	5	20	<0.5	<0.008	170	1		
13	427663	15	5	50	<0.5	<0.008	290	1		
14	427664	20	<5	60	<0.5	<0.008	250	2		
15	427665	10	5	60	<0.5	<0.008	250	2		
16	427666	15	10	55	<0.5	<0.008	550	1		
	427667	5	10	50	<0.5	<0.008	470	1		
18	427668	10	10	10	<0.5	<0.008	15	1		
19	427669	25	10	65	<0.5	<0.008	430	3		
20	427670	15	15	60	<0.5	<0.008	510	2		
21	427671	65	10	135	<0.5	0.008	290	15		
22	427672	185	195	500	<0.5	<0.008	460	22		
23	427673	20	<5	60	<0.5	<0.008	380	2		
24	427674	15	<5	85	<0.5	0.010	760	7		
25	427675	50	5	115	<0.5	<0.008	700	7		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05250	07/04/88	3036	4 OF 5

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427676	35	5	80	<0.5	<0.008	560	6		
2	427677	55	<5	60	<0.5	<0.008	650	7		
3	427678	30	25	70	<0.5	<0.008	530	4		
4	427679	25	5	45	<0.5	<0.008	460	16		
5	427680	10	5	35	0.5	<0.008	420	35		
6	427681	10	5	50	0.5	0.010	570	6		
7	427682	15	10	60	<0.5	0.008	490	2		
8	427683	30	10	60	<0.5	<0.008	420	2		
9	427684	40	10	105	<0.5	<0.008	650	4		
10	427685	15	<5	80	2.0	0.010	660	3		
11	427686	25	<5	55	0.5	<0.008	850	2		
12	427687	25	10	115	<0.5	<0.008	430	3		
13	427688	10	5	40	<0.5	<0.008	750	9		
14	427689	15	5	80	<0.5	<0.008	420	5		
15	427690	10	5	40	0.5	<0.008	290	3		
16	427691	25	5	45	0.5	<0.008	430	14		
	427692	175	5	145	<0.5	<0.008	620	61		
18	427693	30	<5	75	<0.5	IS	IS	3		
19	427694	50	5	50	<0.5	<0.008	310	2		
20	427695	60	15	110	<0.5	<0.008	1150	5		
21	427696	10	<5	50	<0.5	<0.008	480	2		
22	427697	480	5	490	<0.5	<0.008	760	5		
23	427698	55	35	160	<0.5	<0.008	480	5		
24	427699	90	20	170	<0.5	<0.008	420	4		
25	427700	80	60	255	<0.5	<0.008	600	7		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
-- = element not determined

AUTHORISED OFFICER

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05250	07/04/88	3036	5 OF 5

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427701	145	30	650	<0.5	<0.008	1550	8		
2	427702	60	95	270	<0.5	<0.008	640	11		
3	427703	35	165	365	<0.5	<0.008	620	12		
4	427704	45	10	210	0.5	<0.008	630	5		
5	427705	15	10	100	<0.5	<0.008	230	6		
6	427706	20	40	30	<0.5	<0.008	140	2		
7	427707	115	70	250	<0.5	0.027	550	4		
8	427708	10	10	110	<0.5	<0.008	830	3		
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22	NOTE: IS Denotes Insufficient Sample.									
23	DETECTION	5	5	5	0.5	0.008	10	1		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	401	114		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

949077

APPENDIX 3.

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(4)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05297

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3059	

DATE RECEIVED	RESULTS REQUIRED
30/03/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	18/04/88	1	30

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	Various	RC							Ba,Cr,Zr,Ti,Y/401		
	Various	RC							Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MACK. E.L.
SOUTHWELL ROCK CHIPS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05297	18/04/88	3059	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Ni
1	427368	25	15	30	<0.5	<0.008	1300	<1	25	35
2	427369	25	10	35	<0.5	<0.008	430	<1	20	25
3	427370	30	15	60	<0.5	<0.008	480	1	35	50
4	427374	15	10	20	<0.5	<0.008	230	<1	<5	15
5	427380	25	15	15	<0.5	0.009	390	<1	50	30
6	427381	20	10	35	<0.5	<0.008	850	<1	7	20
7	427382	25	20	75	<0.5	<0.008	240	2	20	35
8	427386	30	15	45	<0.5	<0.008	1300	5	30	30
9	427398	15	25	90	<0.5	<0.008	330	<1	<5	25
10	427399	25	40	170	<0.5	<0.008	560	7	95	85
11	427400	25	15	60	<0.5	<0.008	1300	1	<5	35
12	427401	20	55	90	<0.5	<0.008	420	3	25	30
13	427402	15	20	50	<0.5	<0.008	1250	1	<5	25
14	427403	15	20	80	<0.5	<0.008	1050	<1	7	25
15	427404	25	20	65	<0.5	<0.008	740	<1	<5	30
16	427405	10	10	90	0.5	<0.008	970	<1	8	20
[illegible]	427407	45	15	50	0.5	<0.008	3600	2	9	25
18	427408	30	15	35	<0.5	<0.008	730	6	15	20
19	427409	60	10	35	1.0	<0.008	1950	6	<5	25
20	427410	10	70	40	<0.5	<0.008	2650	2	55	25
21	427411	30	30	25	<0.5	0.013	1400	27	<5	25
22	427414	25	35	45	<0.5	<0.008	460	4	25	30
23	427415	25	15	30	0.5	<0.008	690	2	<5	30
24	427416	55	15	90	<0.5	0.013	920	4	10	30
25	427417	25	20	245	<0.5	<0.008	250	<1	20	30

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05297	18/04/88	3059	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Ni
1	427418	30	50	200	<0.5	<0.008	710	5	5	25
2	427420	10	70	95	2.5	<0.008	470	<1	<5	20
3	427421	35	15	105	<0.5	<0.008	1100	2	25	30
4	427422	30	10	55	0.5	<0.008	1300	1	35	35
5	427424	25	10	50	<0.5	<0.008	310	2	<5	30
6										
7										
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9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	101

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05297	18/04/88	3059	3 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y						
1	427368	190	870	25						
2	427369	170	890	30						
3	427370	170	1500	30						
4	427374	270	800	30						
5	427380	140	640	25						
6	427381	220	1000	40						
7	427382	180	1350	25						
8	427386	240	2250	20						
9	427398	260	1800	35						
10	427399	230	2850	35						
11	427400	330	1950	50						
12	427401	270	1450	30						
13	427402	260	1050	45						
14	427403	300	1000	45						
15	427404	260	1450	40						
16	427405	280	1400	40						
[illegible]	427407	220	1300	30						
18	427408	270	1200	40						
19	427409	250	1400	35						
20	427410	210	1050	35						
21	427411	270	1050	30						
22	427414	290	2100	40						
23	427415	260	2100	35						
24	427416	240	3200	30						
25	427417	180	2450	40						

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
-- = element not determined

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05297	18/04/88	3059	4 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y						
1	427418	270	1500	40						
2	427420	300	1000	55						
3	427421	140	2700	15						
4	427422	240	2300	30						
5	427424	200	980	30						
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	50	5						
24	UNITS	PPM	PPM	PPM						
25	METHOD	401	401	401						

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649083

(8)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05533

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3821	

DATE RECEIVED	RESULTS REQUIRED
17/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	28/06/88	1	12

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427479/82,427488/95	RO	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag/101,As/114		
	427479/82,427488/95	RO							Ba,Cr,Zr,Ti/401,Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

Medway

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05533	28/06/88	3821	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	Cr
1	427479	5	50	50	<0.5	<0.008	<0.008	3900	6	15
2	427480	10	65	155	<0.5	<0.008	–	980	3	55
3	427481	<5	30	35	<0.5	<0.008	–	340	3	10
4	427482	<5	55	45	0.5	<0.008	–	290	3	40
5	427488	5	20	45	<0.5	<0.008	–	1200	3	10
6	427489	<5	25	30	<0.5	<0.008	–	520	2	40
7	427490	5	30	35	0.5	<0.008	–	320	2	10
8	427491	5	20	20	0.5	<0.008	–	280	1	5
9	427492	5	80	25	<0.5	<0.008	–	360	2	30
10	427493	5	30	25	<0.5	<0.008	–	160	1	6
11	427494	5	20	20	<0.5	<0.008	–	120	1	70
12	427495	5	15	80	0.5	<0.008	–	300	1	15
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	0.008	10	1	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	309	401	114	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05533	29/06/88	3821	2 OF 2

TUBE No.	SAMPLE No.	Zr	Ti							
1	427479	220	2650							
2	427480	200	4600							
3	427481	1950	900							
4	427482	3800	960							
5	427488	380	2250							
6	427489	160	1050							
7	427490	220	580							
8	427491	260	640							
9	427492	270	1350							
10	427493	140	440							
11	427494	180	660							
12	427495	250	420							
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	50							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
-- = element not determined

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

(9)

ANALYTICAL REPORT No. 23.3.08.05543

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3827	

DATE RECEIVED	RESULTS REQUIRED
23/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	12/07/88	1	12

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427496/500,427801/07	RC	Prep: 013,016						Cu,Pb,Zn,Ag/101,As/114		
	427496/500,427801/07	RC							Ba,Cr,Zr,Ti,Y/401,Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MEDWAY
ROCK CHIPS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05543	12/07/88	3827	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	427496	10	40	40	<0.5	<0.008	240	5	15	100
2	427497	5	20	30	<0.5	<0.008	140	2	50	150
3	427498	5	5	15	<0.5	<0.008	410	3	<5	300
4	427499	5	<5	15	<0.5	<0.008	480	2	25	190
5	427500	<5	10	15	<0.5	<0.008	450	1	<5	180
6	427801	5	<5	10	<0.5	<0.008	330	1	45	110
7	427802	<5	<5	10	<0.5	<0.008	180	1	35	140
8	427803	5	10	10	0.5	<0.008	600	3	20	280
9	427804	<5	5	20	<0.5	<0.008	230	2	6	210
10	427805	5	<5	15	0.5	<0.008	220	1	40	230
11	427806	5	<5	15	0.5	<0.008	260	1	<5	220
12	427807	<5	<5	5	<0.5	<0.008	140	1	40	180
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.06.05543	12/07/88	3827	2 OF 2

TUBE No.	SAMPLE No.	Ti	Y							
1	427496	670	25							
2	427497	1150	35							
3	427498	1750	35							
4	427499	800	45							
5	427500	760	25							
6	427801	480	20							
7	427802	600	25							
8	427803	1750	50							
9	427804	2150	30							
10	427805	700	30							
11	427806	650	30							
12	427807	690	25							
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	50	3							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649089

APPENDIX 4.

89

649090

ABERFOYLE RESOURCES LIMITED

EXPLORATION DIVISION

Mackintosh EL

MIDDLESEX ROAD DEPTH SOUNDINGS

Prepared by:

J Silic
Chief Geophysicist

Distribution

1. Aberfoyle Resources, Hawthorn (1)
2. Aberfoyle Resources, Burnie (2)

Issued by:

J Silic
Chief Geophysicist

649091

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EM-37 SURVEY

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Figs 6 - 10: EM-37 Sounding

Fig 11: GG 35A EM-37 Sounding

Fig 12: GG 35B EM-37 Sounding

Fig 13: GG 35C EM-37 Sounding

INTRODUCTION

In order to determine the thickness of the basalts in the northern part of the licence, two sets of EM in loop soundings were obtained; the first along a north-south line which follows the Middlesex Road was to provide the information on the variation of the tertiary basalt cover in a north-south direction, and similarly the second set along an approximate east-west line was to provide data on the east-west trends in the basalt cover (see Fig 1).

Prior to executing the survey, theoretical investigations of the expected responses, from models with basalt cover from 50 to 400 meters, and basalt resistivity of approximately 100 ohm meters (this known from our past work), led us to conclude that 100 meter square loop early time accurate EM data (data from approximately 100 microseconds onwards) should have the resolution to map basalt cover from about 50 - 400+ meters.

As a result 100 meter square loops were used to collect the data.

SIROTEM SURVEY

Both the early and standard time 100 m square loop SIROTEM data was collected along Line 1 of 2, at 50 meter station spacings.

Results are shown in profile form on Figures 2 - 5.

When attempting to invert this data, it was discovered that geologically unrealistic apparent resistivity were being obtained, with very low apparent resistivity of approximately 5 - 15 ohm-meters at the very early times progressively increasing to about 70 - 150 ohm meters at the late times.

These very low apparent resistivity at these very early times, would then suggest a very highly conductive thin layer very close to outcropping.

This did not confirm our expectations, nor our past experience.

It was therefore suspected that the crucial early time data was inaccurate, and most likely due to an incorrect determination of the current ramp turn off time, in this case 140 microseconds.

Nevertheless, assuming that the resistivity of the basalts is relatively uniform, then from SIROTEM data we could qualitatively estimate that the basalt cover is thinnest in the south and progressively thickens to the north, with little variation along line 2. This qualitative judgement is based entirely on the observation that the signal is increasing in a northerly direction along Middlesex Road (see Fig 2).

However, to obtain accurate estimates of the basaltic cover, we needed soundings with accurate early time data.

When a Geoterrex EM-37 crew was in the area in late October 1988, it was decided to repeat parts of the SIROTEM survey.

EM-37 SURVEY

Three 100 m square loop at 50N, 500N and 900N on line 1 and two 200 m square loop at 500N and 900N on line 1, EM-37 soundings were obtained.

The 200 m square loop was collected at 6.25 Hz transmitter base frequency to search for any possible deeper conductive layer. Data in apparent resistivity form is shown on Figures 6 and 7.

Data from 4 milliseconds onwards is considered to be unreliable and polluted by a DC offset in the readings. Apparent resistivity are extremely low and falling off at a very steep angle on the plot, much steeper than the theoretically possible maximums.

At times up to 4 milliseconds, however, the data can be explained by a simple geoelectric section, consisting of a shallow "conductive" layer overlying a resistive basement.

The 100 meter square loop data, with the transmitter waveform at 25 Hz, and the decay curve sampling from 0.085 milliseconds, was then used to estimate the thickness of the "conductive" basaltic cover.

The apparent resistivity curves (Fig 8, 9 & 10) indicate a simple geoelectric section, noted previously.

Very "realistic" apparent resistivity of approximately 80 ohm-meters are apparent at the earliest times, and monotonically increasing with time.

This data was computer inverted, to produce models of geoelectric sections. Results of this inversion are shown in Figures 11, 12 and 13.

The results indicate a thickening of basalt cover to the north, with thickness of about 100 meters in the south and in excess of 200 meters to the north.

Resistivity of the basalts are also increasing in a northerly direction.

COMMENTS ON THE EM SOUNDINGS

Conventionally the interpreted resistivity, depth sections are plotted below the centre of the energizing loop. As such it is "tempting" to attribute the resistivity-depth section to the plotting point.

This of course is only true if the resistivity-depth section is varying gently in the vicinity of the loop. This is a direct result of EM fields not only spreading out depth wise but also laterally, and as such lateral variations effect the data.

Therefore, it has to be understood, that the interpreted resistivity depth section is an "averaged" geoelectric profile for the area surrounding the loop, and does not represent the "local" conditions or minor variabilities that are occurring below the loop.

Any large discrepancies between the interpreted depth sections and drilling results have to be understood in this manner.

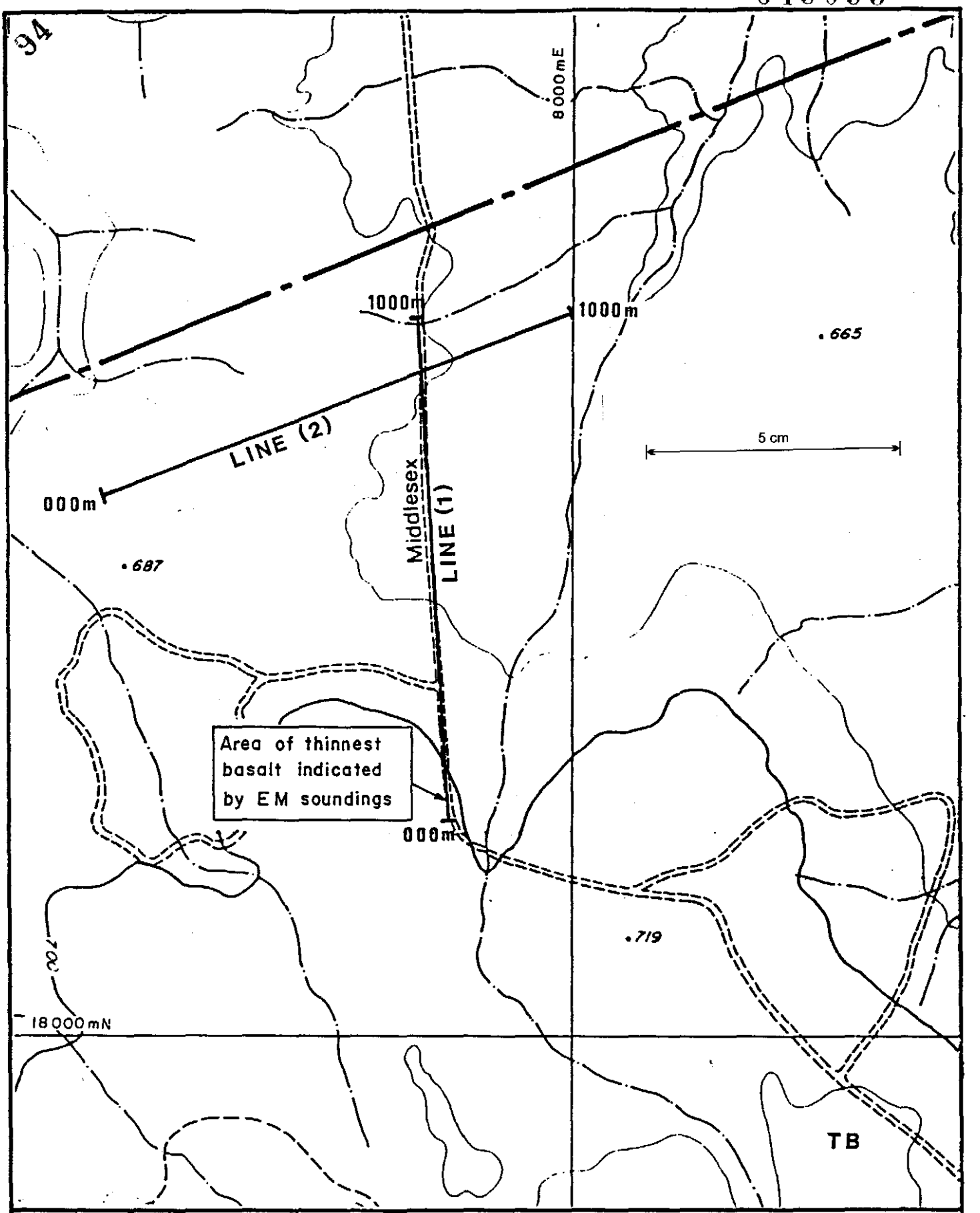
CONCLUSIONS

EM soundings have shown that the areas of thinnest basalt cover are over the southern part of the Middlesex Road, with basalt thickness of about 100 meters.

In the northern part of the grid however, the cover increases to about 200 meters.

649095

94



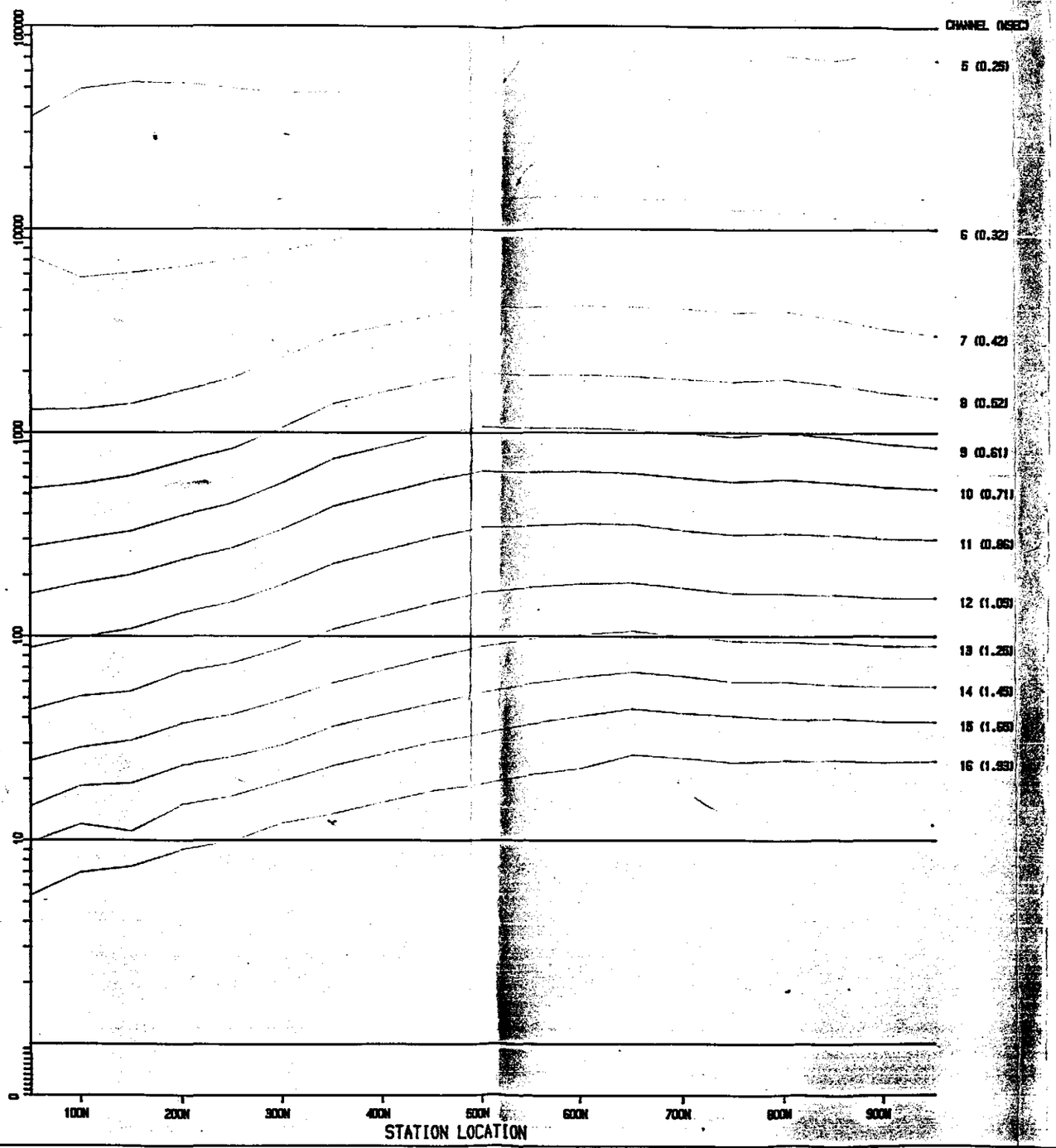
Aberfoyle Resources Limited

EXPLORATION DIVISION

FIG. 1

REVISIONS				NORTH WEST TASMANIA	Compiled : A McN
Init.	Date	Init.	Date	MACKINTOSH DISTRICT	Drawn : JLR
				EM SOUNDING LINES	Traced :
					Checked :
Location Code :				Scale : 1:10 000 / Date : September, 1988	Plate No. : MAC 213

95



95

SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : SEPT 1988
CONFIGURATION : 100M SQUARE TRANSMITTER LOOP, IN LOOP RECIEVER
READING INT. : 100 METRES
NO. OF STACKS : 256
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 12.0 AMPS
OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:5000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

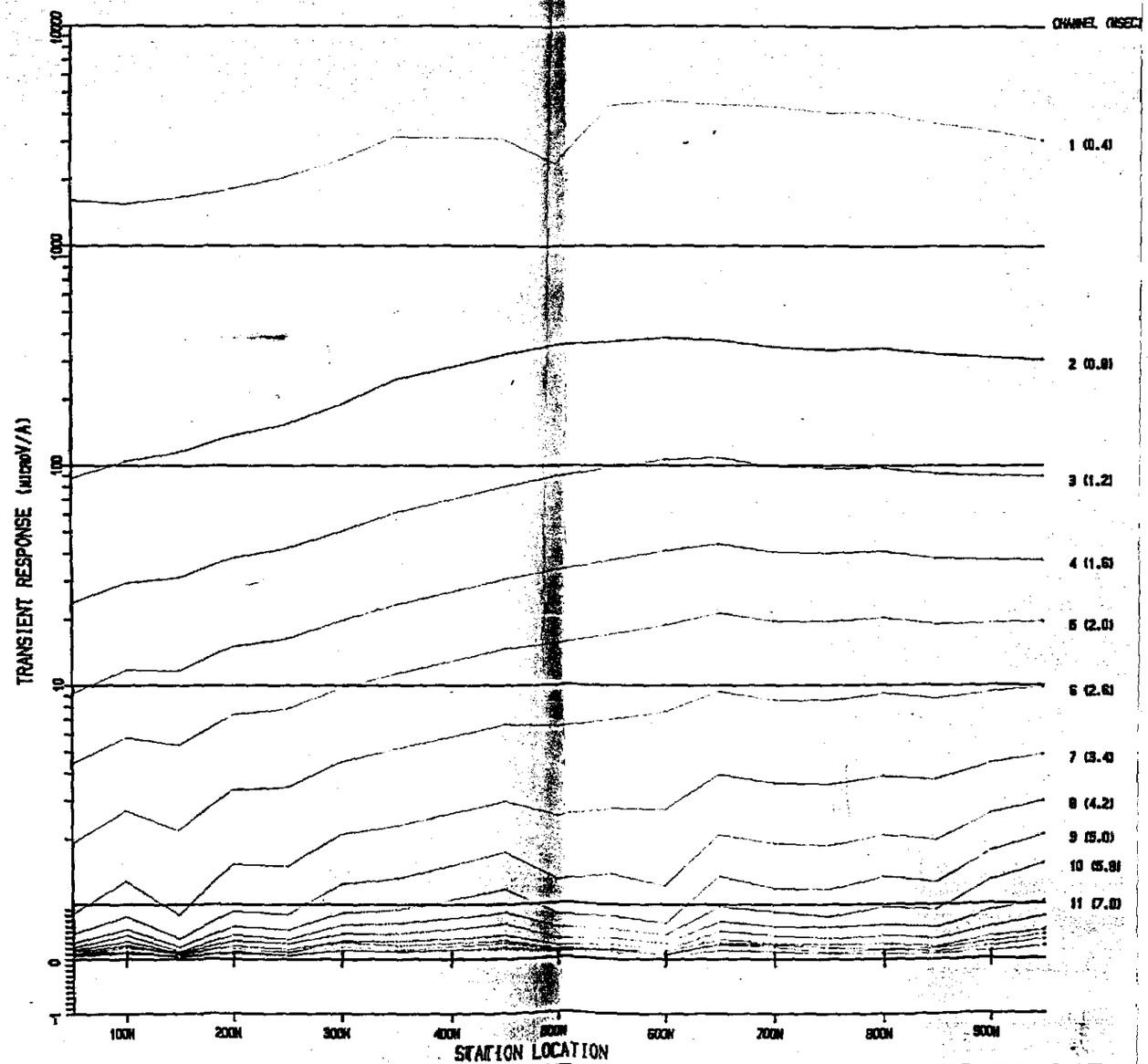
ABERFOYLE EXPLORATION

TASMANIA
MIDDLESEX ROAD
SIROTEM PROFILE
LINE LINE 1 ET

SCALE - 1:8000 | FIG. 2

96

649097



96

SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : SEPT 1988
CONFIGURATION : 100M SQUARE TRANSMITTER LOOP, IN LOOP RECIEVER
READING INT. : 100 METRES
NO. OF STACKS : 1024
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 12.0 AMPS
OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:5000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

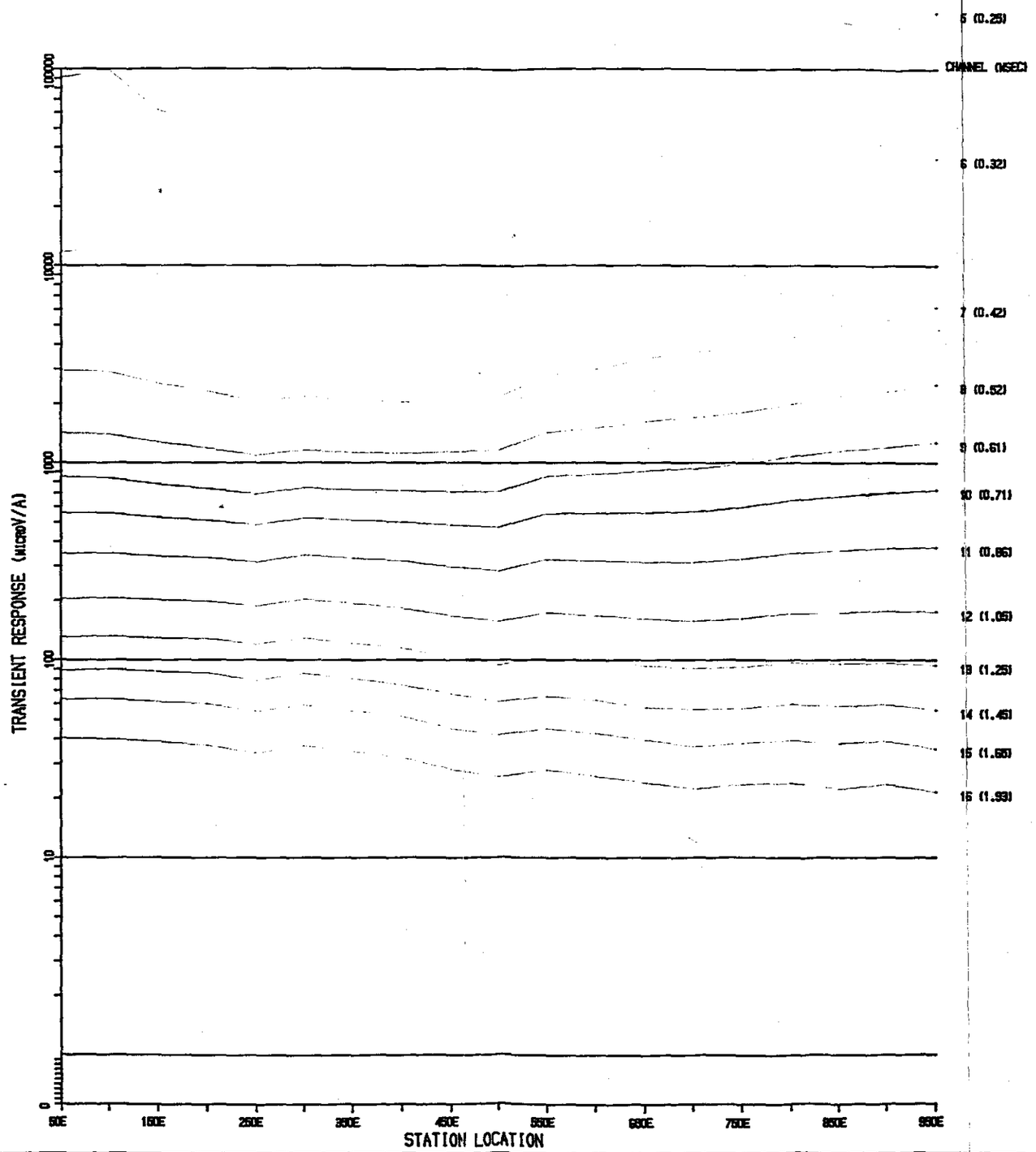
ABERFOYLE EXPLORATION

TASMANIA
MIDDLESEX ROAD
SIROTEM PROFILE
LINE LINE 1

SCALE - 1:5000 | FIG. 3

97

649098



97

SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : SEPT 1988
CONFIGURATION : 100M SQUARE TRANSMITTER LOOP, IN LOOP RECIEVER
READING INT. : 50 METRES
NO. OF STACKS : 256
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 12.0 AMPS

OPERATOR : P McSKIMMING

5 cm

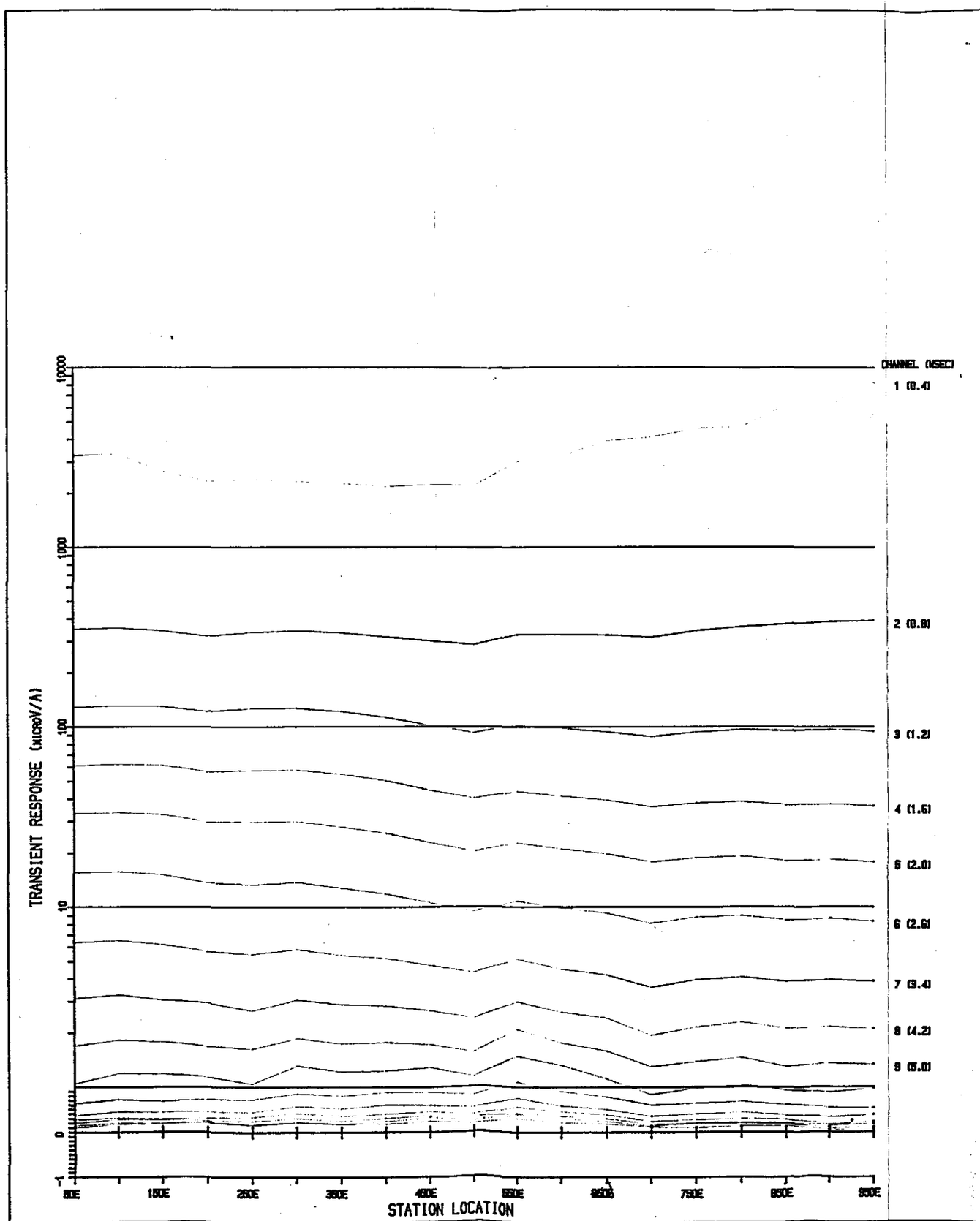
PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:5000
VERTICAL SCALE - LOGARITHMIC
4CYL PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MIDDLESEX ROAD
SIROTEM PROFILE
LINE LINE 2

SCALE - 1:5000 | FIG. 4



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : SEPT 1990
CONFIGURATION : 100M SQUARE TRANSMITTER LOOP, IN LOOP RECIEVER
READING INT. : 50 METRES
NO. OF STACKS : 1024
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 12.0 AMPS

OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:5000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MIDDLESEX ROAD
SIROTEM PROFILE
LINE LINE 2

SCALE - 1:5000 | FIG. 5

99

649100

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX POSITION	: 00100N	CLIENT	:
	: 00000E	PROJECT	:
TX LOOP SIZE	: 100 metres	AREA	:
	: 100 metres	PROJECT NO.	:
TX CURRENT	: 20.5 amps.	SURVEYED BY	: SD
TX TURN OFF	: 100 microseconds	DATE	: 27/10/1988
FREQUENCY	: 25 Hz.	SOUNDING NO..	: 1

COMMENT : ROAD

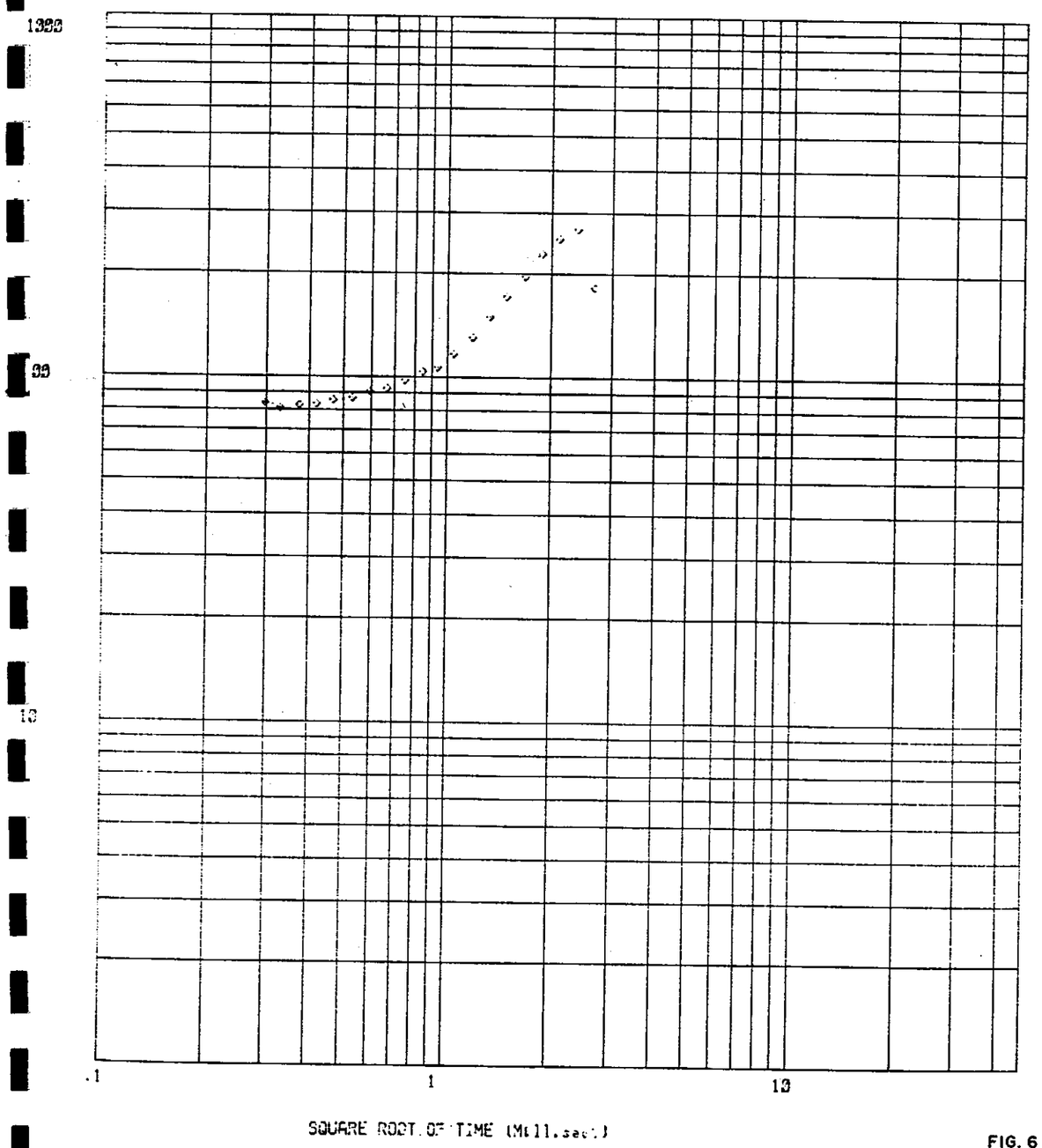


FIG. 6

649101

100

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX POSITION	: 00500N	CLIENT	:
	: 00000E	PROJECT	:
TX LOOP SIZE	: 100 metres	AREA	:
	: 100 metres	PROJECT NO.	
TX CURRENT	: 25.5 amps.	SURVEYED BY	: GD
TX TURN OFF	: 110 microseconds	DATE	: 27/10/1988
FREQUENCY	: 25 Hz.	SOUNDING NO.	2

COMMENT : ROAD

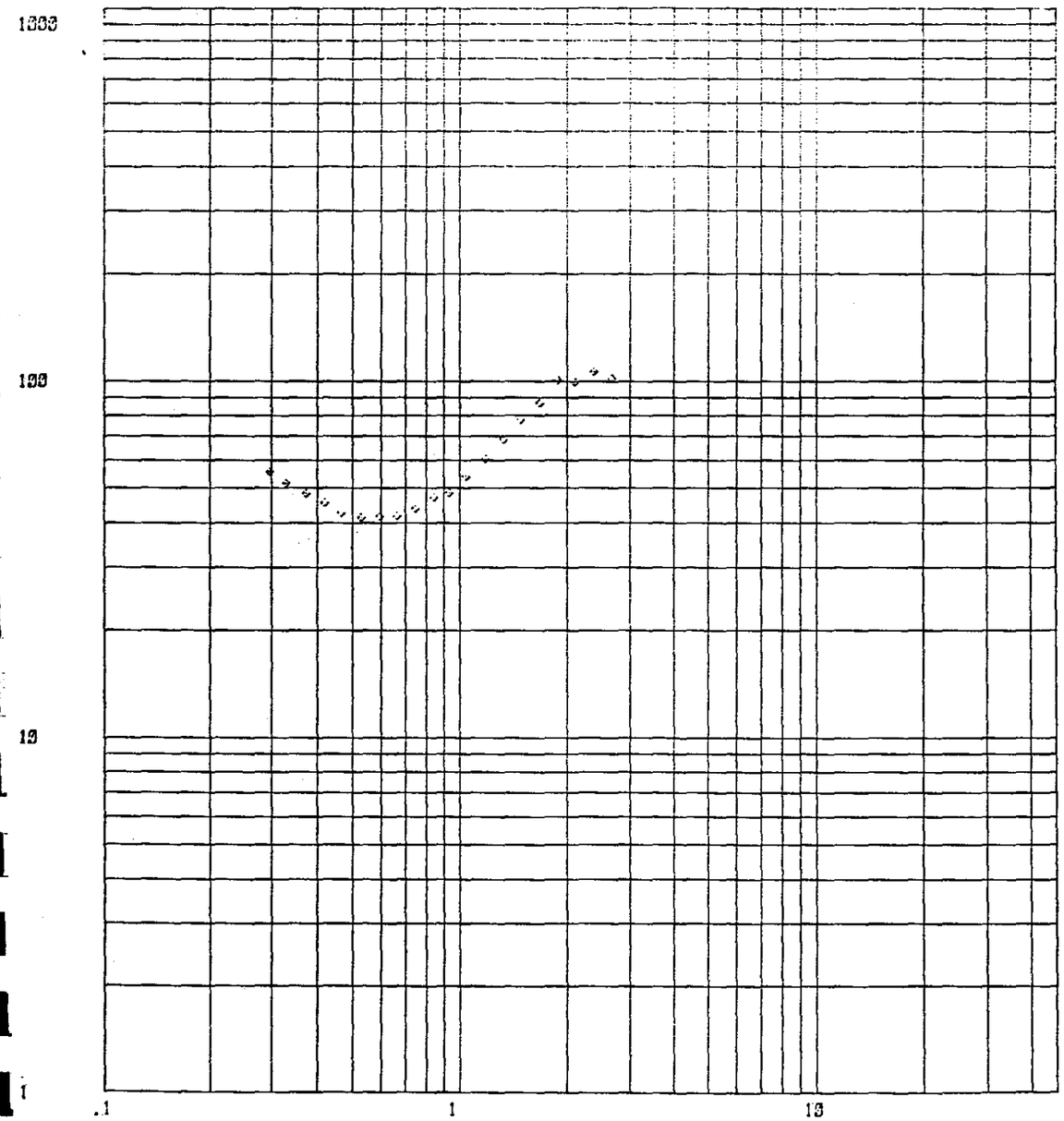


FIG. 7

101

649102

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX POSITION : 00000N
: 00000E
TX LOOP SIZE : 100 metres
: 100 metres
TX CURRENT : 26.5 amps.
TX TURN OFF : 115 microseconds
FREQUENCY : 25 Hz.

CLIENT :
PROJECT :
AREA :
PROJECT NO.
SURVEYED BY : SD
DATE : 27/10/1988
SOUNDING NO. : 3

COMMENT : ROAD

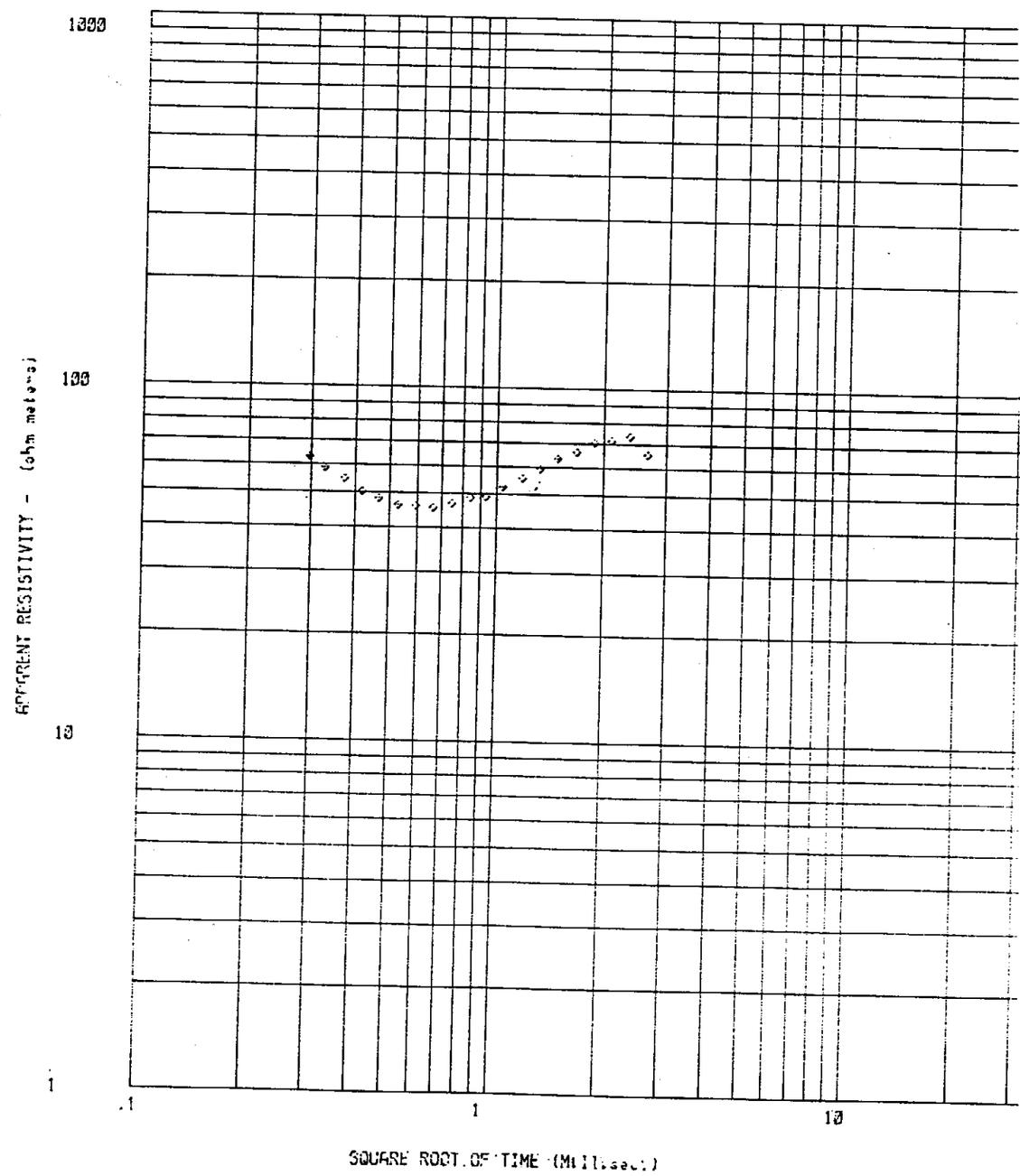


FIG 8

102

649103

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX POSITION	: 80500N	CLIENT	:
	: 877500	PROJECT	:
TX LOOP SIZE	: 200 metres	AREA	:
	: 200 metres	PROJECT NO.	:
TX CURRENT	: 20.3 amps.	SURVEYED BY	: SB
TX TURN OFF	: 213 microseconds	DATE	: 29/10/1983
FREQUENCY	: 6.25 Hz.	SOUNDING NO.	: 5

COMMENT : ROAD

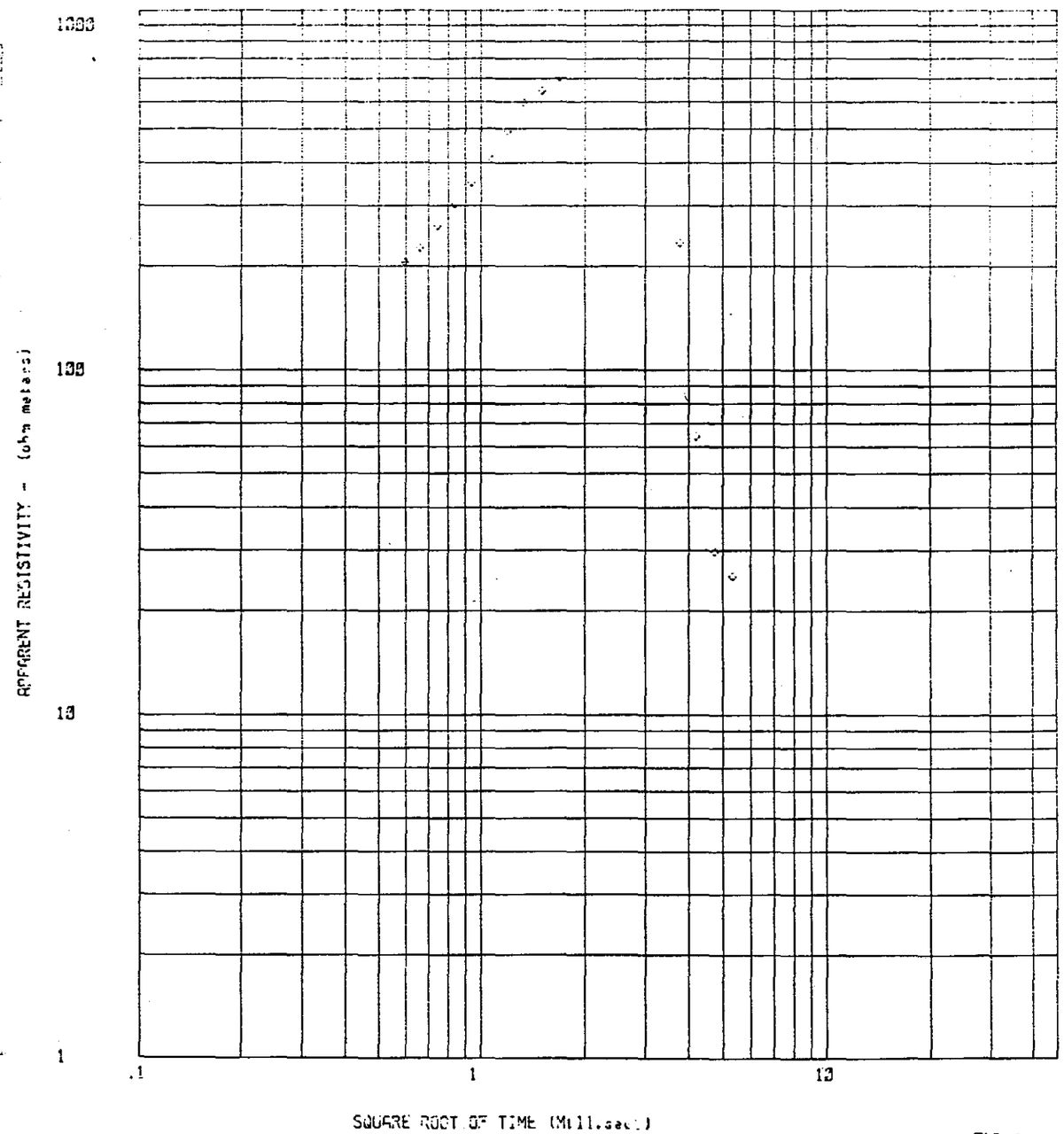


FIG. 9

649104

EM-37 SOUNDING

VERTICAL COMPONENT B (Z)

TX POSITION	: 00000N	CLIENT	:
	: 37750E	PROJECT	:
TX LOOP SIDE	: 200 metres	AREA	:
	: 200 metres	PROJECT NO.	:
TX CURRENT	: 20.5 amps.	SURVEYED BY	: SB
TX TURN OFF	: 210 microseconds	DATE	: 29/10/1983
FREQUENCY	: 8.25 Hz.	SOUNDING NO.	: 1

COMMENT : ROAD

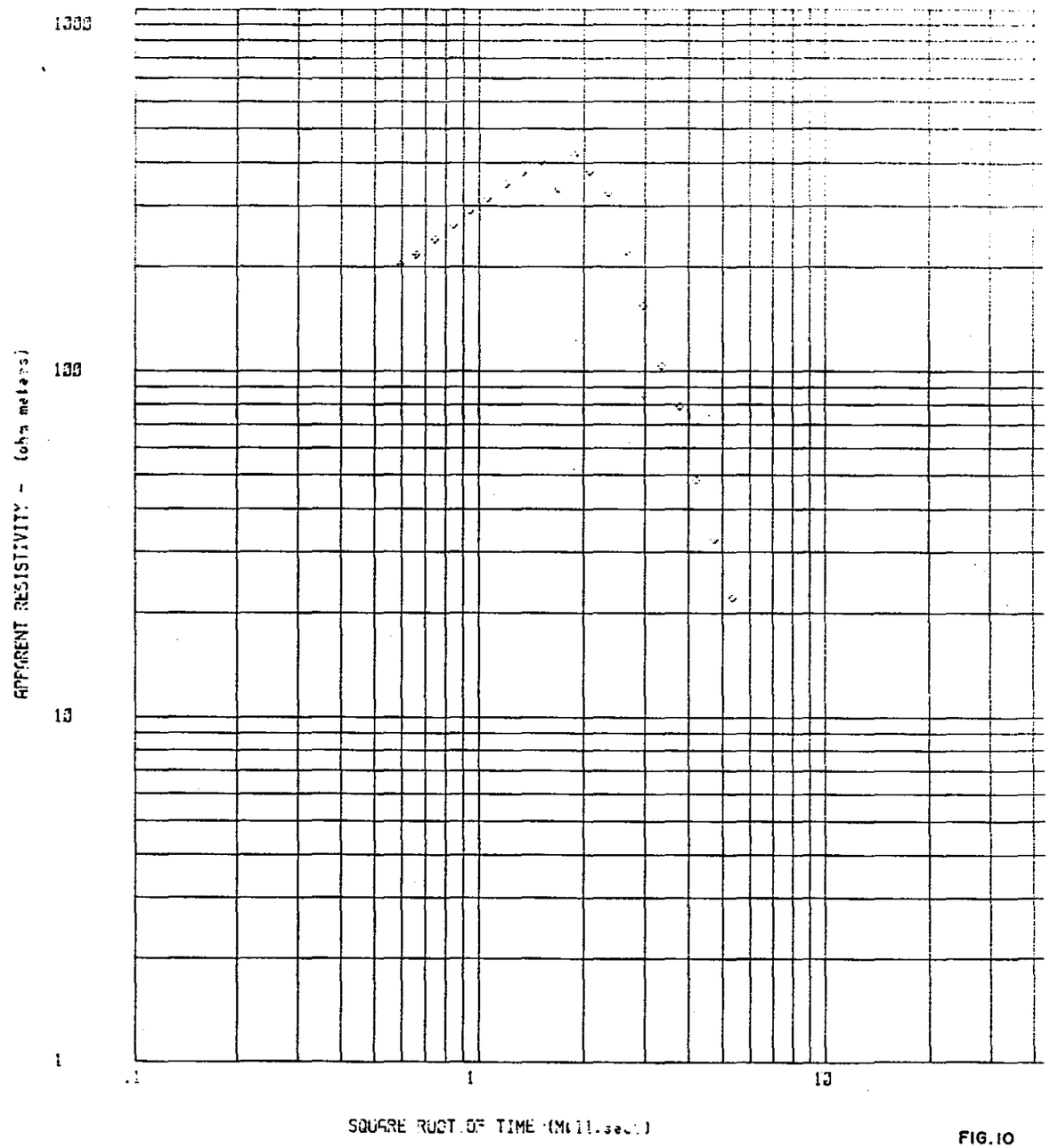
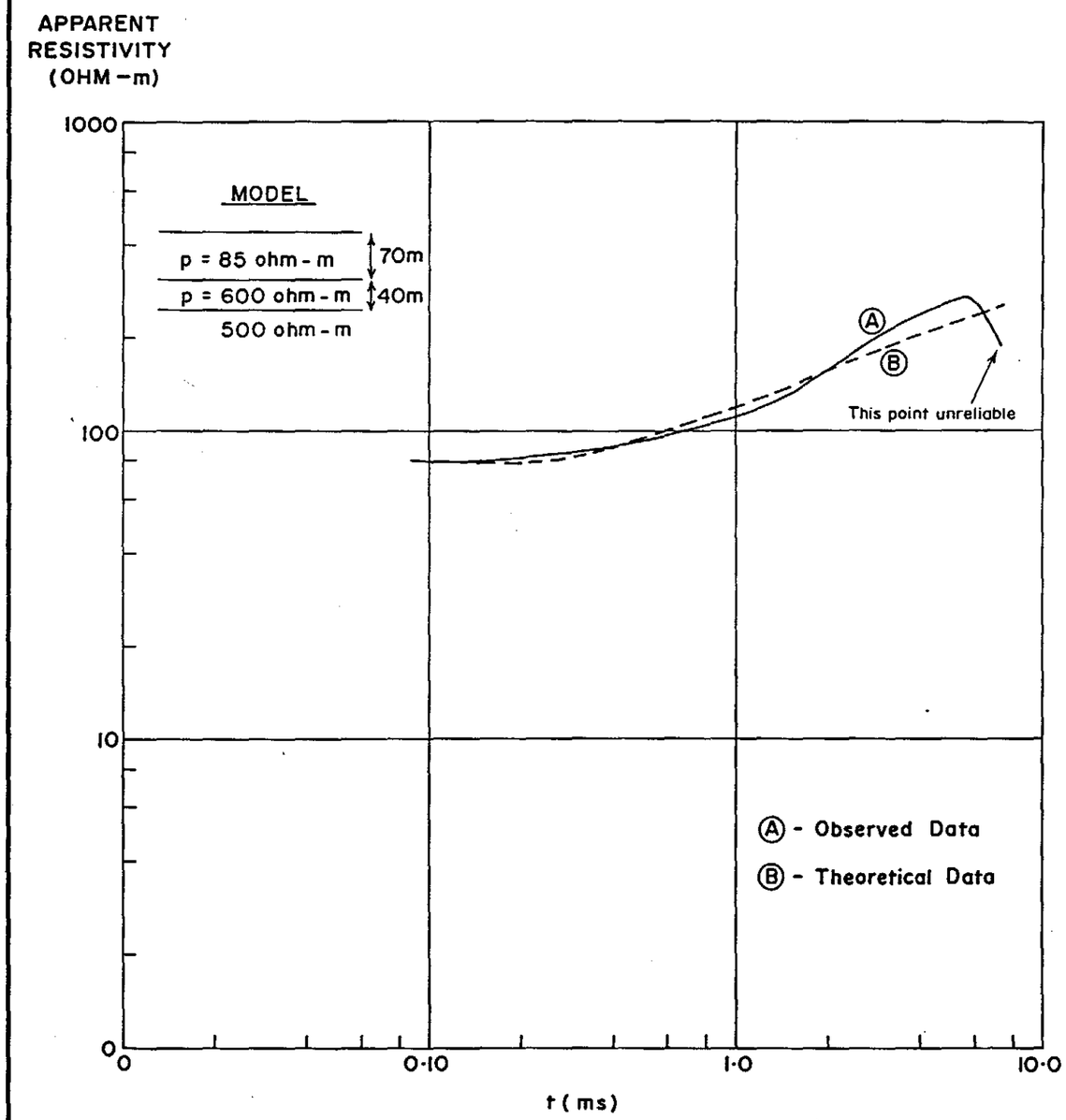


FIG.10

649105



5 cm

Aberfoyle Resources Limited

EXPLORATION DIVISION

FIG. 11

REVISIONS			
Init.	Date	Init.	Date

Location Code :

MIDDLESEX ROAD

EM 37 SOUNDING

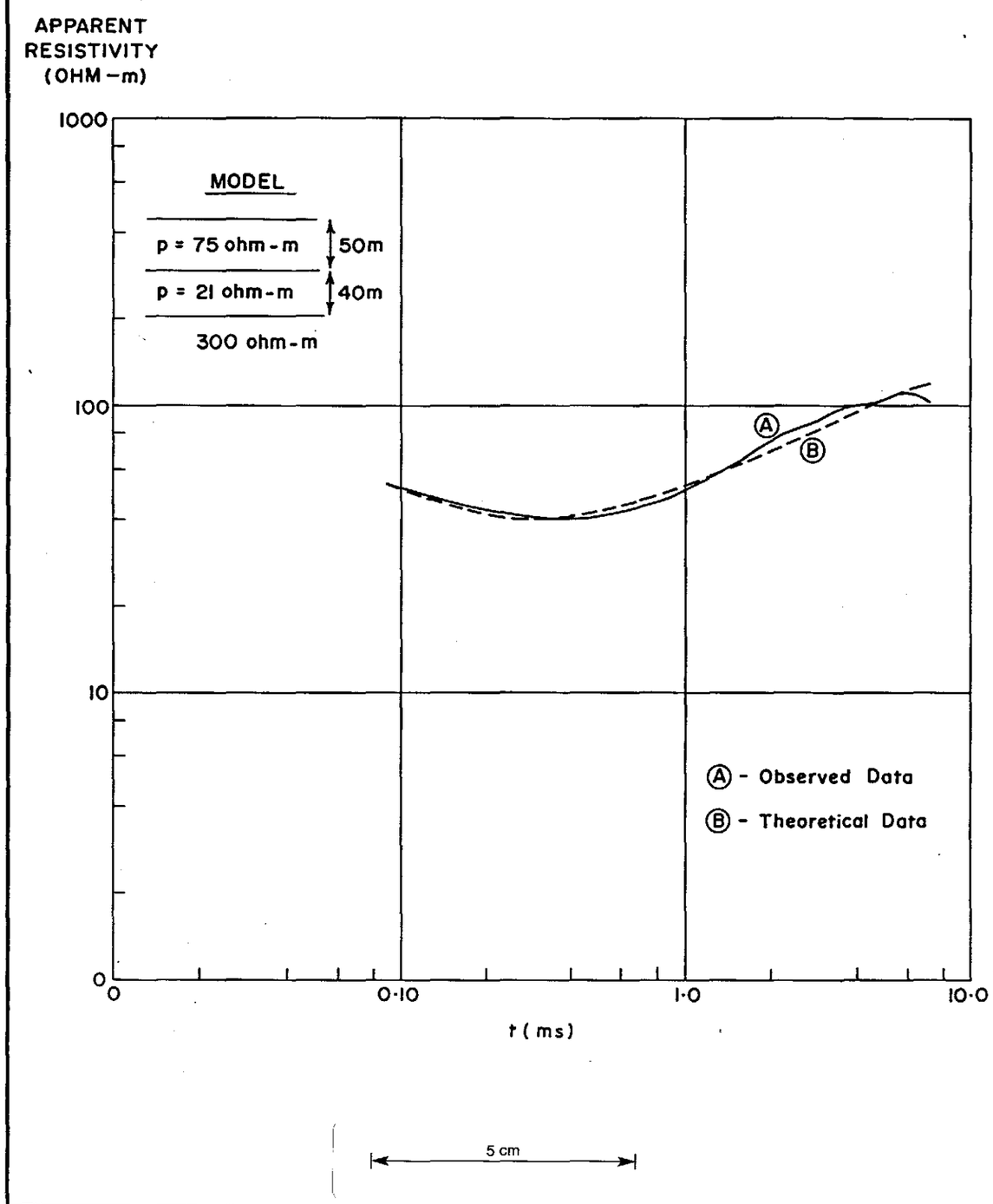
LINE I — 100N — INTERPRETATION

Scale : As shown

Date : March, 1989

Compiled :	JS
Drawn :	JS
Traced :	GLC
Checked :	
Plate No. :	GG 35 A

105



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EXPLORATION DIVISION

FIG. 12

REVISIONS			
Init.	Date	Init.	Date

MIDDLESEX ROAD

EM 37 SOUNDING

LINE 1 — 500N — INTERPRETATION

Compiled : JS

Drawn : JS

Traced : GLC

Checked :

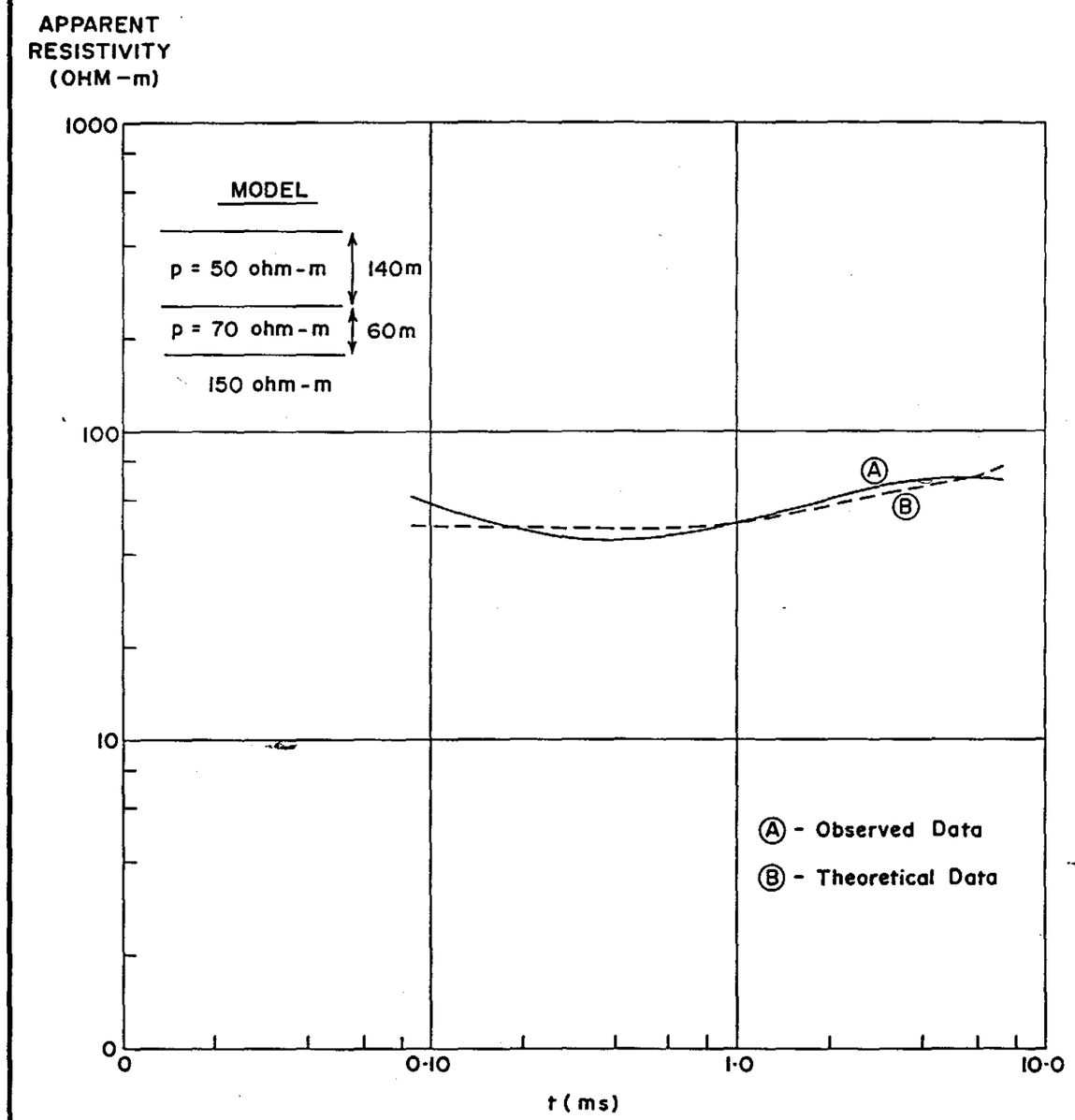
Location Code :

Scale : As shown

Date : March 1980

649107

106



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EXPLORATION DIVISION

FIG. 13

REVISIONS					
Init.	Date	Init.	Date	MIDDLESEX ROAD	Compiled : JS
				EM 37 SOUNDING	Drawn : JS
				LINE I – 900N – INTERPRETATION	Traced : GLC
					Checked :
Location Code :				Scale : As shown / Date : March, 1989	Plate No. : GG 35C

1511

640108

APPENDIX 5.

108

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

HOLE NO: MAC-20
PAGE: 1 of 10
LOGGED: J McN
DATE: 29.10.88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				Tricone - NO Core. 30								
		70%	Tertiary Basalt.	brown, vesicular (carbonate and zeolite filled) Minor feldspar phenocrysts. generally massive lava.					Ox 4			
10.5												
12		30%										
13.2									0.3 Ox 1-2			
14												
16				19.2 red-brown vesicular basalt lava, brecciated with black, vitreous fine grained coal? infilling.								
20				20.3 grey-green vesicular basalt lava.				28.5m, fractures at 75° to CA.				
30				31.0 brecciated red-brown basalt lava with ?coal matrix.								
32				32.5 massive green-grey basalt lava.								
34				34.7 brecciated red-brown basalt lava with ?coal matrix.								
36				36.6 grey vesicular basalt lava.								
40												
42												

649109

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

109

PROJECT : Mackintosh

PROSPECT : Middlesex rd.

HOLE NO : MAC-20

PAGE : 2 of 10

LOGGED : AMEN

DATE : 24-10-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
45 46 48 50			Tertiary Basalt.									
			49.5	49.2m - 10cm interbed of poorly consolidated gravel.								
			Tertiary Sediments. 51.4m	Dominantly bauxite and quartzite fragments to 0.1cm in a fine bauxitic matrix - thin clay interbeds								
52 54 56 58 60 62 64		30%	felsic lapilli Volcaniclastic.	green-white lapilli volcaniclastic with shale fragments and lower dark green chlorite, feldspar phyric andesite? lava fragments. lithology has 'sericitic frame' that produces a weak chloritic foliation. below section are scattered rounded medium quartzite fragments upto 5cm diameter. by 56.7m dark green microlitic basalt lava and pale-brown dacite lava fragments appear. fragments are generally 1-5cm dia and sub-rounded.	Se (2-3) Cl (1)	Qtz + Cl + fr. sp. (1-2)			Ch 3-4		63.2m. Petrology - 410632	
			64.5									
66 68 70 72 74 76 78 80 82 84			ash volcaniclastic	mottled red-pink-green silicified and weakly devitrified, in part, ash volcaniclastic with minor sericite and Chlorite spots.		72.6 Qtz Nonpenetrat fr. sp (1)	dis Red-fr Sp. (1)	73.0 fault = 45° to CA.				
			79.3	Almost Contact		79.6 Qtz + Cl (2)		79.5 Contact: 50° to CA.				
			felsic lapilli Volcaniclastic	fragments, <1cm diameter, of dark green andesite lava, brown-pink dacitic lava and qtz chert and angular sericitic 'frame' set in a sericite quartz + feldspar phyric matrix. commonly sub-angular material								

649110

110

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EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

HOLE NO: MRC-20
PAGE: 3 of 10
LOGGED: HMEN
DATE: 24-10-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
84			felsic lapilli volcaniclastic	83.0 Abrupt contact marked by broken core. Coarse lapilli-breccia volcaniclastic, with fragments to 7cm dia, of the same compositional types as described above. Andesitic fragments are feldspar phyric or vesicular while dacites are massive to flow-banded. Shale clasts below 94.5m. Clasts sub angular to sub-rounded.								
86												
88												
90												
92												
94												
96												
98		10										
100												
102												
104												
106				105.6 lithology becomes more silicified with a light brown-green matrix, banded with grey. Carbonate rock clasts appear. 108 fines to medium-coarse lapilli grade.	SI(2-3)		disp py (1)					
108												
110											HQ	
112											NQ	
114											113.35m Petrology 430623	
116												
118					117.5 SI(1-2)							
120												
122				fines to medium lapilli volcaniclastic								
124												
126							disp py (1)					

64911

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

111

PROJECT : Mackintosh

PROSPECT: Middleton Reward

HOLE NO: MAC 20

PAGE: 4 of 10

LOGGED: [illegible]

DATE: 24-10-W

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
150			felsic (rhyolitic?) lapilli volcaniclastic	green to pink polymict medium lapilli volcaniclastic with clasts dominated by pink dacite lava and sericitic "fiamme".	Si(1)							
152					Si(3)	Qvn.(1)	disp. py. (1-2) in matrix and clasts (dominantly grey chert)	150.0 fault zone c 10cm wide.				
154				154 fragments up to 10 cm dia.		Qvn (1)						
156				156.2 Abrupt fining - maximum clast size 15cm.		Qvn (1)		156.2 Contact = bedding = 60° to CA.				
158						Qvn (1)						
160				minor hematite altered Rhyolitic lava fragments.		Qvn (1)						
162						Qvn (1)						
164						Qvn (1)						
166						Qvn (1)						

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh

PROSPECT : Middlesex ext.

HOLE NO : MAC 20

PAGE : 5 of 10

LOGGED : A McN.

DATE : 1-11-87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170, 172, 174, 176, 178, 180, 182			Ash to fine lapilli Volcaniclastic	mottled light to dark green ash to fine lapilli volcaniclastic with scattered black shale, grey chert, quartz crystal and rhyolite lava fragments generally < 2mm dia.								
184			183.9 Medium-Coarse lapilli volcaniclastic	Subrounded fragments to 6cm diameter. include rhyolitic and dacitic lava, grey chert and bedded mica sandstone.		QtzCo (1-6)						
186			Mica Sandstone	grey mica sandstone with volcanic fragments to 1cm diameter interbedded c black shale								
188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210			186.1 interbedded lithicwacke-Mica Sandstone and shale.	medium to fine grained, grey, well bedded lithicwacke. Contains fragments of grey chert, quartz crystals, shale and quartzite. Lenticular interbedded fine grey mica sandstone and shale beds, often slumped. load casts indicate facing upholes. 206.5 cross bedded unit. 208.9 grey-green mica sandstone with black shale interbeds.		QtzCo (1-2)		186.5 bedding = 50° to CA. 189.9 bedding = 65° to CA. fault = 5° to CA. 191 bedding = 60° to CA. fault = 35° to CA. 194.2 bedding = 45° to CA. 197.5 fault = 35° to CA. 200.3 fault = 60° to CA. 201.6 bedding = 50° to CA. 203.1 fault = [illegible] 204.5 fault = [illegible]				196.6 Core orientation — CA = 52, RA = 49 ∴ bedding = 54 to 240 197.5 - Anastomosing faults	

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EXPLORATION DIVISION

DIAMOND DRILL LOG

113

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

HOLE NO: MC-20
PAGE: 6 of 10
LOGGED: [illegible]
DATE: 2-11-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
214			Interbedded lithicwacke, Sandstone and Shale.	Mica Sandstone interbedded with Shale.								
216				214.9 interbedded medium to Coarse grained lithicwacke, grey green Mica Sandstone and minor Shale.		Qtz+Co+Py (1-2)		215.9 bedding = 35° to CA.				
218				217.8 green-grey. breccia with lot angular fragment, generally clast but upto 2cm diameter supported by a medium to fine grained mica sandstone matrix. Clast there include Hematite altered lava, Shale, Vein quartz, quartzite, sericite altered volcanic, chert. interbedded with minor mica sandstone. Minor Andesite lava fragments at 220m.		Qtz+Co+Py (2) / Qtz+Co (1)		218.9 bedding = 45° to CA. / Contact = 60° to CA.			217.6 m Petrology 430625	
220						Qtz+Co (1)	Py disc. (1)	220.5 bedding = 70° to CA.				
222				221.9 Mica Sandstone and shale with minor lithicwacke interbeds.		Qtz+Co+ tr Py (1-5) / 229.5 Qtz+Co (1-2) / Qtz+Co + tr Py (1-2)		bedding = 50° to CA. / fault 10cm wide = 30° to CA. / 231.5 fault = 35° to CA. / 232.6 bedding = 50° to CA.				
224								237.4 fault = 55° to CA. Qtz+Co m. / 239.5 fault = 30° to CA. / 240.5 fault = 28° to CA. / 241.5 bedding = 55° to CA.				
226			241.9 felsic volcaniclastic	dark green with volcaniclastic Coarsens to fine lapilli volcaniclastic by 242.5 Shale fragments and Calcite frame. Then medium lapilli volcaniclastic by 242.7m.			242.6 Py pat. (2)					
228			242.5 lithicwacke, shale and sandstone	interbedded black shale, sandstone and lithicwacke		Qtz+Co (2)		Contact = 30° to CA. / Hard contact as upper intervals.				
230				244.9 grey-green mica sandstone with scattered 10-15cm diameter clasts of shale, quartzite, vein quartz, hematite chert, grey chert and sericite altered volcanic generally massive with some fine lithicwacke interbeds		250.5 Qtz+Co + tr Py (1-2) / Qtz+Co (1-2)	248 / 249 Py pat. (1)	Contact = 70° to CA.			251.4 Petrology 430626	
232												

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EXPLORATION DIVISION

DIAMOND DRILL LOG

649113

PROJECT : Mackinlay
PROSPECT: Middleton Rd.

HOLE NO: 114 MACLO
PAGE: 7 of 10
LOGGED: AMLN
DATE: 6-11-87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
154			Lithicwacke, Shale and Sandstone			Qxo (1-2)						
156												
158												
160				159 Coarse grained lithicwacke with a fine felsic sandstone matrix. 160.5		Qxo (1)		Contact = 50° to C.A.				
162				Medium to fine grained felsic sandstone with scattered clasts, generally 0.5 cm dia but upto 1.5 cm dia. and minor lithicwacke interbeds.								
164							263 py.pat. (1)					
166						Qxo (1)						
168							267 disc. sp.? (1)					
170												
172				172.9								
174				Medium to Coarse grained lithicwacke, clasts average 1 cm diameter. virtually clast supported. Clast types as above. 175.7								
176												
178				Abrupt Contact. Flame Structure => upholes facing.				176.4 bedding = 50° to CA.				
180				grey-black laminated shale with pyrite bands and beds. minor light grey sandstone interbeds.				180.0 bedding = 55° to CA.				
182												
184				183.1 1 cm thick grey fine lapilli volcaniclastic interbed.				183.5 fault = 15° to CA.				
186								187.5 bedding = 60° to CA.				
188						186.5 Qxo+py (2)		190.5 fault = 70° to CA.				
190								193.7 bedding = 10° to CA. 197 to 198.0 fault = 10° to CA.			198.4 Core Structure = CA. = 39° bedding = 10° to CA. [illegible] = 19° 199.7 Core [illegible] = CA. = 31 [illegible] = 55 bedding = 50° to 206°	bedding = 44° to 195°
192				191.6 5 cm thick grey medium lapilli volcaniclastic feldspar phyric with shale fragments. pyrite.				192.7 bedding = 10° to CA. 193.5 fault = 15° to CA. 194.4 bedding = 50° to CA.				
194												

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EXPLORATION DIVISION

DIAMOND DRILL LOG

649116

PROJECT : Mackintosh

PROSPECT : Middlesex ed.

HOLE NO : MK 20
PAGE : 8 of 10
LOGGED : Arlen.
DATE :

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296								297.1 fault zone broken core, sheared. Many fractures at low angle to core. Qtz veined				
298								301.1 fault = 20° to CA.				
300				300.0m. grey medium to dark lapilli volcaniclastic, feldspar phyric with black fragments.								
302				black to grey shale, laminated, with pyritic beds and minor interbedded fine grained light grey sandstone.								
304								305.6 bedding = 50° to CA.				
306												
308								309.3 bedding = 20° to CA. 309.9 fault = 40° to CA				
310			309.9 felsic lapilli Volcaniclastic - Polymict.	fine grained grey-brown lapilli volcaniclastic with minor sericitic quartz-feldspar phyric "fiamme" and Pyrite fragments interbedded with light orange ash volcaniclastic. banded to 311.5m below 312.5m = fragments of grey chert and shale to 1cm. below 313.5 pink silicified lava fragments	Qtz+Co (1-2)			310.5 Core orientation C.A = 39° R.A. = 79° ∴ bedding = 58° to 213°				
312				313.0 medium lapilli volcaniclastic c fragments to 5cm diameter.				314.4 bedding = 50° to CA.				
314				314.0 interbeds of fine lapilli volcaniclastic	Qtz+Co+Py (1-2)			314 fault = 20° to core axis. 314.1 bedding = 65° to CA.				
316					Qtz+Co (1) 321.3 321.5 Qtz+Co+Py (1)							
318				Quartz + feldspar phyric lapilli fiamme upto 9cm long but generally 1-2 cm long. clasts of black shale, Pyritic grey chert, silicified dacitic lava, grey sandstone								
320				irregularly shaped shale rafts upto 5cm long.								
322								329.3 fault = 35° to CA.				
324								331.6 fault = 5° to CA.				
326												

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EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

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HOLE NO: MAC 20
PAGE: 9 of 10
LOGGED: AMcN
DATE: 3-11-89

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338			Tuffaceous lapilli Volcaniclastic - Polymict	green-grey medium lapilli volcaniclastic. Clast types as described above.		Qtr+Co+ tr Py + tr Cl (1)						
340				340 minor fine lapilli interbeds.	339.9 fuchs att^n of sericitic frame	Q (1) Q+Co(1-2)						
342												
344				343.1 Common Pink-brown silicified O.L. Clasts.								
346				346.4 10 cm Coarse lapilli unit. Clasts dominated by sub angular massive to flow banded silicified lava fragments. - Clasts to 15 cm diameter.							345.65 Petrology 430637	
348			347.6 Breccia Volcaniclastic - Polymict	348.4 Breccia volcaniclastic with orange-brown matrix. Matrix is quartz-feldspar-phyric with lithic fragments to 0.5 cm. Supports sub-angular to sub-rounded clasts of black shale, quartz-phyric pink-brown Rhyodacitic lava, black shale interbedded with vol-caniclastic, grey chert and sericitic frame.		Q+Co (1)		347.2 fault: 10° to CA.				
350								349.0 fault = 75° to CA.				
352											352.5 m Petrology 430638	
354				at 348.9, dark green Quartz-feldspar-phyric Dacitic lava and white-grey irregularly banded to massive Carbonate fragments appear. Clasts to 15 cm diameter.		Q+Co(1)		354.3 fault = 65° to CA. 354.7 fault zone - bx + silicified 354.9 fault = 65° to CA.				
356				at 355.7 Dacitic lava fragment 10 to 19 cm diameter		Q+Co+Sc (1)						
358												
360												
362								363.1 fault = 55° to CA.				
364												
366												
368			368.5 Tuff lapilli volcaniclastic	Abrupt Contact. dark grey-green Sericitic volcaniclastic, quartz-feldspar-phyric with no lithic fragments. extensive appearance. by 370m becomes Pink-brown color. Silicified, with sericitic "frame".		Qtr+Py (1)		Contact: 55° to CA.				
370								370.5 fault = 50° to CA. 370.7 fault = 65° to CA.				
372						Q+Co (1-2)		371.4 fault = 31° to CA.				
374								373.4 fault = 21° to CA.				
376				375.3 376 Massive Pink-brown silicified with volcaniclastic.								
378							Py Pat (1-2)					

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DIAMOND DRILL LOG

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PROJECT : Mackintosh

PROSPECT : Middleton Road

HOLE NO : MRC 20
PAGE : 10 of 10
LOGGED : AMcN.
DATE : 3-11-92

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				cutaxitic pink-green volcaniclastic with black-grey massive to laminated with volcaniclastic matrix.								
384				appearance of flow-banded devitrified Dacite to Rhyolitic lave fragments to 10cm diameter.		Q+Co (1-2)	Py Pat (2)	379.5 fault = 30° to CA. 381.5 bedding = 65° to CA.				
386				Pyrite band = bedding?			Py Pat. (2)					
388				no lithic fragments obvious.		388.2 Q+Co+Cl + tr Py (2)		386.2 fault = 30° to CA. 387.2 ?bedding = 50° to CA.				
390												
392				392.2 minor Quartz-phyric pink-red rhyolitic lava frags. 0.1cm diameter. Sub-angular. b/w 391.2m grey chert Clasts. b/w 395.5 minor black shale frags.		Q+Co (2)		391.5 fault = 30° to CA. 392.2 fault = 55° to CA.				
394												
396				395.9. Mottled pink-green cutaxitic volcaniclastic with chlorite spots and Quartz Crystals.				396.2 fault = 55° to CA. Slk Q+Co+Cl/m.				
398			397.5 E.O.H.			Q+Co+Cl (2)						
400												

ATTACHMENT MAC-20

Sample No.	Depth	Description
430632	63.2	Lapilli volcaniclastic with Andesitic clasts.
430633	113.35	Pumiceous volcaniclastic
430634	163.8	Felsic fine lapilli volcaniclastic
430635	217.6	Interbedded pebble conglomerate and mica sandstone
430636	251.4	Mica sandstone
430637	345.65	Pumiceous volcaniclastics
430638	352.5	Coarse epiclastic with carbonate? fragments.

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649120

Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

31st January, 1989

REPORT CMS 88/12/9

YOUR REFERENCE:	Letter dated 16.11.1988
DATE RECEIVED:	9th December, 1988
SAMPLE NOS.:	430632 - 430638
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/12/9

A suite of seven diamond drill core samples from DDH/MAC-20 was received for routine petrological examination. Representative thin-sections were prepared and examined together with respective offcuts, with stain tests performed as warranted.

Attached descriptions summarise the microscopic data and inlude interpretative comments.

Summary

This suite is a composite of quartz-sericite ± chlorite and carbonate-altered acid pyroclastic facies and polymict clastic sediments.

Volcanics are broadly to strictly rhyolitic, with finer compositional detail obscured by alteration. Pyroclastics are ubiquitous, grade from agglomeratic to psammitic, and include ignimbritic types.

Intercalated sediments are psammitic to ruditic, and range in composition from acid-tuffaceous to strictly non-tuffaceous. The latter group comprises quartz-mica sandstones and pebbly sandstones with conspicuous low-grade regional metasediment-derived clastic components. The only volcanically derived component in these rocks comprises minor clasts of thoroughly altered (chloritised) basalt, and this sequence represents a distinct break in the rhyolitic volcanism.

The clastic sediments are dolomite-cemented in part, but exhibit distinctly fluvial bedding and sorting characteristics. This combination could be interpreted as reflecting marine flooding of the clastic sequence. Significantly, both the rhyolitic pyroclastic and the clastic sequences reflect widely variable depositional energy levels, with fluctuations from subaerial to fluvial and probable submarine depositional modes.

Compositional variations in this suite are closely analogous to those previously noted in suites representative of the Tyndall Group, notably that described in CMS 88/3/34.

Clastic sediments include clasts of dolomitic limestone and similar facies appear as xenoliths in the rhyolitic fragmentals. Calcareous components in sample 430638 are a composite of calc-pelitic xenoliths, secondary calcite impregnations, and interclastic cavity fillings.

D. Cowan, B. Sc.

SAMPLE NO.: **430632** (T.S. 61134)

CLASSIFICATION: **Rhyolitic Tuff**

COMPOSITION: Composite aggregates of sericite and crypto- to microcrystalline quartz in variable but overall near-equant proportions, with an irregular semi-pervasive network of contorted sericite veinlets. Disseminated quartz and sericite-pseudomorphed feldspar crystals/ crystal fragments and sericite-quartz-altered psammite- to lapilli-grade lithoclasts.

FABRIC: Flow-structured lithic fragmental with subordinate crystal fragments and a vaguely relict shardy-microtextured matrix. Moderately sheared/phyllitic with crenulated/phyllitic sericite veinlets.

ACCESSORIES: Weak but semi-pervasive secondary Fe-stainings. Disseminated leucoxenised opaques. Minor microcolloform secondary calcite veinlets.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz-altered, sericite-veined and subsequently mildly sheared rhyolitic lithic-vitric-crystal tuff with ignimbritic relict textural characteristics. This rock is fairly typical of teh upper rhyolitic sequence fragmentals.

SAMPLE NO.: **430633** (T.S. 61135)

CLASSIFICATION: **Rhyolitic "Tuff"**

COMPOSITION: Crypto- to microcrystalline quartz and sericite in varying proportions in lithoclast-replacive composite aggregates with minor interspersed interclast cavity-filling aggregates of chlorite and quartz. Sporadic clots and discontinuous microscopic films of calcite, locally transecting minor impregnations of sideritic carbonate.

FABRIC: Flow-structured, lapilli grade, moulded to locally chlorite-quartz-cemented lithoclastic with a phyllitic overprint. Variously microfelsitic (devitrified lava) to semi-selectively sericitised flattened-pumiceous clasts.

ACCESSORIES: Minor xenoliths of carbonaceous argillaceous impure chert. Leucoxenic stainings. Sporadic phenocrystal quartz and minor sericitic feldspar (albite) grains. MInor pyrite impregnations in clasts, and isolated fractured coarser subhedra in the chloritic matrix.

INTERPRETATION/ COMMENTS: This rock could be interpreted as a lapilli-grade lithic tuff or, alternately, a pumiceous flow-marginal breccia. The distinction is tenuous and academic in view of the marked alteration enhanced by shearing effects. The chlorite-quartz matrix post-dates the sericite-quartz(-pyrite) assemblage.

SAMPLE NO.: 430634 (T.S 61136)

CLASSIFICATION: **Psammitic Ash**

COMPOSITION: Framework of fine to medium sand-sized, angular to subangular, weakly/variably sericitic feldspar (albite) grains/minor clusters, subordinate quartz grains, minor embayed quartz crystals, carbonaceous pelite, impure chert and dolomitic sericitic pelite clasts, minor sericitised/carbonate-stained poorly determinate lava clasts. Matrix/cement of cloudy ankeritic dolomite and leucoxene-stained semi-sericitic white mica in varying proportions.

FABRIC: Massive to weakly leucoxenic shale-parted and weakly graded, poorly sorted fine to medium sandy clastic. Incipiently sheared.

ACCESSORIES: Clastic leucoxenic semi-opaques, muscovite flakes, traces of chromite. Ill-defined sericitised shard fragments. Thinly disseminated fine to ultrafine pyrite in matrix and impregnating altered lithoclasts. Minor dolomitic limestone clasts.

INTERPRETATION/ COMMENTS: A dolomitic argillaceous psammitic composite of primary and mildly reworked acid tuffaceous debris. A few relatively fine quartz grains are distinctly rounded, but this rock also includes primary embayed crystals. Strictly a "xeno-ash" (with non-volcanic components) and best considered as a tuffaceous acid-volcanomict sandstone.

SAMPLE NO.: 430635 (T.S. 61137)

CLASSIFICATION: **Dolomitic Pebbly Sandstone**

COMPOSITION: Framework of angular to subangular quartz, subordinate muscovite flakes, sericitic carbonaceous pelite and low-grade regional metapelite clasts, minor chloritised biotite flakes and (chloritised) basic lava clasts. Interunit of sand-matrixed conglomerate with clasts of quartz-muscovite phyllite/fine-grained schist, variably stressed vein-type quartz aggregates, sericitic carbonaceous pelite and dolopelite, minor chloritised basalt clasts. Cement of fine to microcrystalline dolomitic carbonate, minor quartz and sericite.

FABRIC: Poorly sorted (slightly medium sandy) silty fine sandstone/fine sand-supported conglomeratic. Incipiently stressed.

ACCESSORIES: Clasts of chert, argillaceous impurre chert and low-grade regional metachert. Detrital leucoxene, subordinate zircons, traces of chromite, tourmaline, minor traces of rutile, rare, rare apatite.

INTERPRETATION/ COMMENTS: Intercalation of dolomitic quartz-mica sandstone and dominantly regional metasediment-derived sand-supported conglomerate. Despite the dolomitic cement, this rock exhibits typical fluvial bedding characteristics. No tuffaceous features, in marked contrast to 430634, but including minor clasts of altered basaltic lava.

SAMPLE NO.: 430636 (T.S. 61138)

CLASSIFICATION: **Dolomitic Chloritic Quartz-Mica Sandstone**

COMPOSITION: Framework of silt- to (minor) medium sand-sized, angular to subangular quartz grains/minor composites and subordinate muscovite flakes, supplemented by chloritised biotite flakes, sericitic carbonaceous pelite/impure chert, quartz-mica phyllitic metapelite, minor metaquartzite clasts. Cement of chlorite with semi-pervasive clots of dolomitic carbonate and minor semi-sericitic white mica.

FABRIC: Similar to the sandstone unite in 430635, with thinly/evenly dispersed medium sand-sized clasts in a poorly sorted, essentially massive silty fine-grained sandstone. Similarly incipiently stressed.

ACCESSORIES: Detrital leucoxene, relatively minor zircons, tourmaline, rare chromite. Minor relics of clastic biotite. Minor dolomitic chlorite clasts (altered basic?) and dolomitic limestone clasts.

INTERPRETATION/ COMMENTS: Close affinities with the 430635 sandstone. In comparison, this rock is relatively chloritic and dolomite-deficient and carries a marked relative abundance of clastic muscovite and extensively chloritised biotite. Similarly incipiently stressed, but essentially unmetamorphosed.

SAMPLE NO.: 430637 (T.S. 61139)

CLASSIFICATION: **Tuffaceous Pebbly Sandstone**

COMPOSITION: Framework of angular to subangular carbonate-(calcite, siderite) and sericite-stained feldspar (albite-oligoclase, minor orthoclase) grains, subordinate quartz grains (including embayed/non-abraded crystals), kaolinitic and sericitic quartzose siltstone/silty shale clasts and kaolinitic to sericitic/variably sideritic carbonate-stained rhyolitic lava clasts. Matrix of silty micaceous pelite with clots and irregular spongy impregnations of sideritic carbonate.

FABRIC: Poorly sorted, massive (unbanded), gritty to agglomeratic (altered rhyolitic "megaclasts"), sandy clastic with a prominent pelitic matrix. Mildly stressed.

ACCESSORIES: Leucoxenic stainings, disseminated rhyolitic clast-hosted leucoxenised opaques. Rare clusters of pyrite (clastic in part). Minor traces of carbonaceous matter. Minor detrital zircons.

INTERPRETATION/ COMMENTS: A pelite-matrixed tuffaceous gritty to pebbly sandstone, strongly rhyolitic-tuffaceous and similar to 430634 in reflecting a composite of clastic (reworked tuffaceous in part) and pyroclastic debris. Reflects marked kaolin-sericite-siderite alteration and mild shearing effects. Pyrite is partly clastic in sericitic clasts, with minor secondary impregnations.

SAMPLE NO.: 430638 (T.S. 61140)

CLASSIFICATION: **Rhyolitic Xenotuff**

COMPOSITION: Coarse framework of sericite-quartz-altered rhyolitic lava clasts (generally felsitic, variably quartz- and sericitised/carbonate-impregnated feldspar-porphyritic), subordinate relatively sericitised "fiamme", minor xenolithic clasts of carbonaceous dolomitic pelite. Psammitic matrix of finer, similarly altered lithoclasts, quartz and similarly altered feldspar crystals/crystal fragments, minor silicified shards/shard fragments. Crypto- to microcrystalline cherty quartz cement.

FABRIC: Psammitic tuff-matrixed/chert-cemented, lapilli- to agglomerate-grade lithic fragmental. Minor moulding of rhyolitic lava clasts. Incipient shearing effects.

ACCESSORIES: Semi-pervasive clots, sporadic films and cavity fillings of cloudy carbonate (impure calcite). Conspicuous leucoxenic stainings in the matrix. Disseminated leucoxenised opaques. Rare very fine to ultrafine pyrite.

INTERPRETATION/ COMMENTS: A coarse (agglomeratic), weakly xenolithic rhyolitic fragmental dominated by lithoclasts, but strictly a lithic-vitric-crystal tuff; psammitic tuff-matrixed, chert cemented, and thoroughly sericite-quartz-carbonate altered.

SAMPLE NO.:

CLASSIFICATION:

COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

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649120

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05862

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5084	

DATE RECEIVED	RESULTS REQUIRED
28/11/88	ASAP

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2	05/12/88	1	7

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	430632/638	DC	Prep: 006,009,011,013,016						Cu,Pb,Zn,Ag/101,As/114		
	430632/638	DC							Ba,Cr,Zr,Ti/401		
	430632/638	DC							Au,AuChk/309		

RESULTS TO
R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAC-20
RET. SAMPS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALABS

A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05862	05/12/88	5084	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430632	5	90	85	<0.5	0.010	460	1	6	250
2	430633	5	15	60	<0.5	<0.008	580	2	45	200
3	430634	10	10	75	<0.5	0.010	250	3	25	150
4	430635	25	10	105	<0.5	0.032	230	2	370	130
5	430636	5	<5	115	<0.5	<0.008	330	1	500	140
6	430637	95	15	75	<0.5	<0.008	460	4	60	180
7	430638	10	20	65	<0.5	0.009	310	2	10	160
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05862	05/12/88	5084	2 OF 2

TUBE No.	SAMPLE No.	Ti
1	430632	1250
2	430633	1150
3	430634	2450
4	430635	1950
5	430636	3050
6	430637	4500
7	430638	1450
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23	DETECTION	50
24	UNITS	PPM
25	METHOD	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 6.

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CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

649130

PAGE 1 OF 1

HOLE No. MAC20

DATE DEC. 88

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	430640	25-12.5	Cu, Pb, Zn, Ag, Ba, As, U,		430672	275.7-285.7		
2	641	12.5-18.5	Zr, Ti, Y		673	285.7-295.7		
3	642	18.5-24.5			674	295.7-300.7		
4	643	24.5-34.5			675	300.7-309.9		
5	644	34.5-44.5			676	309.9-319.5		
6	645	44.5-51.0			677	319.5-329.5		
7	646	51.0-61.0	Cu, Pb, Zn, Ag, As, Ba, Au		678	329.5-339.5		
8	647	61.0-64.2			679	339.5-346.5		
9	648	64.2-74.2			680	346.5-356.5		
10	649	74.2-79.0			681	STD *	4	
11	650	79.0-89.0			682	356.5-368.4		
12	651	89.0-99.0			683	368.4-378.4		
13	652	99.0-109.0			684	378.4-388.4		
14	653	109.0-119.0			685	388.4-397.5		
15	654	119.0-129.0						
16	655	129.0-139.5						
17	656	139.5-149.5						
18	657	149.5-159.6						
19	658	159.6-168.2						
20	659	168.2-171						
21	660	171-182.5						
22	661	182.5-185.7						
23	662	STD *	4					
24	663	185.7-195.7						
25	664	195.7-205.7						
26	665	205.7-215.7						
27	666	215.7-225.7						
28	667	225.7-235.7						
29	668	235.7-245.7						
30	669	245.7-255.7						
31	670	255.7-265.7						
32	671	265.7-275.7						

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A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05883

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5099	

DATE RECEIVED	RESULTS REQUIRED
06/12/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	15/12/88	1	46

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	430640/685	CG	Prep: 016						Cu,Pb,Zn,Ag/101,As/114		
	430640/645	CG							Ba,Cr,Zr,Ti,Y/401		
	430646/685	CG							Ba/401		
	430646/685	CG							Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05883	15/12/88	5099	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	Cr
1	430640 2.5-12.5	45	25	145	<0.5	–	–	110	2	230
2	430641 12.5-18.5	50	15	110	<0.5	–	–	320	<1	210
3	430642 18.5-24.5	55	25	130	<0.5	–	–	250	2	300
4	430643 24.5-34.5	50	30	115	<0.5	–	–	70	<1	250
5	430644 34.5-44.5	55	25	120	<0.5	–	–	50	<1	220
6	430645 44.5-51	40	10	110	<0.5	–	–	85	<1	210
7	430646 51-61	25	15	85	<0.5	<0.008	–	330	<1	–
8	430647 61-64.2	25	100	110	<0.5	<0.008	–	420	<1	–
9	430648 64.2-74.2	20	95	95 [redacted]	<0.5	<0.008	–	430	<1	–
10	430649 74.2-79	15	15	105	<0.5	<0.008	–	360	<1	–
11	430650 79-89	30	20	115	<0.5	<0.008	–	430	<1	–
12	430651 89-99	30	30	115	<0.5	<0.008	–	450	<1	–
13	430652 99-109	60	20	120	<0.5	<0.008	–	480	<1	–
14	430653 109-119	50	20	110	<0.5	<0.008	–	430	2	–
15	430654 119-129	50	10	120	<0.5	<0.008	–	380	7	–
16	430655 129-139.5	25	15	95	<0.5	<0.008	–	430	2	–
17	430656 139.5-149.5	25	<5	85	<0.5	<0.008	–	340	<1	–
18	430657 149.5-159.6	35	5	105	<0.5	<0.008	–	300	2	–
19	430658 159.6-168.2	35	40	125	<0.5	<0.008	–	260	5	–
20	430659 168.2-171	35	10	90	<0.5	<0.008	–	220	2	–
21	430660 171-182.5	35 [redacted]	10	125	<0.5	<0.008	–	210	2	–
22	430661 182.5-185.74	35	10	85	<0.5	0.015	–	230	5	–
23	430662 X STD	125	185	2350	<0.5	<0.008	–	1050	25	–
24	430663 185.7-195.7	50	10	90	<0.5	<0.008	–	250	5	–
25	430664 195.7-205.7	65	15	105	<0.5	<0.008	–	340	6	–

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05883	15/12/88	5099	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	Cr
1	430665 205.7-215.7	60	30	95	<0.5	<0.008	–	340	8	–
2	430666 215.7-225.7	85	15	115	<0.5	<0.008	–	590	4	–
3	430667 225.7-235.7	60	25	145	<0.5	<0.008	–	220	<1	–
4	430668 235.7-245.7	60	10	130	<0.5	<0.008	–	1150	3	–
5	430669 245.7-255.7	60	10	130	<0.5	<0.008	–	710	<1	–
6	430670 255.7-265.7	30	15	125	<0.5	<0.008	<0.008	1000	<1	–
7	430671 265.7-275.7	55	10	90	<0.5	<0.008	–	280	7	–
8	430672 275.7-285.7	75	65	105	<0.5	0.021	–	540	29	–
9	430673 285.7-295.7	70	45	185	<0.5	0.015	–	580	21	–
10	430674 295.7-300.7	55	50	315	<0.5	0.014	–	490	22	–
11	430675 300.7-309.9	75	105	500	<0.5	0.013	–	570	48	–
12	430676 309.9-319.5	35	25	75	<0.5	<0.008	–	520	7	–
13	430677 319.5-329.5	35	20	130	<0.5	0.010	–	450	2	–
14	430678 329.5-339.5	30	35	110	<0.5	<0.008	–	500	2	–
15	430679 339.5-346.5	30	50	130	<0.5	<0.008	–	350	5	–
16	430680 346.5-356.5	55	15	100	<0.5	<0.008	–	360	6	–
17	430681 *STD	130	235	2400	<0.5	<0.008	–	1050	26	–
18	430682 356.5-363.4	55	15	135	<0.5	0.011	–	460	20	–
19	430683 363.4-378.4	65	25	125	<0.5	<0.008	–	590	7	–
20	430684 378.4-388.4	35	15	80	<0.5	<0.008	–	610	7	–
21	430685 388.4-397.5	30	10	75	<0.5	<0.008	–	490	3	–
22										
23	DETECTION	5	5	5	0.5	0.008	0.008	10	1	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	309	401	114	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05883	15/12/88	5099	3 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y						
1	430640	160	11500	30						
2	430641	130	8650	25						
3	430642	130	10450	20						
4	430643	130	8500	20						
5	430644	130	9300	25						
6	430645	130	8650	25						
7	430646	–	–	–						
8	430647	–	–	–						
9	430648	–	–	–						
10	430649	–	–	–						
11	430650	–	–	–						
12	430651	–	–	–						
13	430652	–	–	–						
14	430653	–	–	–						
15	430654	–	–	–						
16	430655	–	–	–						
1	430656	–	–	–						
18	430657	–	–	–						
19	430658	–	–	–						
20	430659	–	–	–						
21	430660	–	–	–						
22	430661	–	–	–						
23	430662	–	–	–						
24	430663	–	–	–						
25	430664	–	–	–						

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05883	15/12/88	5099	4 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y						
1	430665	–	–	–						
2	430666	–	–	–						
3	430667	–	–	–						
4	430668	–	–	–						
5	430669	–	–	–						
6	430670	–	–	–						
7	430671	–	–	–						
8	430672	–	–	–						
9	430673	–	–	–						
10	430674	–	–	–						
11	430675	–	–	–						
12	430676	–	–	–						
13	430677	–	–	–						
14	430678	–	–	–						
15	430679	–	–	–						
16	430680	–	–	–						
1	430681	–	–	–						
18	430682	–	–	–						
19	430683	–	–	–						
20	430684	–	–	–						
21	430685	–	–	–						
22										
23	DETECTION	5	50	5						
24	UNITS	PPM	PPM	PPM						
25	METHOD	401	401	401						

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 7.

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

5403750 mN
398409 mE

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HOLE NO: MAC 22
PAGE: 1 of 11
LOGGED: AMGN
DATE: 8-11-89

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				No Core - Tricone.								
4	3.8	3.8	Tertiary Basalt	Dk. brown vesicular basalt lava.					OX 4			
6		93%										
8		7.1										
		50%										
10		10.3		10.9 grey sparsely vesicular basalt lava with abundant pyroxene phenocrysts.								
12												
14				14.0 dark brown vesicular basalt lava.					OX 4.			
16				16.1 grey sparsely vesicular pyroxene + feldspar? phyric basalt lava.								
18												
20				19.4 gradational Red-brown vesicular lava.					OX 3-4.			
22												
24				23.4 grey-green sparsely vesicular (carbonate or zeolite filled) feldspar-pyroxene phyric lava.								
26												
28				28.8 gradational Red-brown vesicular lava.					OX 3-4			
30												
32				33.3 brecciated interval with black veins (coal?) matrix. 34.3								
34												
36												
38												
40												
42												

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

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PROJECT : Mackinbah

PROSPECT : Middleyes Road.

HOLE NO : MRZ12

PAGE : 2 of 11

LOGGED : AMcN

DATE : 8-11-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			Tertiary basalt.	red-brown Vesicular lava.								
46				44.9 grey poorly vesicular porphyritic lava								
48				48.1 Gradational over 10 cm. dark brown Vesicular lava.								
50				50.4 grey-green poorly vesicular basalt lava.								
52				52.6 brown vesicular lava.								
54				54.8 massive grey lava 55.9 brecciated brown vesicular lava with a black vitric ?Coal matrix.								
56				56.2 grey lava sparsely vesicular. feldspar-phyric with Possible devitrification textures.								
58				58.0 grey-brown vesicular lava. 60. sparsely vesicular interval. 69.4								
60												
62												
64												
66												
68												
70												
72												
74				75.2 10 cm sediment (black vitric coal) interbed. 75.9								
76				76.9 Massive devitrified interval. Minor black sediment intercalations.								
78				80.0 Massive grey lava. 81.0								
80				82.6 Conchoidal fracturing black vitric sediment. 83.3 Vesicular lava mixed with sediments Massive lava.								

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh

PROSPECT: Middlemore rd.

HOLE NO: Mac 22

PAGE: 3 of 11

LOGGED: AMEN

DATE: 8-11-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
56			Tertiary Basalt.									
58												
60				59.6 red-brown vesicular lava with intercalated sediments.								
62												
64												
66												
68				66.9 brecciated with a black sediment matrix. Hyaloclastite.								
70				68.2 Massive grey lava.								
72				70.9 grey-brown vesicular lava.								
74												
76												
78												
80												
82												
84												
86												
88												
90												
92				91.1								
94												
96												
98												
100												
102			102.									
104	70%		Tertiary Sediments.	dark brown to grey coarse sandstone. poorly consolidated. dominantly quartzite clasts with clasts of underlying conglomerate.								
104.5			104.5									
106	30%		Olson Conglomerate (lower-upper unit)	light green fine grained siliceous conglomerate. with sub-rounded clasts of vein quartz, quartzite, ferruginous sandstone, and white to red chert.	Se (1-2)	Q (1-2)						

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : Mackintosh

PROSPECT: Middleton Road

HOLE NO: MR 22

PAGE: 2 of 11

LOGGED: [illegible]

DATE: 9-11-93

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
124		10% 124.5	Oxen Conglomerate		Se (1-2)	Q (1-2)						
		124.5				Q+Co (1)						
		50% 125.5		green fine grained Siliceous Conglomerate. Common Dam-hole								
126												
128												
				128.7				128.7 fault = 45° to CA.				
				dark Pink Sandstone, Siliceous, with scattered clasts, to 0.5cm diameter.				fault contact.				
130					Sharp Contact.							
				130.9	Se (1-2)	Q (1)		130.2 fault zone = flag				
				green, siliceous, fine Pebble Conglomerate.				130.5 fault = 5° to CA.	Lch 3.			
132				132.8								
				light green-grey medium to fine grained Siliceous Sandstone. Scattered subangular lithic fragments to 1.5cm diameter. Becomes coarser into red fine pebble conglomerate. By 136.9 fines abruptly to medium grained red-pink siliceous sandstone.				134.1 fault = 25° to CA.				
134								fault = 15° to CA.				
136			136.3 Cambrian Mica Sandstone	Mottled red-grey medium Mica Sandstone + scattered quartzite clasts ~0.4cm dia.	Hmt (2) - pat.							
138	140.2	50%		Some minor phyllitic grey-red shale with contorted cleavage.								
	140.7			140.7 coarsen to lithic rich Grit.					140.7			
140		60% 140.0							Lch 3.			
									150			
142				inter-bedded medium to coarse grained Mica Sandstone and lithic rich Grit composed of fragments of shale, quartzite, Hematitic cherts grey chert and some possible Sericitic Hornfels.								
144												
146						Co (1-2), Q (1)						
148					Hmt (1) Hmt (2)						157.6m Core in - Tertiary Basalt and Glassy hornfels.	
150					150.3 Hmt (2) Se (1) pat.							
152					152.5							
154												
156												
158						Co (1-2)		157.4 bedding = 70° to CA. 158.1 bedding = 70° to CA. 159.0 bedding = 70° to CA. 159.5 bedding = 70° to CA. 159.8 bedding = 70° to CA.				
160												
162												
164												
166				166.9								
168				168.4 laminated grey-black shale.			167.6 Hy pat (1)					

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

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PROJECT : Mackintosh

PROSPECT: Middlesex Rd.

HOLE NO : Mre 4

PAGE : 5 of 11

LOGGED : JMCN

DATE : 10-11-91

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170			Mica Sandstone and Grit				169.85 Py pat (1)					
172								172.0 fault - 30-35°				
174				173.9 load casts ⇒ Uphole facing.				172.2 micro faults at 20° to ca.				
176				174.7 grey-black shale with light green quartz-feldspar-phyric fine lapilli volcaniclastic.		174.7 CO trace (1-2)						
178			fine lapilli Volcaniclastic	light green-grey fine lapilli volcaniclastic with irregular shale interbeds and shale clasts. Quartz-feldspar phyric with sericitic patches.		(O (1-2)						
180				179.9 thin laminated grey shale.				180.4 bedding = 60° to ca.				
182				182 sericite patches some feldspar-phyric more common + larger.				183.3 fault = 80° to ca.			182.1 HQ / NQ	
184				183 pyritic clasts appear.				- Contact = 55° to ca.				
186			Polymict Coarse lapilli volcaniclastic	Medium to Coarse green/brown volcaniclastic with a fine grained sericitic quartz-feldspar-phyric matrix. Clast types: Pink-Cream Dacitic lava; green sericitic "gamma"; grey chert; green andesite, feldspar-phyric andesitic lava; Medium Grained green volcaniclastic sandstone; quartz chert clasts. Clasts sub angular and upto 6 cm diameter. at 192.1 green-white carbonate rich fragment to 5cm diameter appear		(O (1-2)		187.0 Py pat (1)	187.0 fault 25° to ca; 187.6 fault zone - brecciated and sheared.				
188						188.0 CO+CO (2); 188.6						
190												
192												
194												
196												
198												
200						(O (1-2)						
202												
204							CO4 div 1% (1)					
206								205.3 fault: 6° to ca				
208				208.1 Acidic lava clasts (Mamie to Yow-banded) to 10 cm diameter.							208 u Petrology 430701	
210												

649172

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649142

PROJECT : Mackintosh

PROSPECT : Middlemiss Rd.

HOLE NO : MMD 4

PAGE : 6 of

LOGGED : HMEN

DATE : 4-11-87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			Polymict Coarse lapilli volcaniclastic									
214			213.V	Conglomerate mixed contact over 20cm.		Co+Pg(L)		bedding = 65° to CA.				
			214.7 black shale	black shale with pyrite bands.								
216			Polymict fine lapilli volcaniclastic	green-grey sericitic cutaxitic lapilli volcaniclastic with clasts of shale, cherty lava and spong chert. fragments common down-hole. Matrix becomes shale rich.				bedding = 75° to CA.				
218								217.4 fault = 20° to CA. 218.1 bedding = 30° to CA.				
220												
222						Q+Co(L) Py(L)						
224			225.5 Shale and Sandstone	interbedded black shale and minor sandstone with volcanic clasts in devitrified lava.		Co+Pg(L)						
226												
228			228.5 Polymict medium lapilli volcaniclastic	green-grey sericitic cutaxitic volcaniclastic with a grey shale to fine Mica sandstone matrix, with minor ash volcaniclastic interbeds. 231 appearance of chert (lava fragments).		Co+Pg(1-2) Co+Pa(2) Co(2)						
230						230 Co+Pg+tr ed.Cp(2)		fault = 55° to CA.				
232				highly sericitic cutaxitic volcaniclastic with few lithic clasts.		237 Co+Pg(2)						
234						Co+tr Sp(3)					238.1 Petrology 420764	
236			239.8 Mica Sandstone and Shale	grey to black fine Mica sandstone with minor shale interbeds and rafts. Minor volcanogenic clasts the lenticular "fiamme" and pink-brown ash volcaniclastic.		Q+Co(2)		240.5° fault = 65° to CA. low Pg; outside 242.2 bedding = 45° to CA.				
238								247.0 bedding = 65° to CA.				
240			247.5 Eutaxitic volcaniclastic	Pink-green sericitic cutaxitic volcaniclastic with a fine maroon black-pink ash volcaniclastic matrix				247.5 fault = 20° to CA.				
242							250.7 tr Sp(2). 251.4 tr Sp(2).					

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649143

142

PROJECT : Mackintosh

PROSPECT: Middlesex Rd.

HOLE NO: Mac 12

PAGE: 7 of 11

LOGGED: ARKN.

DATE:

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				262.8 / 263.1 green-brown andesitic volcaniclastic interbed.		Co (1)		253.1 bedding = 55° to CA				
							256 Cp-Po-Aspy-(2-3) in mtx.					
						259.2 Co + Cl + Fe-rich sp. (2)		259.2 bedding = 50° to CA.				
						260.0 Co + Cl + Fe-rich sp. (1) (3)		260.1 fault = 40° to CA.				
								261.2 fault = 10° to CA.				
			264.1				264.0 to 264.1 Mj Jab (4)	262.6 10° to CA. / 264.1 Fault zone				
			Mica greywacke	grey mica sandstone with minor feldspar crystals and granitic lithic clasts, with volcaniclastic and shale fragments, generally < 1cm diameter. Minor shale interbeds.				267.2 fault = 45° to CA.				
								273.5 bedding = 65° to CA.				
			277.3									
			Felsitic lapilli volcaniclastic	green to pink sericitic felsitic volcaniclastic i.e. green pink andesitic volcaniclastic breccia and minor a.v. interbeds to 10cm thick. Also shale lithics to 20cm thick. Dacitic lava and carbonate rock clasts common. clasts < 1cm dia.				278.3 fault = 60° to CA. / 278 fault.			279.6 lost water.	
								279.9 fault = 35° to CA.			280.3 Petroleum odour	
				291.3 Shale interbed.				289.6 fault = 20° to CA. / 291.2 fault.				
			293.1 Mica Greywacke	grey medium to fine grained sandstone.				292.1 fault = 50° to CA.				
				Conformable Contact.								

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649144

PROJECT : Mackintosh
PROSPECT: Middlesex rd.

HOLE NO: Mac 12
PAGE: 8 of 11
LOGGED: A MEN
DATE: 4-12-88.

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296			Polymict lapilli volcaniclastic	green fine lapilli volcaniclastic with lenticular cuspate fiamme, shale and ash volcaniclastic clasts. minor ash volcaniclastic interbeds. massive lava clasts below 295.5m. fiamme are quartz-feldspar-phyric. grey fine grained matrix		Qz+Co+py (2)						
298												
300				300.2 10 cm dia. clast of shale with fine lapilli volcaniclastic interbeds.			300.1 tr. py. diss.	300.1 bedding = 65° to CA.			299.8 Petrology 650769	
302												
304								302.6 bedding = 55° to CA.				
				305.5 flow banded dacite lava clast > 10 cm dia. lithics sub angular.		Co (1)						
306												
308												
310												
312												
314				314.6 20 cm diameter dacite clast. lithics general < 2 cm dia.								
316												
318				318 40 cm Shale/lapilli volcanic interbed.		Co (1)		318.6 bedding = 50° to CA.				
320												
322												
324												
326								326.6 fault - fracture zone			326.4 Cave in.	
328				328.3 feldspar-phyric green andesitic lava clast.				328 fault = 55° to CA.				
330												
332												
334												
336												

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649145

PROJECT : Mackintosh

PROSPECT: Middlesex N.E.

HOLE NO: MAC-22
PAGE: 9 of 11
LOGGED: AMCN
DATE:

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
339			Polymict lapilli volcaniclastic	light green-brown fine to medium lapilli volcaniclastic (quartz-feldspar-phyric) c black shale; chert, basaltic lava clasts and sometimes fiamme.		Co(1)		-341.9 bedding = 55° to ca.				
342												
344												
346												
348								-348.6 fault				
			348.6 Sandstone and Grit	black-grey fine sandstone, micaceous, and shale with minor light grey fine lapilli interbeds and sediment fiamme and dacitic lava clasts. grit beds appear at 350.7 m. increasing volcanogenic content down hole		-350.6 Co+Py(2)		348.6 Contact = 75° to ca.				
352								Contact = 70° to ca.				
354			352.9 Polymict lapilli volcaniclastic	Abrupt contact to fine lapilli volcaniclastic with open sericitic fiamme and minor dacitic lava clasts. Common fine biotite. -354.4 abrupt black shale clasts.		Co(2) -354.7 Qtz+Co+ch tr py (3-4) -354.9 Co+Cl + ch+py. (1-2)		-354.4 fault = brecciated. fault = 75° to ca. -355.4 fault = 55° to ca. -356.2 fault = 50° to ca.				
356												
358						Qtz+Co+Cl (5) Qtz+Co+Cl in 10cm flush		-358.6 fault = 55° to ca. -359.8 fault = 65° to ca.				
360												
362								-362 fault = 70° to ca.				
364				lithic fragments to 1cm dia. of greyish, black, dacitic lava. minor ash volcaniclastic interbeds <1cm thick.				-364.2 bedding = 75° to ca.				
366												
368				-367.2 Dramatic coarsening. clasts to 3cm dia. dark green feldspar-phyric andesitic lava clasts abundant. lith. fragments to 12cm dia. c minor ash volcaniclastic interbeds.		Co+Qtz (1)		-366.4 bedding = 75° to ca. -366.6 fault = 70° to ca.				
370				-370.0 1cm thick ash volcaniclastic interbed			-369.6 pyroclastics in ash interbed.	-369.4 bedding = 70° to ca.				
372				-372.2 abrupt fining. lithics generally <1cm dia.			-373.3 Py (3) disb. -375.1					
374				- grey ash volcaniclastic matrix, feldspar-phyric; clastic volcaniclastic - fine lapilli dacitic lava clasts. -377.1 lithics coarser and more common dominated by black shale and dacitic lava.								
376												
378												

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EXPLORATION DIVISION

DIAMOND DRILL LOG

649146

PROJECT : Mackintosh
PROSPECT: Middlesex Rd.

HOLE NO: Mac 22
PAGE: 10 of 11
LOGGED: JMcN
DATE: 12-11-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
380			Polymict with Volcaniclastic	as above.		Co + Cp (1-2)						
382											381.50 Petrology 430767	
384												
386												
388												
390												
392							392.6 Py (1-3) diss.					
394												
396			396.2			395.7 Qtz+Co+Py+Gn vn (0.3m thick)		Alteration contact - fault 35° to CA.				
398			Rhyolite lava.	Mottled pink-green lava with rounded Schistoliths structures. generally weakly devitrified with obvious leucoxene grains. aphyric. in part has a breccia texture & massive rounded lava surrounded by schistose matrix - think this is a devitrification effect.	S1 (2-3)	Co (2)						
400						Co (1-2) Q (1-2)						
402				402. Silica-Carbonate filled veinlets.				401.6 fault 45° to CA.				
404						404.3 Q + Ka Sp. (1)						
406						Q + Co (2)					406.4 Petrology 430768	
408												
410												
412												
414												
416												
418												
420												

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649147

PROJECT : Machintosh

PROSPECT : Middlesex Ld.

HOLE NO : MC 22

PAGE : 11 of 11

LOGGED : JMcN

DATE : 12-11-98

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
442			Rhyolitic lava.									
444			424.3 EOH.									
446												

ATTACHMENT - MAC22

Sample No.	Depth	Description
430762	141.9m	Owen Conglomerate
430763	208.4m	Coarse lapilli volcaniclastic
430764	238.10m	Sericitic volcaniclastic
430765	264.50m	Mica Sandstone
430766	286.30m	Sericitic lapilli volcaniclastic
430767	381.50m	Sericitic lapilli volcaniclastic
430768	406.4m	Dacitic lava
430769	299.8m	Medium lapilli volcaniclastic

649143

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

CMS

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

7th February, 1989

REPORT CMS 88/12/26

YOUR REFERENCE:	Letter dated 19.12.1988
DATE RECEIVED:	22nd December, 1988
SAMPLE NOS.:	430762 - 430769
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/12/26

A suite of eight drill core samples from DDH/MAC-20 was received for routine petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with respective offcuts, in oblique incident light, with stain tests performed as warranted.

Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite is essentially similar to that described in CMS 88/12/9 (DDH/MAC-20 drill cores), with a composite of acid, dominantly fragmental volcanics and psammopelitic sediments.

The acid pyroclastics include pelite-matrixed and possible limestone (or dolomite)-cemented types with indications of coarse ash flow into the sediments. In this context, there is a certain level of contrast with the previous suite.

The intercalated psammitic sediments are similarly partly regional metasediment-derived. These, and notably the Owen Conglomerate, include clasts of acid volcanic in addition to altered basic volcanic.

Sample 430768 (DDH/MAC-20, 406.4 m) represents a felsic intermediate (andesitic/trend leuco-andesitic) lava, contrasting with, but clearly intercalated with, the acid volcanics.

D. Cowan, B. Sc.

150

SAMPLE NO.: 430762 (T.S. 61185)

CLASSIFICATION: **Ferruginised Protoquartzite**

COMPOSITION: Framework of fine to medium sand-sized, angular to subangular/ minor subround quartz grains/minor vein- and metaquartzite-type composites, subordinate fine sand- to (minor) grit-sized clasts of chert and recrystallised (low-grade regional meta-) chert. Relatively minor clasts of quartz-mica phyllite, sericitic/ silicified rhyolitic lava and simlarly altered felsite. Extensively ferruginised argillaceous (sericitic) cement supplemented by fine to microcrystalline intergranular and a little overgrowth quartz.

FABRIC: Poorly/trend bimodally sorted, weakly bedded (semi-dimensionally orientated clasts, unbanded), sandy clastic. Incipiently stressed.

ACCESSORIES: Minor silicified basaltic lava clasts, detrital muscovite flakes, sericitic pelite clasts. Traces of detrital leucoxene, rare tourmaline and chromite, chloritic sericitic/partly degraded feldspar grains.

INTERPRETATION/ COMMENTS: A poorly sorted quartzose sandstone, compositionally proto-quartzitic, but verging on orthoquartzitic. Sericite-quartz-cemented, with the clay aggregates extensively ferruginised. Typical fluvial bedding characteristics. Only very incipiently stressed. Includes rare, weakly abraded volcanic quartz crystals supplementing rhyolitic clasts.

SAMPLE NO.: 430763 (T.S. 61186)

CLASSIFICATION: **Rhyolitic Xenotuff**

COMPOSITION: Framework of sericite-quartz-altered and variably sideritic carbonate-impregnated rhyolitic lava clasts, subordinate relatively carbonated and sericitic pumice clasts, sporadic xenolithic clasts of chert and argillaceous impure chalcedony-nodular chert. Poorly defined marginally replacive cement of sideritic carbonate aggregates with disseminated quartz and sericitised feldspar crystals/crystal fragments.

FABRIC: Poorly sorted/crudely flow-structured psammitic to agglomerate grde lithoclastic, with a carbonate-cemented sandy matrix. Weakly sheared/phyllitic.

ACCESSORIES: Leucoxenised opaques, minor carbonaceous pelite clasts, traces of ultrafine pyrite in sericite aggregates.

INTERPRETATION/ COMMENTS: A thoroughly altered psammitic ash-matrixed rhyolitic agglomeratic tuff with xenolithic intraclasts of variably carbonaceous chert and pelite. Finer textural detail obscured by alteration, particularly the corrosive/replacive carbonate cement, and this rock is poorly diagnostic as to whether a primarily or slumped/ mildly reworked tuffaceous sediment.

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SAMPLE NO.: 430764 (T.S. 61187)

CLASSIFICATION: **Altered Felsite**

COMPOSITION: Aggregates of variably sericitic fine to microcrystalline quartz with interspersed zones of relatively massive sericite. Thinly disseminated calcite-sericite-pseudomorphed feldspar- and minor corroded quartz phenocrysts. Sporadic irregular spongy films of cloudy sideritic carbonate.

FABRIC: Weakly porphyritic felsitic (devitrified) with a contorted flow- and compositional banding. High-angle discordantly sheared/phyllitic, with minor boudinaging of the primary banding.

ACCESSORIES: Leucoxenised opaques and leucoxenic stainings. Minor traces of ultrafine pyrite.

INTERPRETATION/COMMENTS: A quartz-sericite-carbonate-altered "dacitic" pitchstone with a contorted and mildly refolded and boudinaged flow-banding, imparting a mesoscopic "pseudo-fragmental" character. Sideritic carbonate is locally calcite-replacive, suggesting the 430763 may have been primarily calcite-cemented.

SAMPLE NO.: 430765 (T.S. 61188)

CLASSIFICATION: **Dolomitic Quartz-Mica Sandstone**

COMPOSITION: Loose framework (50 %) of silt- to medium sand-sized, angular to subangular quartz grains, conspicuous muscovite flakes, subordinate vein- and metamorphic-type quartz composites and clasts of carbonaceous pelite, chert, low-grade regional metapelite, metaquartzite and metachert. Minor clasts of dolomite. Semi-sericitic white mica cement with varying proportions of fine to microcrystalline dolomitic carbonate and minor composite "vugs" of sericite and carbonate. Semi-pervasive carbonaceous matter.

FABRIC: Poorly sorted dolomitic pelite-matrixed, sandy clastic, with an incipient slaty cleavage with a semi-mylonitic overprint. Sporadic carbonaceous microfractures.

ACCESSORIES: Detrital leucoxene, minor zircons, chromite and rare tourmaline. Rare sericitic/silicified felsite clasts. Traces of very fine to ultrafine syngenetic pyrite, and rare blebs (350 um) of yellow-brown sphalerite.

INTERPRETATION/COMMENTS: A dolomitic pelite-matrixed quartzose-micaceous sandstone, carbonaceous and weakly pyritic, with rare blebs of apparently syngenetic sphalerite. The minor vug-like masses of sericite and carbonate are strictly boudinaged veinlets predating the post-cleavage heterogeneous reshearing effects. Clastic components essentially similar to those in 430762 (Owen Conglomerate), but with a marked relative abundance of muscovite.

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SAMPLE NO.: 430766 (T.S. 61189) 3.

CLASSIFICATION: **Altered Felsite**

COMPOSITION: Sericite and fine to microcrystalline quartz in varying proportions. Disseminated to locally conspicuous variably corroded quartz phenocrysts and microphenocrysts; relatively minor sideritic carbonate-pseudomorphed feldspar phenocrysts. Thinly disseminated quartz microspherulites. Disseminated spongy clusters and discrete grains of pyrite.

FABRIC: Essentially similar to 430764; relatively porphyritic and flow-brecciated in comparison. Locally vaguely relict eutaxite-microstructured.

ACCESSORIES: Leucoxenised opaques and leucoxenic stainings.

INTERPRETATION/ COMMENTS: Close affinities with 430764, but rhyolitic and flow-brecciated, with some evidence of a welded eutaxitic mode of origin. Similarly but relatively weakly medium- to high-angle discordantly sheared, with incipiently sericite pressure-shadowed pyrite disseminations.

SAMPLE NO.: 430767 (T.S. 61190)

CLASSIFICATION: **Dacitic Tuff**

COMPOSITION: Sericite with varying proportions of crypto- to locally micro-crystalline quartz. Disseminated partly composite clots of calcite and sideritic carbonate. Disseminated variably sericitic carbonate pseudomorphs after feldspar crystals/crystal fragments.

FABRIC: Flow-structured psammite to lapilli grade lithoclastic, with conspicuous sericitised fiamme. Weakly sheared/phyllitic.

ACCESSORIES: Minor bleached carbonaceous pelitic xenoliths. Thinly disseminated fine to ultrafine pyrite. Leucoxenised opaques and leucoxenic stainings. Thinly disseminated quartz crystal fragments.

INTERPRETATION/ COMMENTS: A thoroughly sericite-quartz-carbonate-altered, weakly pyritised and weakly sheared "lithic" tuff with dacitic relict compositional characteristics. Textural features consistent with a welded and flow-brecciated vitric-crystal tuff.

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SAMPLE NO.: 430768 (T.S. 61191) 649154 4.

CLASSIFICATION: **Amygdaloidal Felsite**

COMPOSITION: Disseminated sericite-pseudomorphed feldspar- and minor leucoxenic sideritic carbonate-stained, sericite-quartz-pseudomorphed ferromagnesian phenocrysts; disseminated quartz-sericite-carbonate amygdales in an altered groundmass of sericite, sericitic felsitic-anhedral and clear micro-amygdaloidal quartz with sericitised feldspar microlites and carbonate-pseudomorphed ?pyroxene granules.

FABRIC: Porphyritic, flow-structured, amygdaloidal, with a felsitic/ "snowflake"-microtextured groundmass. Weakly stressed.

ACCESSORIES: Leucoxenised opaques. Minor traces of ultrafine pyrite in sericite and carbonate aggregates. Minor discontinuous calcite veinlets with discontinuous sideritic selvedges.

INTERPRETATION/ COMMENTS: A devitrified and sericite-quartz-carbonate-altered felsic intermediate lava interpreted as andesitic/trend leuco-andesitic on relict compositional and textural grounds, in contrast to the associated acid (dacitic to rhyolitic) volcanics.

SAMPLE NO.: 430769 (T.s. 61192)

CLASSIFICATION: **Rhyolitic Breccia**

COMPOSITION: Loose framework of sericitised to semi-selectively quartz-sericite-altered and variably cloudy microcrystalline sideritic carbonate-impregnated felsic lava clasts, subordinate sericitised feldspar and minor quartz crystals/crystal fragments. Matrix of silty micaceous cherty argillite "grading" into impure chert and with semi-pervasive variably sideritised dolomitic carbonate rhombs.

FABRIC: Poorly sorted psammitic to lapilli grade lithic fragmental. Slumped pelitic matrix; locally vaguely sericitised-vitroclastic (shardy). Incipiently sheared.

ACCESSORIES: Clastic and lithoclast-hosted leucoxenised opaques. Rare zircons. Thinly disseminated to locally conspicuous fine pyrite impregnations in altered lava clasts. Sporadic clots and discontinuous films of calcite.

INTERPRETATION/ COMMENTS: Essentially a slump breccia composite of rhyolitic, tuffaceous, and dolomitic cherty argillitic/impure cherty, sedimentary components. General features consistent with an ash fall "intrusion" into the pelitic sediment. The matrix includes silt- to fine sand-sized clasts of carbonaceous shale.

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05909

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5325	

DATE RECEIVED	RESULTS REQUIRED
20/12/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	13/01/89	1	8

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
...ER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE		REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	430762/769	SC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag/101,As/114			
	430762/769	SC							Ba,Cr,Zr,Ti/401			
	430762/769	SC							Au,AuChk/309			

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAK-22
PET.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
...hole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
...it core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
...p	[illegible]	HF mixture	A6	ignition	IG	titration	TTN
...ter	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
...tal	[illegible]	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

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649150

ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05909	13/01/89	5325	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430762	5	10	30	<0.5	<0.008	70	1	290	190
2	430763	10	5	30	<0.5	<0.008	450	3	35	290
3	430764	35	10	30	<0.5	<0.008	510	3	25	240
4	430765	15	15	505	<0.5	<0.008	510	20	390	150
5	430766	10	5	30	<0.5	<0.008	880	3	<5	240
6	430767	10	<5	25	<0.5	<0.008	610	2	25	280
7	430768	5	115	75	<0.5	<0.008	1350	1	<5	258
8	430769	10	20	45	<0.5	<0.008	870	4	30	280
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No	PAGE
	23.3.08.05909	13/01/89	5325	2 OF 2

TUBE No.	SAMPLE No.	Ti
1	430762	1450
2	430763	1100
3	430764	1250
4	430765	2550
5	430766	650
6	430767	1500
7	430768	1350
8	430769	1250
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23	DETECTION	50
24	UNITS	PPM
25	METHOD	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 8.

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649159 MAC 22

PAGE OF

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No.

DATE

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	430690	144.2-156.3						
2	691	156.3-166.2						
3	692	166.2-173.2						
4	693	Standard	* 4					
5	694	173.2-175.4	CUT *					
6	695	175.4-185.9						
7	696	185.9-195.9						
8	697	195.9-209.9						
9	698	209.9-213.7						
10	699	213.7-223.3						
11	430700	223.3-233.3						
12	701	233.3-243.3						
13	702	243.3-253.3						
14	703	253.3-259.4						
15	704	259.4-269.4						
16	705	269.4-277.3						
17	706	277.3-287.3						
18	707	287.3-297.3						
19	708	297.3-307.3						
20	709	307.3-317.3						
21	430710	317.3-327.3						
22	711	327.3-337.3						
23	712	337.3-348.6						
24	713	348.6-353.3						
25	714	353.3-363.3						
26	715	363.3-373.3						
27	716	373.3-383.3						
28	717	383.3-396.2						
29	718	396.2-406.3						
30	719	406.3-416.3						
31	430720	416.3-424.3						

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560

FAX: 004 31 8870

ANALYTICAL REPORT No. 23.3.08.05935

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5352	

DATE RECEIVED	RESULTS REQUIRED
10/01/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	25/01/89	1	31

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	430690/720	CG	Prep: 010,011,012,013,016						Cu,Pb,Zn,Ag/101,As/114		
	430690/720	CG							Ba,Cr,Zr,Ti/401,Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAR-22
GRINDS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05935	25/01/89	5352	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430690	65	25	135	<0.5	<0.008	220	8	660	170
2	430691	55	25	110	<0.5	<0.008	270	4	650	160
3	430692	135	50	115	<0.5	<0.008	440	37	210	200
4	430693 *SD*	125	210	2400	<0.5	<0.008	1150	21	900	85
5	430694	20	35	300	<0.5	<0.008	260	16	45	190
6	430695	40	40	230	<0.5	<0.008	300	11	35	160
7	430696	50	115	300	<0.5	<0.008	330	12	20	260
8	430697	40	40	95	<0.5	<0.008	370	7	6	260
9	430698	75	45	95	<0.5	<0.008	390	9	<5	270
10	430699	50	85	125	<0.5	<0.008	430	15	20	300
11	430700	50	35	80	<0.5	<0.008	500	15	20	310
12	430701	50	45	85	0.5	<0.008	540	10	35	300
13	430702	60	40	145	0.5	<0.008	630	11	15	290
14	430703	50	50	90	<0.5	<0.008	790	13	25	300
15	430704	45	75	205	<0.5	<0.008	690	40	190	250
16	430705	55	700	1000	<0.5	<0.008	540	41	340	160
17	430706	45	40	80	<0.5	<0.008	890	7	<5	290
18	430707	35	105	160	<0.5	<0.008	1050	9	35	300
19	430708	10	80	165	<0.5	<0.008	830	8	5	270
20	430709	<5	30	60	<0.5	<0.008	770	4	<5	270
21	430710	10	30	75	<0.5	<0.008	650	4	<5	270
22	430711	5	40	75	<0.5	<0.008	650	3	8	300
23	430712	5	35	95	<0.5	<0.008	640	3	<5	260
24	430713	25	70	115	<0.5	<0.008	520	18	70	260
25	430714	10	40	75	<0.5	<0.008	530	10	20	300

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649162

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05935	25/01/89	5352	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430715	10	80	440	<0.5	<0.008	580	7	<5	310
2	430716	5	30	40	<0.5	<0.008	580	6	<5	320
3	430717	20	45	90	<0.5	<0.008	690	11	15	320
4	430718	30	95	200	<0.5	<0.008	1000	8	<5	310
5	430719	15	60	85	<0.5	<0.008	1200	7	10	350
6	430720	15	40	60	<0.5	<0.008	730	4	<5	270
7										
8										
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12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05935	25/01/89	5352	3 OF 4

TUBE No.	SAMPLE No.	Ti	Zr/Ti							
1	430690	3100	0.055							
2	430691	3300	0.048							
3	430692	3800	0.053							
4	430693	2450	0.035	*	STD 4					
5	430694	2300	0.083							
6	430695	3650	0.044							
7	430696	1950	0.133							
8	430697	1450	0.179							
9	430698	1300	0.208							
10	430699	1550	0.193							
11	430700	1300	0.238							
12	430701	1350	0.222							
13	430702	1100	0.264							
14	430703	1100	0.273							
15	430704	2100	0.119							
16	430705	2550	0.063							
17	430706	800	0.363							
18	430707	1300	0.231							
19	430708	1400	0.193							
20	430709	1150	0.235							
21	430710	1200	0.225							
22	430711	1250	0.24							
23	430712	1150	0.226							
24	430713	1950	0.133							
25	430714	1450	0.207							

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05935	25/01/89	5352	4 OF 4

TUBE No.	SAMPLE No.	Ti	Zr/Ti							
1	430715	1650	0.188							
2	430716	1700	0.188							
3	430717	1700	0.188							
4	430718	1750	0.177							
5	430719	1900	0.184							
6	430720	1550	0.174							
7										
8										
9										
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11										
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13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50								
24	UNITS	PPM								
25	METHOD	401								

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 9.

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ABERFOYLE RESOURCES

EXPLORATION DIVISION

Technical Report

MACKINTOSH EL

DHEM SURVEYS

MAC 16 & MAC 20

Prepared by:

J Silic
Chief Geophysicist

Distribution

1. Aberfoyle Resources, Hawthorn (1)
2. Aberfoyle Resources, Burnie (1)

Issued by:

J Silic
Chief Geophysicist

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MAC 16 RESULTS

CONCLUSIONS

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Fig 1: MAC 16 DHEM Loop Locations

Fig 2: MAC 20 - EM37 Borehole Survey Loop 1

Fig 3: MAC 20 - EM37 Borehole Survey Loop 2

Fig 4: MAC 16 - SIROTEM Survey Loop 2

Fig 5: MAC 16 - SIROTEM Survey Loop 2

Fig 6: MAC 16 - SIROTEM Survey Loop 1

Fig 7: MAC 16 - SIROTEM Survey Loop 1

INTRODUCTION

In keeping with Aberfoyle's exploration strategy, that every drillhole be logged with Down Hole Electromagnetic (DHEM) techniques, MAC 16 and MAC 20 were logged.

For both holes loops were laid out so that the loop's primary magnetic field would couple with any vertical and horizontally dipping targets that may exist within 150 meters from the hole.

Loop locations for MAC 16 are shown on Fig 1, while the loop coordinates for the MAC 20 hole are given on the legend accompanying the profile plots.

Mac 16 was logged by McSkimmins Geophysics using the SIROTEM downhole unit, while the MAC 20 hole was logged by a Geoterrex crew using an EM-37 unit.

MAC 20 RESULTS (Figures 2 & 3)

No off-hole conductors are evident in the data.

The slightly conductive tertiary basalts, however, are evident, with elevated readings at the top of the hole indicating their presence.

MAC 16 RESULTS (Figures 4 - 7)

The MAC 16 data is obviously polluted by powerline noise, particularly evident in the uphole negatives in the loop 2 data.

Nevertheless, no obvious effects from an off-hole conductor are present in the data.

CONCLUSIONS

DHEM surveys in MAC 20 and MAC 16 did not detect any responses, that could be attributed to an anomalously conductive source within 150 meters from the hole.

649169

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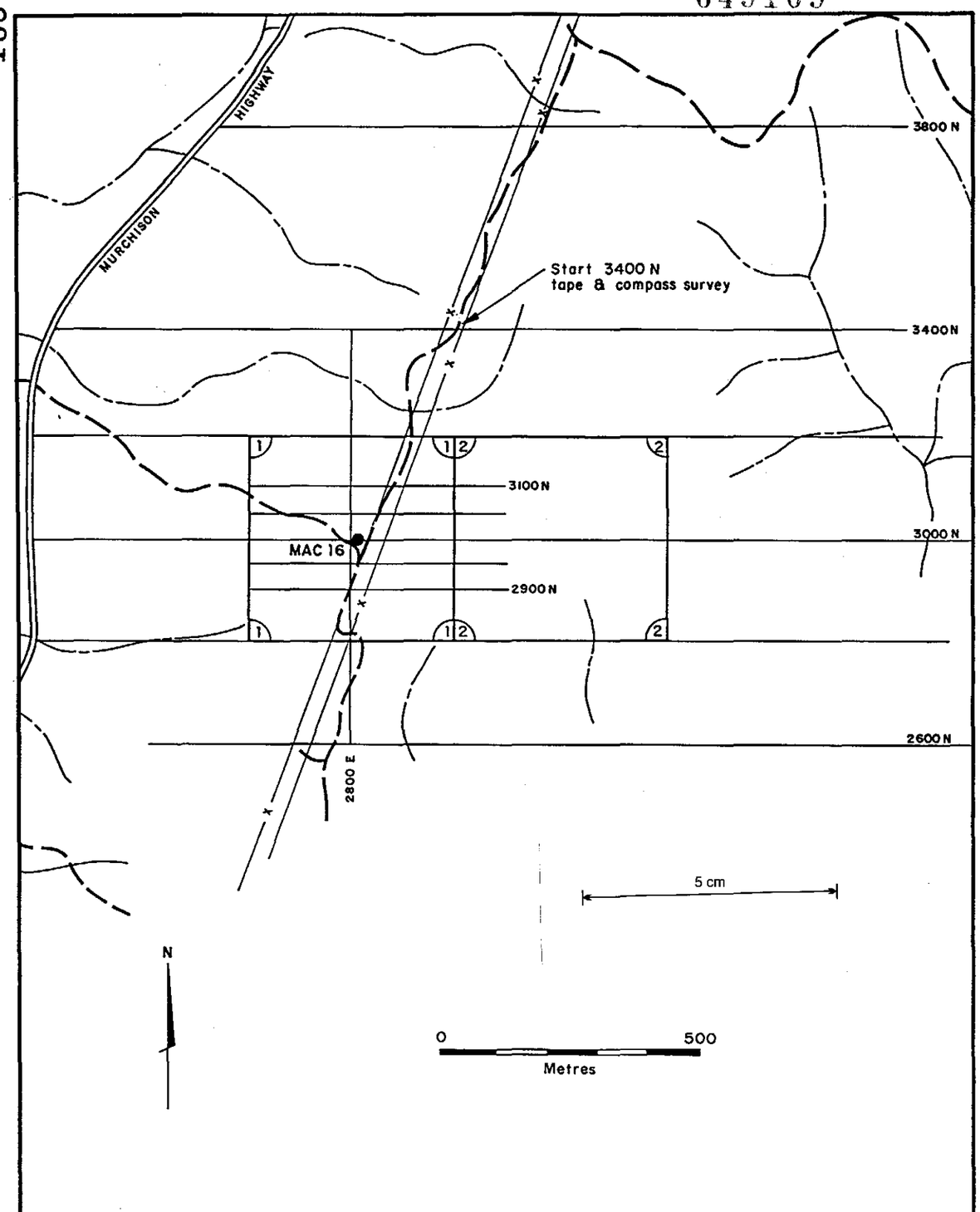


Aberfoyle Resources Limited

EXPLORATION DIVISION

FIG. 1

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

MAC 16

DHEM LOOP LOCATIONS

Scale : 1 : 10000

Date : February 1989

Compiled :

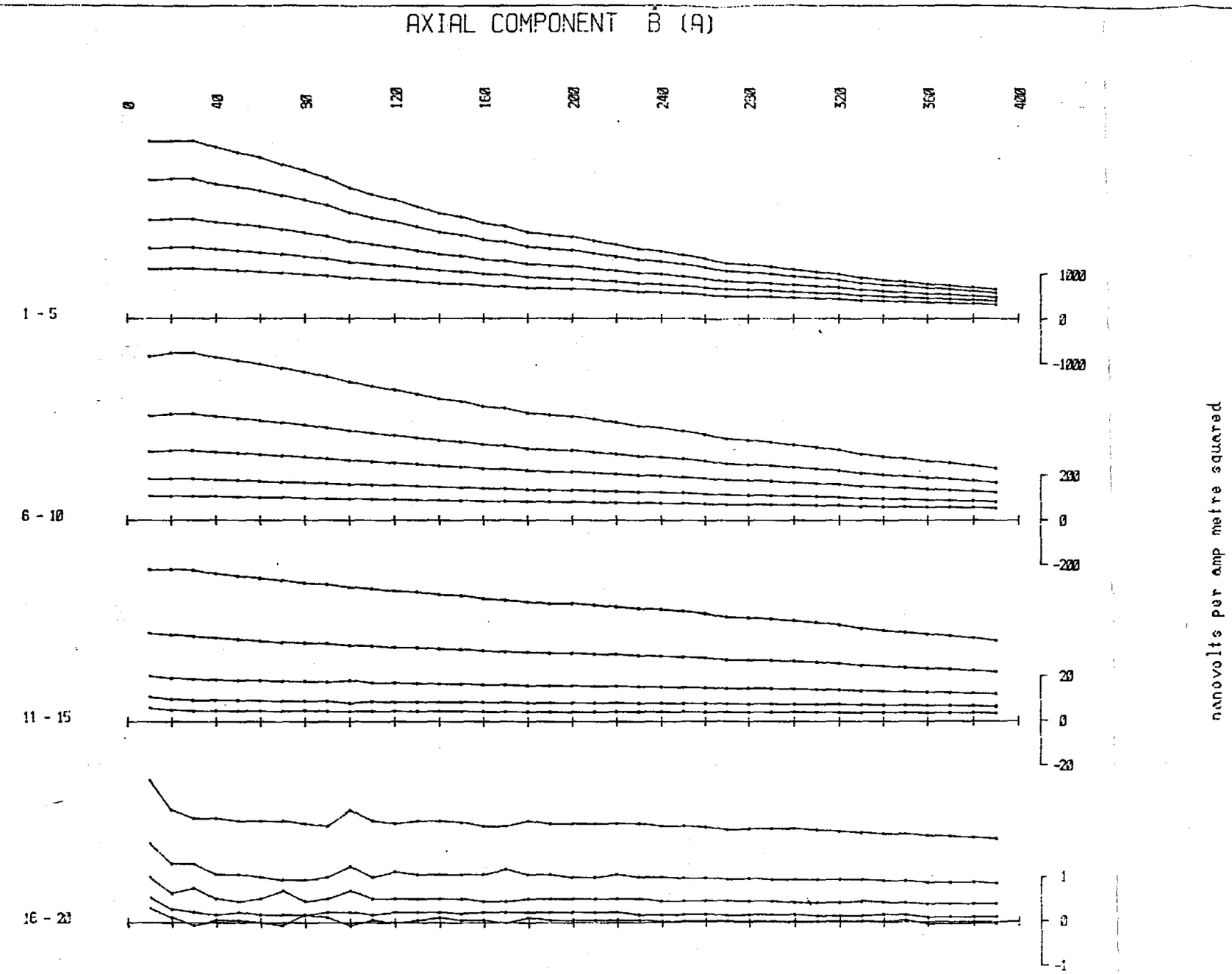
Drawn :

Traced : Geo Drafting

Checked :

Plate No. : MAC 229

1511



EM-37

BOREHOLE SURVEY

ELECTROMOTIVE FORCE INDUCED BY SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	: 13330N	07700E
	: 13650N	08000E
TX LOOP SIZE	: 300 m X 300 m	
TX TURN OFF TIME	: 276 microsecs.	
FIRST GATE TIME	: 93.5 microsecs.	
CURRENT	: 20.0 amps	
FREQUENCY	: 25 Hz.	
INTEGRATION TIME	: 1024 cycles	
SYNC MODE	. CRYSTAL	
HORIZONTAL SCALE	: 1:2000	
SURVEYED BY	: SOJR	
DATE	. 26/10/1988	

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD. | PROJECT NO. 4-006

CLIENT : Aberfoyle Resources

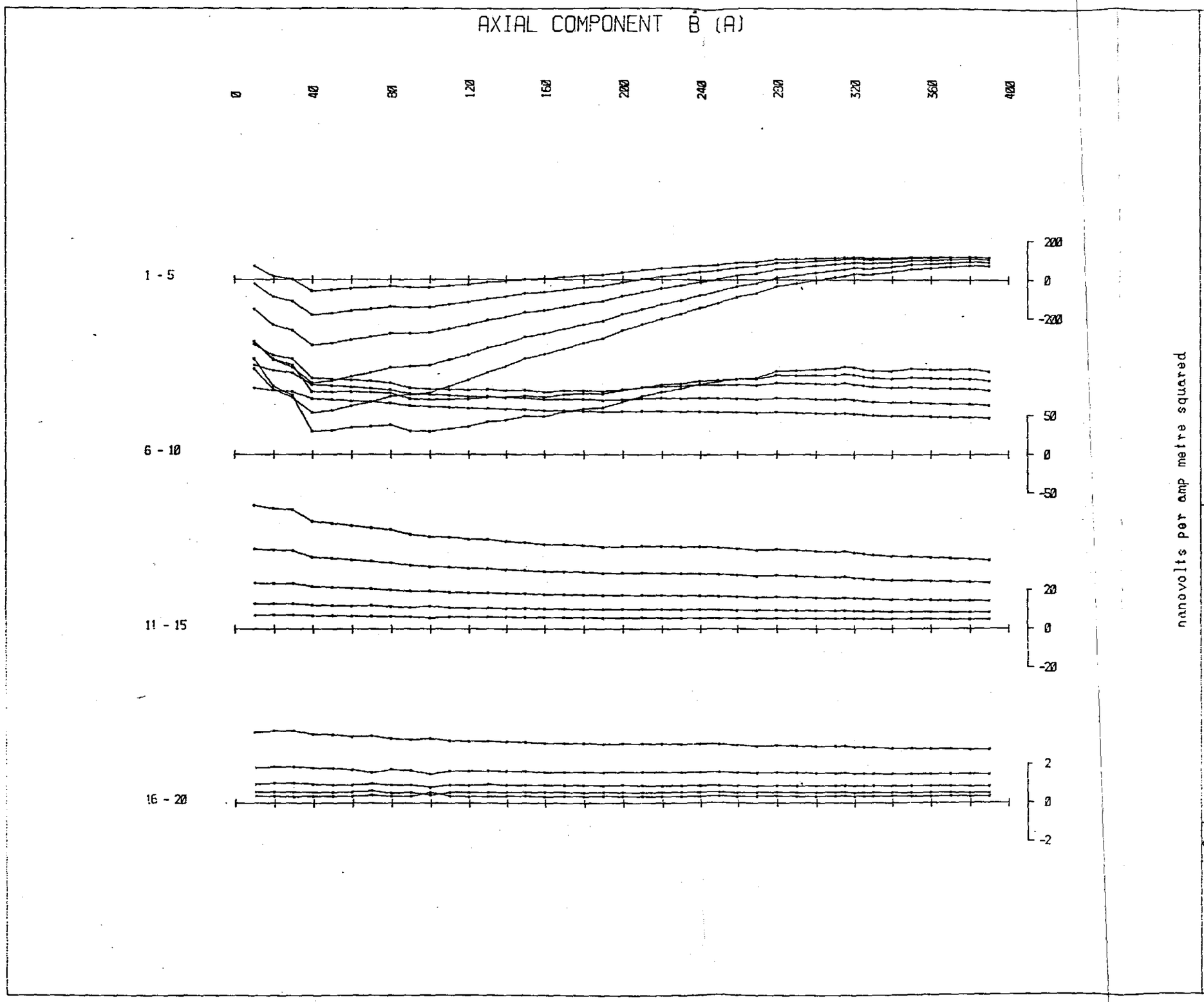
PROJECT . Mackintosh

AREA . : Hellyer Tasmania

BOREHOLE . . MAC20

TX LOOP . . 1

FIG. 2



EM-37

BOREHOLE SURVEY

ELECTROMOTIVE FORCE INDUCED SECONDARY FIELD

TIME DERIVATIVE OF FLUX DENSITY (B)

5 cm

TX LOOP SIDES	:	18330N 03000E
	:	18630N 03300E
TX LOOP SIZE	:	300 m X 300 m
TX TURN OFF TIME	:	292 microsecs.
FIRST GATE TIME	:	98.5 microsecs.
CURRENT	:	19.9 amps
FREQUENCY	:	25 Hz.
INTEGRATION TIME	:	1024 cycles
SYNC MODE	:	CRYSTAL
HORIZONTAL SCALE	:	1:2000
SURVEYED BY	:	SOJR
DATE	:	29/10/1988

SURVEYED AND COMPILED BY GEOTERREX PTY. LTD.

PROJECT NO. 4-006

CLIENT	:	Aberfoyle Resources
PROJECT	:	Mackintosh
AREA	:	Hellyer Tasmania
BOREHOLE	:	MAC20
TX LOOP	:	2

FIG 3

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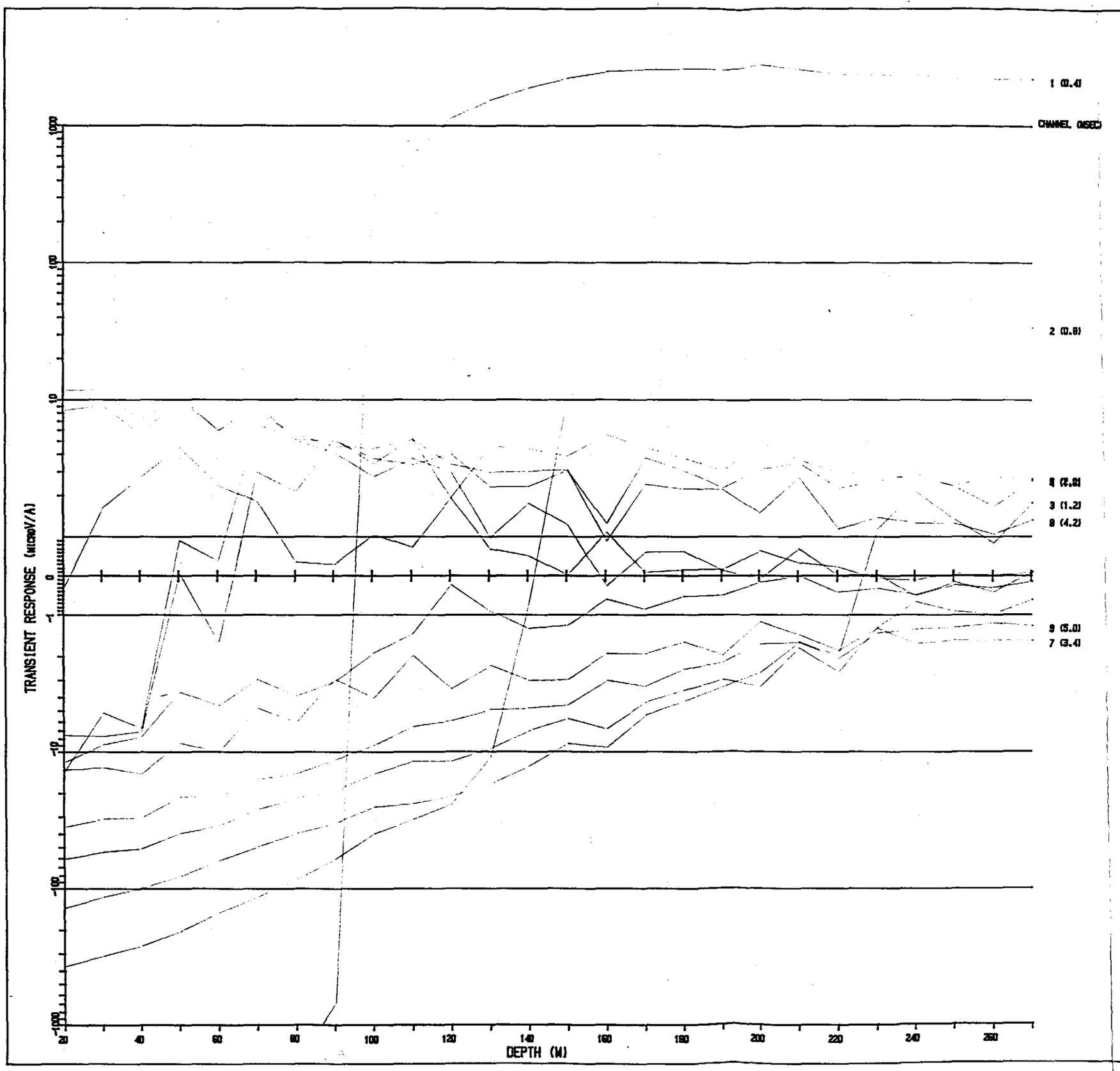

SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : AUGUST 1989
CONFIGURATION : 400M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 10 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 8.0 AMPS

OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MACINTOSH
SIROTEM PROFILE
LINE MAC 16 LOOP 2

SCALE - 1:1000 | FIG. 4

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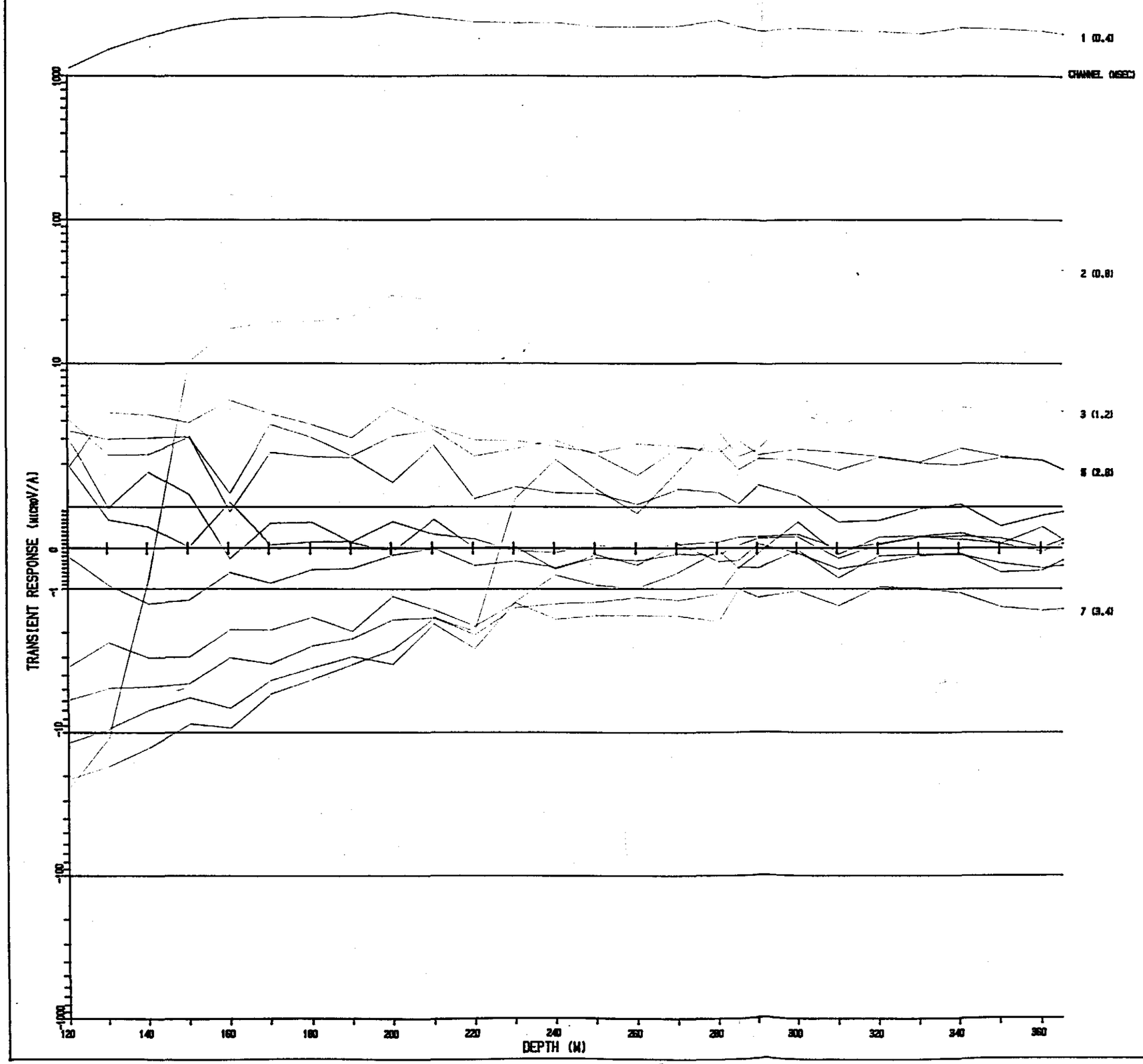

SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : AUGUST 1988
CONFIGURATION : 400M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 10 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 9.0 AMPS
OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MACINTOSH
SIROTEM PROFILE
LINE MAC 16 LOOP 2

SCALE - 1:1000 | FIG. 5

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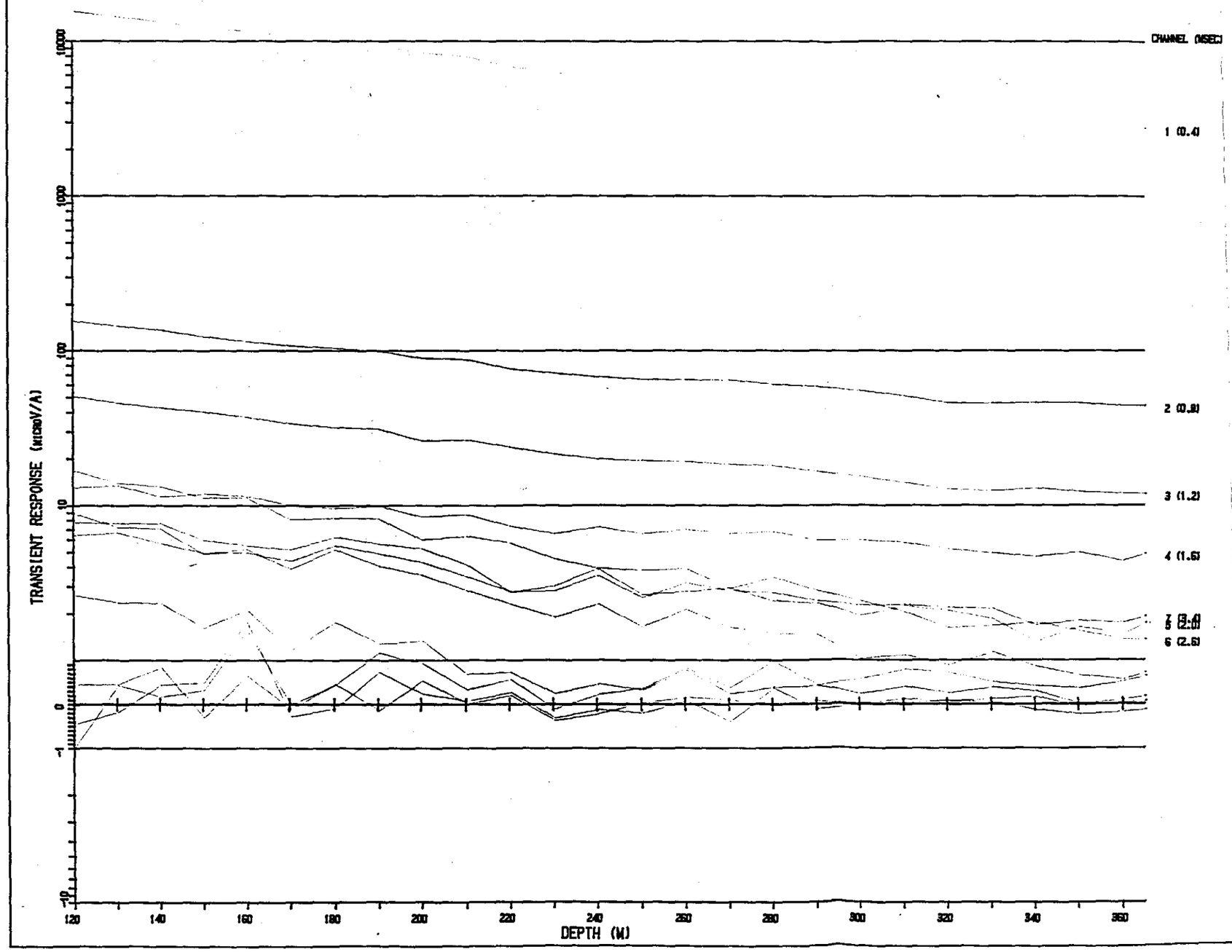
649174



SURVEY SPECIFICATIONS

DATA ACQUIS^N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : AUGUST 1990
CONFIGURATION : 400M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 10 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 9.0 AMPS
OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MACINTOSH
SIROTEM PROFILE
LINE MAC 16 LOOP 1

SCALE - 1:1000 | FIG. 6

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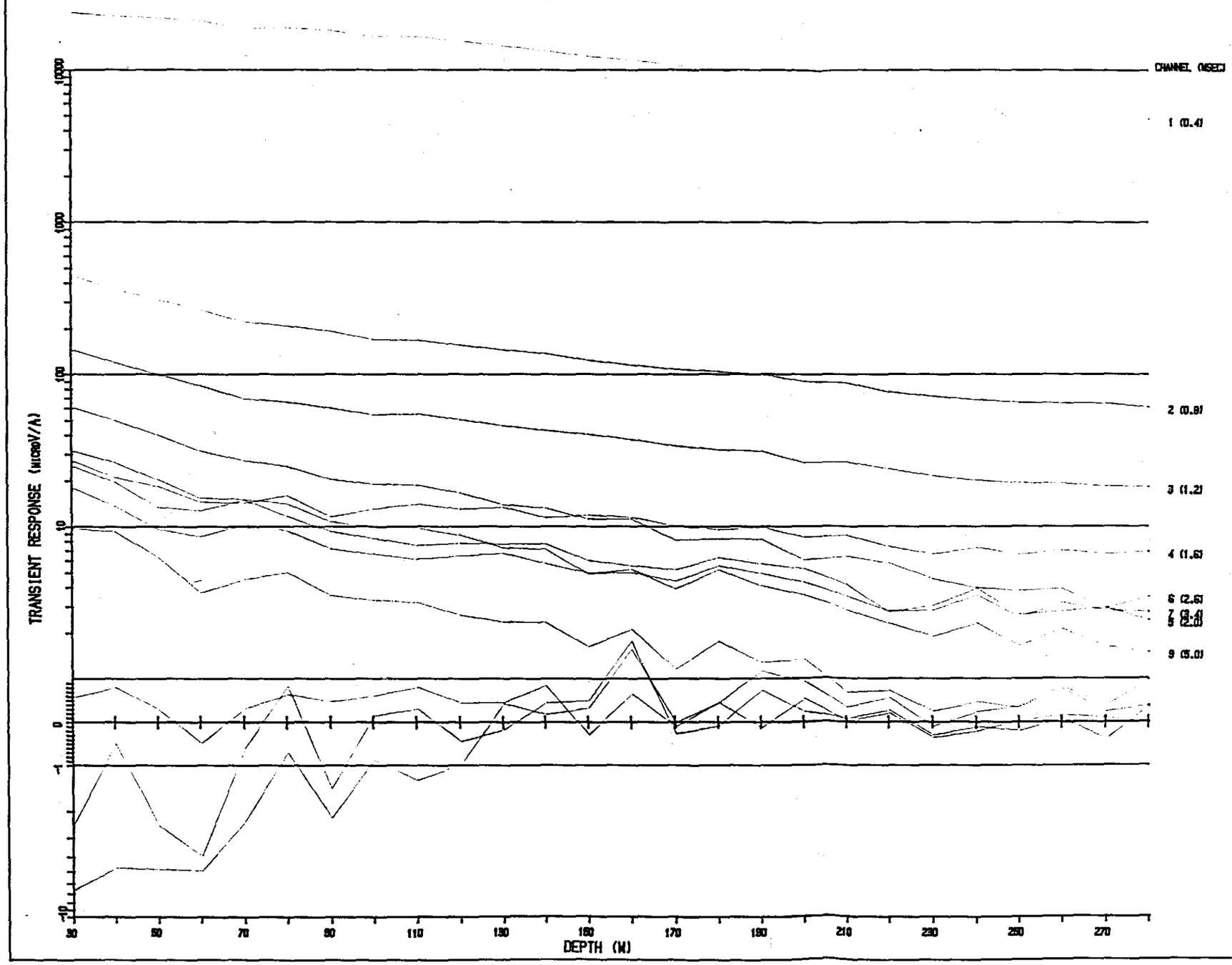
649175



SURVEY SPECIFICATIONS

DATA ACQUIS^N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : AUGUST 1988
CONFIGURATION : 400M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 10 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1236
CURRENT : 9.0 AMPS
OPERATOR : P McSKIMMING

5 cm

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1000
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

ABERFOYLE EXPLORATION

TASMANIA
MACINTOSH
SIROTEM PROFILE
LINE MAC 16 LOOP 1

SCALE - 1:1000 | FIG. 7

APPENDIX 10.

APPENDIX

Sample No.	Description	Location
427809	Contact M^m Mica Sandstone	12710N, 2250E
427811	Mica Sandstone	13080N, 1570E
427814	Dacitic Lava	12680N, 1880E
427815	Ash Volcaniclastic	12490N, 1880E
427818	Tertiary Silcrete	19430N, 2350E
427819	Contact Metamorphosed Sediment?	12230N, 2510E
427821	Coarse Mica Sandstone	11760N, 2800E

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

13th September, 1988

REPORT CMS 88/7/36

YOUR REFERENCE:	Letter dated 25.7.1988
DATE RECEIVED:	26th July, 1988
SAMPLE NOS.:	7 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/7/36

A suite of seven rock chip samples from the Hatfield River area N.W. of Hellyer was received for routine petrological examination. Representative thin sections were prepared, examined in transmitted light and, together with respective offcuts, in oblique incident light. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite is a composite of quartzose sandstones (samples 427811, 427818 and 427821), sericite(-quartz)-altered impure pelitic and psammopelitic ashes (or "xenotuffs", reworked in part, samples 427809, 427815, 427819), and a similarly altered and pyritised felsitic "dacite" (sample 427814).

Sandstones are weakly carbonaceous and chromiferous micaceous types with lithoclastic debris dominated by basement-derived low-grade regional metasedimentary types. Sample 427818 is a relatively fine-grained, well-sorted and mature orthoquartzite, possibly reworked from the 427811/821-type facies.

Tuffaceous sediments are of sub- to distal character and, as noted, at least locally reworked. These rocks may be interpreted as subaerially transported/subaqueously deposited, and are weakly microfossiliferous.

The single devitrified and altered felsic volcanic (427814) is poorly diagnostic in terms of possible correlatives with the inferred primary dacitic composition perhaps more typical of the Que/Hellyer sequence than the generally rhyolitic Central Volcanics complex.

D. Cowan, B. Sc.

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SAMPLE NO.: 427809 (T.S. 60395) 1.

CLASSIFICATION: **Tuffaceous Siltstone**

COMPOSITION: Sericite pseudomorphs after splintery to angular/subangular silt-sized clastic debris, with relatively minor silt- to fine sand-sized, splintery to subangular quartz grains, carbonaceous pelite clasts, minor muscovite flakes. Poorly determinate sericite/cryptocrystalline quartz matrix/cement. Weak/semi-pervasive Fe-stainings.

FABRIC: Weakly bedded, slightly sandy silty clastic/vaguely relict vitroclastic.

ACCESSORIES: Rare siliceous microfossils (spicules, ?foram fragments). Minor clastic leucoxenic semi-opaques, traces of degraded clastic biotite. Minor clots, rhombs of degraded/ferruginised carbonate. Rare clasts of impure chert, quartzose silty pelite.

INTERPRETATION/ COMMENTS: Finer detail obscured by sericitic alteration of labile clastic material interpreted as shards/shard fragments on the basis of ghosted shapes. Rock is thus interpreted as a tuffaceous (vitro-clastic) siltstone/trend pelitic ash. Microfossils, although rare, may warrant palaeontological examination. Advanced sericitic alteration may mask marginal contact effects.

SAMPLE NO.: 427811 (T.S. 60396)

CLASSIFICATION: **Micaceous Protoquartzite**

COMPOSITION: Framework of angular to subangular quartz grains/minor composites, subordinate lithic clasts (quartz-muscovite phyllite, mica phyllite, chert-metaquartzite, carbonaceous shale, carbonaceous slate, minor felsitic intermediate-acid lava clasts), relatively minor muscovite flakes. Intergranular fine quartz/minor sericite cement, supplemented byk a little overgrowth quartz and inter-granular cavity-filling clots of chlorite.

FABRIC: Weakly bedded, moderately to well sorted, fine to medium sandy clastic. Mildly stressed.

ACCESSORIES: Traces of partly chloritised detrital biotite. Traces detrital leucoxene, feldspar grains, minor traces detrital chromite, rare detrital graphite, tourmaline.

INTERPRETATION/ COMMENTS: A quartzose lithoclastic micaceous sandstone with lithoclastic debris dominated by low-grade regional metasedimentary types ("basement"-derived). Reflects mild stress and chloritic alteration effects. No detectable sulphide.

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SAMPLE NO.: 427814 (T.S. 60397)

CLASSIFICATION: **Pyritic, Altered Felsite**

COMPOSITION: Disseminated sericite (± pyrite) pseudomorphed feldspar phenocrysts and phenocrystal clusters in a matrix of variably sericite-stained anhedral quartz with included sericite-pseudomorphed feldspar microlites and interspersed sericitised anhedral feldspar. Disseminated clots and minor discontinuous films of fine-grained pyrite. Minor pyritic quartz veinlets.

FABRIC: Porphyritic/trend glomeroporphyritic, incipiently flow-structured felsitic ("snowflake-textured"). Weakly cognate-xenolithic.

ACCESSORIES: Leucoxenised opaques, rare cloudy microscopic zircons. Minor traces of sphalerite and galena in pyritic quartz veinlets.

INTERPRETATION/ COMMENTS: A thoroughly sericitised/mildly silicified and pyrite-mineralised, devitrified, feldspar-porphyritic pitchstone with dacitic relict compositional characteristics. Conceivably a semi-chilled minor intrusive, dependent on field relationships. Accessory base metal sulphide in traces only, apparently restricted to thin pyritic quartz veinlets.

SAMPLE NO.: 427815 (T.S. 60398)

CLASSIFICATION: **Altered Impure Pelitic Ash**

COMPOSITION: Aggregates of semi- to sericitic white mica with a little intergrown chlorite and cryptocrystalline quartz. Evenly disseminated splintery to subangular, silt- to fine sand-sized quartz grains, minor muscovite flakes, carbonaceous pelite clasts, sericitised and sericite-quartz-pseudomorphed feldspar grains and similarly altered indeterminate lithic (?lava) clasts. Sporadic microfractures with Fe-pigmented selvedges.

FABRIC: Similar to 427809, relatively massive (unbanded) in comparison.

ACCESSORIES: Minor clastic leucoxenic semi-opaques, traces degraded biotite, sparse siliceous microfossils, minor clots of degraded/ ferruginised carbonate.

INTERPRETATION/ COMMENTS: Close affinities with 427809 and similarly altered; slightly relatively distinctive pelitic vitric ashy characteristics, although impure and strictly a tuffaceous siltstone.

SAMPLE NO.: **427818** (T.S. 60399)

CLASSIFICATION: **Orthoquartzite**

COMPOSITION: Framework of silt- to fine sand-sized, subangular to subround quartz grains, relatively quite minor clasts of chert. Overgrowth quartz cement supplemented by a little intergranular quartz and clots of carbonaceous matter.

FABRIC: Well sorted, weakly bedded, fine sandy clastic. Unstressed.

ACCESSORIES: Detrital zircon, leucoxene, traces of tourmaline and minor traces of chromite. Minor clots of ferruginised clay (?kaolin) in the cement.

INTERPRETATION/ COMMENTS: A fine-grained carbonaceous orthoquartzite with a relatively conspicuous detrital heavy mineral assemblage. May represent a reworked Palaeozoic quartzose sandstone. Devoid of definite silcrete-type characteristics.

SAMPLE NO.: **427819** (T.S. 60400)

CLASSIFICATION: **Altered Impure Psammopelitic Ash**

COMPOSITION: Aggregates of sericite and crypto- to finely microcrystalline quartz with disseminated silt- to fine sand-sized, angular to subangular and splintery quartz grains, minor muscovite flakes, carbonaceous pelite clasts and sericitised lava clasts. Semi-pervasive network of quartz veinlets.

FABRIC: Similar to 427809 and 427815; coarser-grained. Weakly bedded and slumped, with irregular pelitic dykes. Unsheared.

ACCESSORIES: Relatively conspicuous detrital leucoxene. Minor microscale kaolinitic quartz veinlets. Rare detrital zircon. Minor traces degraded/ferruginised carbonate.

INTERPRETATION/ COMMENTS: Close affinities with 427809 and 427815; similarly altered, but relatively siliceous (i.e. silicified). Selectively sericitised vitroclastic debris is dominated by weakly fragmental shards, consistent with mild reworking. Initially pelitic ash-parted, slumped and sedimentary-dyked.

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SAMPLE NO.: 427821 (T.S. 60401) 4.

CLASSIFICATION: **Micaceous Protoquartzite**

COMPOSITION: Framework of fine to medium/minor coarse sand-sized, angular to subangular quartz grains, subordinate variably carbonaceous pelite and regional metapelite, orthoquartzite and meta-quartzite, impure chert and metachert clasts, minor muscovite flakes. Limonitic, sericitic-chloritic/intergranular quartz cement.

FABRIC: Poorly (trend bimodally) sorted, slumped, sandy clastic. Very incipiently stressed.

ACCESSORIES: Detrital leucoxene, traces of chloritic/Fe-stained detrital biotite, rare zircons and rare chromite.

INTERPRETATION/ COMMENTS: Close affinities with 427811, relatively lithoclastic and poorly sorted in comparison. Finer detail obscured by partial ferruginisation, but apparently similarly altered, with late intergranular vugs of chlorite.

SAMPLE NO.:

CLASSIFICATION:

COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

APPENDIX II.

"184"

649185

(10)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05609

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 932
Burnie
Tasmania 7320

ORDER No.	PROJECT
3897	

DATE RECEIVED	RESULTS REQUIRED
26/07/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	12/08/88	1	8

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427809,427811/816,427819	RC	Prep: 010,016						Cu,Pb,Zn,Ag/101,As/114		
	427809,427811/816,427819	RC	Prep: 010,016						Ba,Cr,Zr,Ti,V/401,Au/309		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 932
Burnie
Tasmania 7320

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05609	12/08/88	3897	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	427809	15	105	450	<0.5	<0.008	500	8	30	250
2	427811	5	40	140	<0.5	<0.008	250	<1	630	120
3	427812	<5	20	55	<0.5	<0.008	270	3	40	220
4	427813	<5	10	25	<0.5	<0.008	280	10	20	220
5	427814	90	525	1300	1.0	0.025	160	20	45	210
6	427815	5	35	30	0.5	<0.008	180	<1	35	270
7	427816	5	85	20	0.5	<0.008	190	8	15	200
8	427819	<5	15	15	<0.5	<0.008	140	1	90	130
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05609	12/08/88	3897	2 OF 2

TUBE No.	SAMPLE No.	Ti	Y							
1	427809	1450	35							
2	427811	1950	6							
3	427812	1900	30							
4	427813	2000	30							
5	427814	1650	35							
6	427815	1600	40							
7	427816	1750	20							
8	427819	850	15							
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	3							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 12.

APPENDIX

Sample No.	Description	Location
427451	Sheared volcanic	4380N, 6155E
427455	Volcaniclastic	4075N, 6300E
427457	Q veined Mica sandstone	4310N, 6550E
427459	Brecciated volcanic	4535N, 6490E
427462	Dacitic lava	4570N, 6605E
427463	Basalt lava	6610N, 5990E
427464	Crystal rich volcaniclastic	6190N, 6400E
427465	Sheared crystal rich volcaniclastic	6055N, 6400E
427467	Andesitic lava	5960N, 6010E
427472	Dacitic lava	5800N, 6395E
427474	Sheared shale	5210N, 6110E
427478	Dacitic lava	2830N, 6880E

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

CMS

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

7th September, 1988

REPORT CMS 88/6/31

YOUR REFERENCE:	Letter dated 22.6.1988
DATE RECEIVED:	24th June, 1988
SAMPLE NOS.:	12 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

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REPORT CMS 88/6/31

A suite of twelve rock chip samples from the Henty Fault Zone was received for routine petrological examination. Representative thin sections were prepared and examined together with respective offcuts, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

Following A.W. McNeill's grouping (letter of 22nd June), the Que-Hellyer Volcanics are represented by two basics (lava and quartz microgabbro; samples 427463, 427467 respectively), and an altered felsitic (devitrified) pitchstone interpreted as dacitic (sample 427451)

The second group, of acid volcanics, comprises rhyolitic tuff lavas and a variety of variably tuffaceous sediments. This group includes carbonaceous tuffaceous facies broadly similar to those previously noted in the CMS 87/11/16 suite described fro A.M. Hespe. Associated are impure- and pelitic-ashy cherty sediments which enhance the similarities.

This latter group includes a "dacitic" altered felsitic pitchstone similar to 427451, although this may be simply co-incidental. Alteration assemblages and stereobinocular-determined sulphide assemblages are noted in the individual descriptions.

D. Cowan, B. Sc.

SAMPLE NO.: 427451 (T.S. 60211)

CLASSIFICATION: **Altered, Sheared Felsite**

COMPOSITION: Aggregates of semi- to sericitic white mica and variably sericite-stained microcrystalline quartz with frequent crudely lensoid quartz micro-amygdales (mean 250 um); sporadic sericite semi-pseudomorphs after feldspar phenocrysts. Minor weakly sericitic, variably limonitic quartz veinlets.

FABRIC: Phyllitic, with sheared/lensoid feldspar phenocryst-derived sericite aggregates and frequent weakly recrystallized quartz micro-amygdales. Sheared veinlets with pressure shadow fringes on limonite aggregates.

ACCESSORIES: Conspicuous evenly disseminated leucoxenised opaques and ultra-fine leucoxenic semi-opaques. Minor oxidised pyrite (concentrated in veinlets). Rare partly recrystallised micro-phenocrystal quartz.

INTERPRETATION/ COMMENTS: A strongly micro-amygdaloidal/weakly porphyritic felsitic-devitrified pitchstone; primarily compositionally similar to 427462 and similarly interpreted. Conceivably a chilled minor intrusive on the basis of even distribution and bimodal sizing of the titanopaques. Distinctly sheared in comparison with 427462.

SAMPLE NO.: 427455 (T.S. 60212)

CLASSIFICATION: **Sericite-Quartz "Phyllite"**

COMPOSITION: Semi-sericitic white mica with subordinate microcrystalline quartz. Evenly disseminated to weakly banded silt- to fine sand-sized, angular to subangular quartz grains, subordinate carbonaceous pelite clasts; minor muscovite flakes. Sporadic contorted cherty quartz veinlets and crosscutting quartz veinlets.

FABRIC: Fine-grained phyllitic/relict pelite-matrixed silty fine sandy clastic. The matrix exhibits sericitic "ghosts" of microshards/shard fragments. Contorted diagenetic cherty quartz veinlets; stressed quartz veinlets.

ACCESSORIES: Minor clasts of albite, chert and sericitic impure chert. Minor clastic leucoxenic semi-opaques, rare zircons. Minor traces of oxidised pyrite partly concentrated in quartz veinlets.

INTERPRETATION/ COMMENTS: A quartzose, lithoclastic, micaceous sandy pelite; tuffaceous, with distal vitroclastic and minor quartz crystal components partly obscured by sericitic alteration. Exhibits contorted and boudinaged cherty quartz veinlets transected by pretectonic, weakly pyritic quartz veinlets.

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SAMPLE NO.: 427457 (T.S. 60213)

CLASSIFICATION: **Sericite-Quartz Breccia**

COMPOSITION: Aggregates of semi- to sericitic white mica with subordinate sericite-stained, fine to microcrystalline quartz. Pervasive irregular zones of vein-quartz with minor interspersed clots and films of sericite and pale green near-isotropic chlorite; minor microscopic clots of cloudy microcrystalline sideritic carbonate. Thinly disseminated vein- and sericite aggregate-hosted fine-grained pyrite.

FABRIC: Breccia-like, with sub- to millimetric-scale irregular, crudely phyllitic/vaguely relict felsite-textured clasts of sericite-quartz rock; stressed/boudinaged vein-quartz matrix.

ACCESSORIES: Minor late, mildly stressed, discontinuous comb-structured quartz veinlets. Minor traces of leucoxene and carbonaceous matter.

INTERPRETATION/ COMMENTS: Interpreted as a devitrified, thoroughly sericite-quartz-altered, brecciated/quartz-healed and restressed obsidian on vague relict textural grounds. Pyrite concentrated in crude segmented films and stringers in margins of vein-quartz and sericite-quartz-altered host rock. This rock exhibits relatively marked and disharmonic shearing effects in comparison with 427455; consistent with a fault-proximal disposition.

SAMPLE NO.: 427459 (T.S. 60214)

CLASSIFICATION: **Altered Biotite Rhyolite**

COMPOSITION: Frequent stressed, variably corroded/embayed quartz-, subordinate sericite-pseudomorphed feldspar- and leucoxenic sericite-pseudomorphed biotite phenocrysts in a matrix of variably sericitic microcrystalline quartz and semi- to sericitic white mica. Sporadic irregular sericitic fractures.

FABRIC: Strongly porphyritic, micro-felsitic (devitrified), weakly/variably cognate-xenolithick (flow-brecciated) with relatively microcrystalline/chilled clasts (to 3.5 mm). Irregularly dispersed sericitic fractures grade locally into zones of sericite-matrixed granulation/boudinaging.

ACCESSORIES: Disseminations of fine to microcrystalline pyrite impregnating the altered groundmass and phenocrysts. Minor leucoxenic semi-opaques, thinly disseminated zircons.

INTERPRETATION/ COMMENTS: A devitrified and thoroughly sericite-quartz-altered acid lava or, conceivably, a minor intrusive. Weakly flow-brecciated; interpreted as biotite-rhyolitic on the basis of the relict phenocrystal assemblage, particularly the abundant phenocrystal quartz. Pyrite, introduced with the sericitic alteration, predates subsequent heterogeneous stress/shearing effects.

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SAMPLE NO.: 427462 (T.S. 60215) 3.

CLASSIFICATION: **Altered Felsite**

COMPOSITION: Sericite and variably sericite-stained anhedral quartz with thinly disseminated amygdales of quartz, with minor interspersed microscopic clots of muscovite. Thinly disseminated oxidised pyrite euhedra (to 750 um) and limonitic/oxidised pyritic quartz veinlets.

FABRIC: Incipiently banded/flow-structured felsitic; weakly amygdaloidal, slightly porphyritic and weakly spherulitic/perlite-structured. Weakly stressed, with minor limonitic sericitic microfractures.

ACCESSORIES: Rare fine muscovite- and sericite-pseudomorphed feldspar microphenocrysts. Fine leucoxenised/oxidised opaques, rare zircons.

INTERPRETATION/ COMMENTS: A devitrified, sericite-quartz-altered and weakly pyritised felsic lava, weakly amygdaloidal, incipiently porphyritic, and tentatively interpreted as dacitic.

SAMPLE NO.: 427463 (T.S. 60216)

CLASSIFICATION: **Altered Basalt**

COMPOSITION: Frequent albitised/saussuritic prehnite-stained feldspar phenocrysts, subordinate fresh pale green augite phenocrysts and microcrystalline pumpellyite-quartz (± prehnite) pseudomorphed ?orthopyroxene phenocrysts; minor quartz-chlorite amygdales in a groundmass of albitised plagioclase microlaths with a cloudy microcrystalline zoisitic epidote-altered mesostasis.

FABRIC: Flow-structured, porphyritic, weakly amygdaloidal, basaltic. Weakly stressed.

ACCESSORIES: Minor chloritic quartz veinlets (stressed to sheared where relatively chloritic). Minor clots of epidote in amygdales. Thinly disseminated chromite. Rare blebs of chalcopyrite (core of amygdales). Marginal limonitic stainings/replacements.

INTERPRETATION/ COMMENTS: A flow-structured, weakly amygdaloidal "two pyroxene" basalt, extensively epidote-pumpellyite-prehnite-altered. Traces of chalcopyrite in association with chloritic quartz amygdales. These also rarely include traces of epidote, poorly twinned albite and K-feldspar.

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SAMPLE NO.: 427464 (T.S. 60217)

CLASSIFICATION: **Rhyolitic Tuff**

COMPOSITION: Abundant variably sericitised and kaolinitic/partly degraded/ poorly determinate feldspar and subordinate quartz crystals/ crystal fragments, sporadic sericite/microcrystalline quartz-altered lava clasts in a matrix of sericite and crypto- to micro-crystalline quartz. Frequent microcrystalline sericite veinlets; minor discontinuous sericitic quartz veinlets.

FABRIC: Poorly sorted, psammite-grade, crystal-rich fragmental with a sheared, crudely phyllitic/vaguely relict microshardy-textured matrix.

ACCESSORIES: Minor carbonaceous stainings, leucoxenic semi-opaques, rare zircons. Minor secondary limonitic and Mn-oxidic stainings.

INTERPRETATION/ COMMENTS: An extensively sericite-quartz-altered and moderately sheared rhyolitic "crystal tuff" (strictly a lithic-vitric-crystal tuff). Carbonaceous matter apparently introduced (or remobilised) with sericitic alteration and occurs, for example, with sericite aggregates replacing feldspar.

SAMPLE NO.: 427465 (T.S. 60218)

CLASSIFICATION: **Rhyolitic Tuff**

COMPOSITION: Abundant weakly sericite-stained/variably degraded, partly ferruginised feldspar (albite-oligoclase), subordinate quartz crystals/crystal fragments, sporadic cryptocrystalline quartz-sericite-altered lithic clasts in a matrix of sericite and cryptocrystalline quartz.

FABRIC: Similar to 427464, coarser-grained and relatively lithoclastic. Some evidence of flow-brecciation with "cognate" xenoclasts to 2.5 mm. Vaguely relict eutaxite-structured matrix.

ACCESSORIES: Carbonaceous stainings, minor poorly determinate carbonaceous pelitic and impure cherty xenoclasts. Leucoxenised opaques. Secondary limonitic stainings.

INTERPRETATION/ COMMENTS: Close affinities with 427464 and similarly altered/mildly sheared. In comparison, this rock is coarser-grained and relatively lithoclastic, with evidence of flow-brecciation which would support an ignimbritic interpretation (similarly 427464?).

SAMPLE NO.: 427467 (T.S. 60219)

CLASSIFICATION: **Altered Quartz Microgabbro**

COMPOSITION: Albitised/saussuritised plagioclase laths and variably chloritised pale brown augite with subordinate relatively chloritised brown hornblende and chlorite-pseudomorphed orthopyroxene(?), and a semi-pervasive quartz mesostasis. Frequent cloudy microcrystalline clots of epidote.

FABRIC: Medium-, even-grained to weakly feldspar-pyroxene-porphyritic, "doleritic". Essentially unstressed. Mesostasis quartz is micrographic in part.

ACCESSORIES: Minor mesostasis K-feldspar. Rare corroded relics of hornblende. Traces of chloritised biotite. Disseminated leucoxenised opaques and thinly disseminated chromite. Ultrafine acicular apatite as inclusions in mesostasis quartz.

INTERPRETATION/ COMMENTS: A quartz-mesostasised ("tholeiitic") microgabbro. Could be interpreted as a differentiated intrusive or, alternately, the medium-grained core of a thick flow, dependent on field relationships. The felsic differentiation trend comprises presence of amphibole and accessory biotite in addition to primary quartz.

SAMPLE NO.: 427472 (T.S. 60220)

CLASSIFICATION: **Altered, Veined Felsite**

COMPOSITION: Sericite and variably sericite-stained fine anhedral quartz with minor irregular sericite veinlets and relatively massive feldspar phenocryst semi-pseudomorphous sericite aggregates; sparse corroded microphenocrystal quartz (to 300 um). Sporadic quartz veins and veinlets with interspersed clots and films of semi-sericitic white mica and small vugs partly infilled with secondary aggregates of kaolin and quartzose silt.

FABRIC: Weakly porphyritic, even-grained, massive to incipiently banded felsitic (devitrified). Stressed quartz veinlets and crudely comb-structured semi-stockwork-style quartz veins, incipiently displaced by sericite veinlets.

ACCESSORIES: Rare zircons, traces ultrafine leucoxenic semi-opaques, rare ver fine oxidised pyrite. Sporadic secondary exotic (introduced) limonitic stainings.

INTERPRETATION/ COMMENTS: A devitrified felsic pitchstone (weakly porphyritic glassy lava), reasonably interpreted as dacitic. Reflects partial silicification with semi-contemporaneous to subsequent sericitisation and "grades" into a quartz-sericite-matrixed breccia. Close affinities with 427462; porphyritic and slightly relatively siliceous in comparison.

SAMPLE NO.: 427474 (T.S. 60221)

CLASSIFICATION: **"Chert-Pelite Breccia"**

COMPOSITION: Aggregates of fine anhedral to micro- and cryptocrystalline quartz with interspersed zones of carbonaceous sericitic pelite. Pervasively disseminated clots and discontinuous films of partly degraded and ferruginised sideritic carbonate.

FABRIC: Variable. Grades from carbonaceous pelite-matrixed chert breccia to chert-matrixed pelite breccia with a weak phyllitic overprint; sub- to fine millimetric-scale clasts and lenses, ovoids of fine anhedral replacive quartz with clots of carbonate.

ACCESSORIES: Minor silt- to fine sand-sized clastic quartz grains, rare silt-sized detrital muscovite flakes. Sparse vague sericite-carbonate pseudomorphs after feldspar grains.

INTERPRETATION/ COMMENTS: Apparently a slump breccia composite of carbonaceous pelite and impure (dolomitic?, sericitic) chert with coarser-grained lenses and ovoids of quartz and carbonate interpreted as altered dolomite aggregates. Includes minor poorly determinate "tuffaceous" components. Finer detail obscured by quartz-carbonate alteration and shearing effects.

SAMPLE NO.: **427478** (T.S. 60222)

CLASSIFICATION: **Tuffaceous Impure Chert**

COMPOSITION: Crypto- to microcrystalline quartz with subordinate to minor semi- to sericitic white mica; thinly disseminated silt- to fine sand-sized clastic quartz grains and minor silt-sized muscovite flakes. Sporadic discontinuous quartz veinlets, sericitic microfractures and late chlorite-quartz veinlets.

FABRIC: Crudely lenticularly banded with lensoid chert clasts, sericitic matrix. Cherty zones are vaguely relict microshardy in part. Mildly sheared.

ACCESSORIES: Disseminated leucoxenic semi-opaques and microscopic clots of carbonaceous matter. Extremely rare microscopic "authigenic" green tourmaline.

INTERPRETATION/ COMMENTS: Affinities with 427474; relatively cherty in comparison and with enhanced silty to fine sandy clastic components (quartz grains, mica flakes, leucoxenic semi-opaques), supplemented by poorly defined silicified vitroclastic debris. This rock could grade into a pelitic ash.

APPENDIX 13.

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 FAX: 004 31 8890 Telex AA92560

(5)

ANALYTICAL REPORT No. 23.3.08.05295

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3060	

DATE RECEIVED	RESULTS REQUIRED
30/03/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	18/04/88	1	14

STATE OF SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427426/39	RC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	427426/39	RC							Ba,Cr,Zr,Ti,Y/401		
	427426/39	RC							Au/309		
	427426/39	RC							AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MACK E.L.
HENTY FAULT ZONE
ROCK CHIPS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05295	18/04/88	3060	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	Cr
1	427426	60	645	190	<0.5	<0.008	<0.008	850	250	260
2	427427	55	<5	35	<0.5	<0.008	–	1050	6	25
3	427428	25	<5	35	<0.5	<0.008	–	360	3	<5
4	427429	25	5	125	<0.5	<0.008	–	770	1	490
5	427430	75	5	40	<0.5	<0.008	–	130	2	75
6	427431	30	15	20	<0.5	<0.008	–	1050	<1	45
7	427432	20	10	20	<0.5	<0.008	–	420	4	35
8	427433	5	5	50	<0.5	<0.008	–	820	1	<5
9	427434	10	15	105	<0.5	<0.008	–	1750	4	30
10	427435	25	10	60	<0.5	<0.008	–	260	5	150
11	427436	15	5	20	<0.5	<0.008	–	690	1	<5
12	427437	45	10	25	<0.5	<0.008	<0.008	450	18	220
13	427438	135	15	110	<0.5	<0.008	–	420	1	570
14	427439	35	5	105	<0.5	<0.008	–	1100	1	480
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	0.008	10	1	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	309	401	114	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05295	18/04/88	3060	2 OF 2

TUBE No.	SAMPLE No.	Ni	Zr	Ti	Y					
1	427426	135	190	3200	20					
2	427427	20	220	1800	25					
3	427428	35	170	1700	20					
4	427429	130	110	3150	15					
5	427430	60	60	1550	15					
6	427431	10	180	2150	15					
7	427432	15	150	1500	20					
8	427433	10	170	1850	25					
9	427434	50	280	2150	40					
10	427435	60	140	3350	20					
11	427436	15	300	2750	25					
12	427437	60	160	2750	20					
13	427438	150	95	3800	15					
14	427439	120	100	3750	20					
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	50	5					
24	UNITS	PPM	PPM	PPM	PPM					
25	METHOD	101	401	401	401					

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8090

ANALYTICAL REPORT No. 23.3.08.05413

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3087	

DATE RECEIVED	RESULTS REQUIRED
05/05/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	10/06/88	1	10

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	RC	Prep: 013,016						Cu,Pb,Zn,Ag/101,As/114		
	Various	RC							Ba/401		
	Various	RC							Au/309		
	427462/63,427467	RC							Cr,Zr,Ti,Y/401		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

HENTY FAULT ZONE
ROCK CHIPS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05413	10/06/88	3087	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	427450	10	10	45	<0.5	<0.008	60	6	–	–
2	427456	10	5	70	<0.5	<0.008	170	10	–	–
3	427457	5	5	35	<0.5	<0.008	430	16	–	–
4	427459	35	250	20	2.5	<0.008	IS	280	–	–
5	427462	10	30	35	<0.5	<0.008	340	10	40	130
6	427463	55	5	115	<0.5	<0.008	320	8	300	95
7	427467	10	10	145	<0.5	<0.008	610	4	300	65
8	427469	10	<5	45	1.0	<0.008	260	4	–	–
9	427470	5	5	5	<0.5	<0.008	330	<1	–	–
10	427472	5	<5	10	<0.5	<0.008	1100	1	–	–
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05413	10/06/88	3087	2 OF 2

TUBE No.	SAMPLE No.	Ti	Y							
1	427450	–	–							
2	427456	–	–							
3	427457	–	–							
4	427459	–	–							
5	427462	700	15							
6	427463	3750	15							
7	427467	1950	15							
8	427469	–	–							
9	427470	–	–							
10	427472	–	–							
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
-- = element not determined

AUTHORISED OFFICER

640205

APPENDIX 14.

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05525

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3820	

DATE RECEIVED	RESULTS REQUIRED
15/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	12/07/88	1	23

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427753/75	SS Prep: 016							Cu,Pb,Zn,Ag/101,As/114		
	427753/75	SS							Ba/401,Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

HF2.
S/SEDS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05525	12/07/88	3820	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	
1	427753	50	125	180	0.5	0.048	–	860	34	
2	427754	55	110	140	<0.5	0.021	–	980	30	
3	427755	75	20	160	<0.5	0.010	–	530	6	
4	427756	50	105	100	0.5	0.020	–	910	28	
5	427757	55	90	100	0.5	0.045	–	920	25	
6	427758	40	10	35	<0.5	0.008	–	140	2	
7	427759	65	10	60	<0.5	<0.008	–	250	4	
8	427760	25	10	65	<0.5	<0.008	–	270	3	
9	427761	25	10	85	<0.5	<0.008	–	320	2	
10	427762	10	<5	20	1.0	<0.008	–	90	2	
11	427763	10	<5	10	0.5	<0.008	0.009	50	1	
12	427764	10	<5	10	<0.5	<0.008	–	80	1	
13	427765	115	65	250	1.0	<0.008	–	300	16	
14	427766	30	10	55	0.5	<0.008	–	310	6	
15	427767	45	20	55	1.5	<0.008	–	340	8	
16	427768	70	20	55	1.0	<0.008	–	360	8	
	427769	25	5	20	1.0	<0.008	–	240	6	
18	427770	20	<5	15	0.5	<0.008	–	130	2	
19	427771	40	<5	25	1.5	<0.008	–	95	3	
20	427772	10	5	15	0.5	<0.008	–	70	2	
21	427773	80	20	90	0.5	<0.008	–	210	10	
22	427774	20	<5	20	1.0	<0.008	–	190	2	
23	427775	40	20	50	1.5	<0.008	–	160	7	
24										
25										

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05525	12/07/88	3820	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	0.008	0.008	10	1	
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
24	METHOD	101	101	101	101	309	309	401	114	
25										

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05417

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3091	

DATE RECEIVED	RESULTS REQUIRED
05/05/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	31/05/88	1	44

STATE OF SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
C	427709/52	SS							Cu,Pb,Zn,Ag/101,As/114		
	427709/52	SS							Ba/401		
	427709/52	SS							Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

HENTY FAULT ZONE
STREAM SEDIMENT
SAMPLES

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER Cheryl Cathro

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05417	31/05/88	3091	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427709	15	<5	30	<0.5	<0.008	60	2		
2	427710	20	<5	35	<0.5	<0.008	130	2		
3	427711	55	<5	70	<0.5	<0.008	120	6		
4	427712	45	<5	90	<0.5	<0.008	230	9		
5	427713	40	25	110	<0.5	<0.008	230	2		
6	427714	30	50	95	<0.5	<0.008	260	<2		
7	427715	35	55	135	<0.5	<0.008	290	8		
8	427716	20	<5	45	<0.5	<0.008	160	<2		
9	427717	45	<5	75	<0.5	<0.008	210	2		
10	427718	130	15	120	0.5	<0.008	160	5		
11	427719	230	345	885	2.5	<0.008	300	50		
12	427720	55	5	110	<0.5	<0.008	270	4		
13	427721	70	<5	75	<0.5	<0.008	160	<2		
14	427722	15	<5	35	<0.5	<0.008	130	2		
15	427723	35	<5	65	<0.5	<0.008	200	<2		
16	427724	65	<5	80	<0.5	<0.008	210	<2		
[illegible]	427725	35	<5	50	<0.5	<0.008	75	<2		
18	427726	115	110	990	<0.5	<0.008	420	10		
19	427727	10	<5	30	<0.5	<0.008	70	<2		
20	427728	10	<5	30	<0.5	<0.008	<10	<2		
21	427729	40	295	285	<0.5	0.010	200	20		
22	427730	20	10	95	<0.5	<0.008	100	2		
23	427731	30	10	120	<0.5	<0.008	250	<2		
24	427732	35	35	175	<0.5	<0.008	400	4		
25	427733	25	30	130	<0.5	<0.008	300	4		

Results in ppm unless otherwise specified
T = element present but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER Cheryl Cathie

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05417	31/05/88	3091	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	427734	15	<5	30	<0.5	<0.008	170	3		
2	427735	15	<5	65	<0.5	<0.008	260	2		
3	427736	15	<5	35	<0.5	<0.008	190	7		
4	427737	40	45	85	<0.5	<0.008	380	10		
5	427738	130	175	1500	<0.5	0.019	360	15		
6	427739	20	<5	40	<0.5	<0.008	140	<2		
7	427740	145	255	2100	<0.5	<0.008	340	15		
8	427741	40	100	160	<0.5	0.127	790	35		
9	427742	15	10	40	<0.5	<0.008	240	<2		
10	427743	150	260	2150	<0.5	<0.008	570	25		
11	427744	10	<5	25	<0.5	<0.008	250	2		
12	427745	35	<5	50	<0.5	0.013	170	3		
13	427746	30	5	80	<0.5	<0.008	270	2		
14	427747	40	5	130	<0.5	<0.008	290	5		
15	427748	15	<5	15	<0.5	<0.008	160	<2		
16	427749	30	<5	105	<0.5	<0.008	220	<2		
(	427750	30	<5	35	<0.5	<0.008	290	6		
18	427751	35	<5	25	<0.5	<0.008	75	<2		
19	427752	20	<5	20	<0.5	<0.008	70	<2		
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	2		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	401	401		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER Cheryl Cathie

640212

Australian Laboratory Services PTY. LTD.

(3)

CONSULTING ANALYTICAL CHEMISTS

INCORPORATED IN QUEENSLAND

LABORATORY REPORT

Charters Towers Laboratory
18 Drew Street, Charters Towers, Q. 4820
Phone: (077) 87 4155. Fax: (077) 87 4220.
Bendigo Laboratory
127A Victoria Street, Eaglehawk, Vic. 3556.
Phone: (054) 46 1390. Fax (054) 46 1389.

Brisbane Head Office and Laboratory
32 Shand Street, Stafford, Q. 4053.
P.O. Box 66, Everton Park, Q. 4053.
Phone: (07) 352 5577. Telex: ALSEV 42344
Fax: (07) 352 5109.
Perth Office and Laboratory
16 Bassendean Road, Bayswater, W.A. 6053
Phone: (09) 272 2300. Fax: (09) 272 5787.
Townsville Laboratory
21 Bombala Street, Garbutt, Q. 4814
Phone: (077) 79 9155. Fax: (077) 799 729.

Client: ABERFOYLE RESOURCES LIMITED
Address: P.O. BOX 952
BURNIE
TASMANIA 7320

Batch Number: D010

Contact: MR. R. DE DOMFORD

No. of Samples: 15
Date Received: 05/04/88
Date Completed: 21/04/88

Order No. LETTER

Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	Au ppt PM216	S.Wt Kg			
427886		<50	13.5			
427887		<50	9.60			
427888		<50	13.2			
427889		50	12.0			
427890		<50	13.2			
427891		<50	10.8			
427892		<50	11.0			
427893		150	8.60			
427894		<50	8.95			
427895		<50	10.1			
427896		100	9.57			
427897		<50	9.42			
427898		50	12.5			
427899		50	13.4			
427900		<50	7.21			
Detection Limit:		50				

Comments:

NATA Registered Laboratory No. 825

This Laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration. This Document shall not be reproduced except in full.

Signatory:

FORM ALS 01

212

649213

89-2948 V2

EL106/87

LETTER
21.4.'89
REFERS

OPEN FILE

LAKE MACKINTOSH, EXPLORATION LICENCE 106/87

TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

FEBRUARY 1988 TO FEBRUARY 1989

APPENDICES 15-26

89-2948
V2/4

649214

APPENDIX 15.

649213

Australian Laboratory Services PTY. LTD.

CONSULTING ANALYTICAL CHEMISTS

INCORPORATED IN QUEENSLAND

LABORATORY REPORT

Brisbane Head Office and Laboratory
32 Shand Street, Stafford, Q. 4053
P.O. Box 66, Everton Park, Q. 4053.
Phone: (07) 352 5577.
Fax: (07) 352 5109.

Perth Laboratory
Lot 197 Victoria Road, Malaga, W.A. 6062.
Phone: (09) 249 2988. Fax: (09) 249 2942.

Townsville Laboratory
21 Bombala Street, Garbutt, Q. 4814.
Phone: (077) 79 9155. Fax: (077) 799 729.

Charters Towers Laboratory
18 Drew Street, Charters Towers, Q. 482
Phone: (077) 87 4155. Fax (077) 87 4220

Bendigo Laboratory
127A Victoria Street, Eaglehawk, Vic. 35
Phone: (054) 46 1390. Fax: (054) 46 138

Orange Laboratory
10 Leewood Drive, Orange, N.S.W. 2800
Phone: (063) 631 722. Fax: (063) 631 18

8

Page 1 of 1

Client: ABERFOYLE RESOURCES LIMITED
Address: P O BOX 952
BURNIE
TASMANIA 7320

Batch Number: P427

Contact: MR R DE BONFORD

No. of Samples: 10
Date Received: 10/02/89
Date Completed: 16/02/89

Order No. 5614 Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	Au ppt PM216	S.Wt Kg			
430837		<50	4.60			
430838		50	11.6			
430839		300	8.19			
430840		50	9.22			
430841		<50	8.84			
430842		<50	10.8			
430843		<50	13.3			
430844		<50	16.6			
430845		100	15.3			
430846		250	9.57			
Detection Limit:		50				

Comments:

UNLESS NOTIFIED PULPS WILL BE DUMPED ON 10/08/89 AND SPLITS (IF ANY) ON 10/05/89

Signed: G. [illegible]

FORM ALS O1(A)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8870

ANALYTICAL REPORT No. 23.3.08.05958

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5382	

DATE RECEIVED	RESULTS REQUIRED
24/01/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	06/02/89	1	48

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	430786/833	SS	Prep: 01						Cu,Pb,Zn,Ag/101,As/114		
	430786/833	SS							Ba/401,Au,AuChk/309		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

South Hatfield
Stream Sediments.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

216

649217

ANALABS

A Division of Mineralogical Services (N.S.W.) Pty Ltd

ANALYTICAL DATA

REPORT NUMBER REPORT DATE

			23.3.08.05958			06/02/89	5382		1 OF 3	
SAMPLE No.	LOC. SAMPLE No.	Ag	Pb	Zn	Au	Pd				
1	430786	45	340	705	<0.5	0.032	350	23		
2	430787	30	10	45	<0.5	0.015	370	3		
3	430788	25	20	60	<0.5	0.014	510	6		
4	430789	15	25	50	<0.5	0.011	300	7		
5	430790	30	15	45	<0.5	0.011	410	4		
6	430791	30	35	90	<0.5	0.010	310	16		
7	430792	35	60	180	<0.5	0.010	310	16		
8	430793	35	75	135	<0.5	<0.008	380	37		
9	430794	20	15	60	<0.5	<0.008	280	8		
10	430795	40	60	180	<0.5	0.009	460	15		
11	430796	60	110	110	<0.5	<0.008	550	210		
12	430797	20	20	60	<0.5	<0.008	460	4		
13	430798	35	15	75	<0.5	<0.008	490	9		
14	430799	45	10	65	<0.5	<0.008	140	9		
15	430800	15	25	80	<0.5	<0.008	210	13		
16	430801	20	80	250	<0.5	<0.008	330	23		
	430802	35	30	65	<0.5	<0.008	330	25		
18	430803	5	5	30	<0.5	<0.008	110	9		
19	430804	30	10	45	<0.5	<0.008	170	11		
20	430805	25	10	45	<0.5	<0.008	270	10		
21	430806	20	5	40	<0.5	<0.008	360	13		
22	430807	5	10	50	<0.5	0.009	530	11		
23	430808	5	5	30	<0.5	<0.008	240	2		
24	430809	40	20	65	0.5	<0.008	440	9		
25	430810	15	25	60	<0.5	<0.008	280	14		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

217

649218

ANALABS

A Division of MacDonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE TYPE	REPORT NUMBER	REPORT DATE	INVOICE No.	PAGE
	23.3.08.05958	06/02/89	5382	2 OF 3

SAMPLE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au				
1	430811	40	15	55	<0.5	<0.008	520	11		
2	430812	40	15	50	<0.5	<0.008	480	7		
3	430813	30	50	80	<0.5	<0.008	280	24		
4	430814	30	25	50	<0.5	<0.008	360	19		
5	430815	20	45	85	<0.5	0.008	240	20		
6	430816	30	25	60	<0.5	<0.008	450	10		
7	430817	20	45	100	<0.5	<0.008	280	28		
8	430818	20	35	70	<0.5	<0.008	450	7		
9	430819	40	5	50	<0.5	<0.008	210	2		
10	430820	45	35	100	<0.5	<0.008	470	5		
11	430821	30	10	50	<0.5	<0.008	450	3		
12	430822	20	5	40	<0.5	<0.008	420	4		
13	430823	55	15	70	<0.5	<0.008	530	9		
14	430824	25	10	45	<0.5	<0.008	340	5		
15	430825	30	20	60	<0.5	<0.008	370	21		
16	430826	35	5	40	<0.5	<0.008	200	6		
17	430827	15	20	40	<0.5	<0.008	330	11		
18	430828	20	15	45	<0.5	<0.008	460	7		
19	430829	20	50	115	<0.5	0.015	250	29		
20	430830	10	15	50	<0.5	<0.008	540	9		
21	430831	35	60	175	<0.5	<0.008	320	16		
22	430832	10	<5	25	<0.5	<0.008	100	9		
23	430833	35	<5	35	<0.5	<0.008	200	6		
24										
25										

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

218

649219

ANALABS

A Division of [illegible]

ANALYTICAL DATA

SAMPLE/FILE DESCRIPTION	REPORT NUMBER	DATE	CLIENT ORDER No.	PAGE
	23.3.08.05958	06/02/89	5382	3 OF 3

LINE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Cd	Sb	Bi		
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	0.008	10	1		
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
24	METHOD	101	101	101	101	309	401	114		
25										

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649220

ANALABS

23.3.08.05663

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

4466

19/08/88 | ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	REPORT NO.	
1	05/09/88	1	4

427776/79	SS Prep: 016								Cu,Pb,Zn,Ag/101		
427776/79	SS								As/114,Ba/401,Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

HF2
S/SEDS.

STATE OF SAMPLES		ANALYSIS — PREPARATION			ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	[illegible]	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	[illegible]	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	[illegible]	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	[illegible]	colorimetry	COL
soil	SO	nitric-perchloric	A5	[illegible]	chromatography	CHR
pulp	PU	HF mixture	A6	[illegible]	titration	TTN
water	WA	HF under pressure	A7	[illegible]	other chemicals means	CHEM
tissue	TI	fusion	A8	[illegible]	miscellaneous	MISC
stream sediment	SS				fluorescence	FLUOR
heavy mineral	HM				inductively coupled plasma	ICP

AUTHORISED OFFICER

649221

ANALABS

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	PROJECT NUMBER	PAGE
	23.3.08.05663	05/09/88	4466	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As			
1	427776	160	40	165	<0.5	0.049	41	1050		
2	427777	80	180	190	<0.5	<0.008	30	680		
3	427778	115	205	165	0.5	<0.008	78	1100		
4	427779	95	25	200	<0.5	<0.008	12	590		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	1	10		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	114	401		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649222

APPENDIX 16.

222

649223

(17)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.06002

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5617	

DATE RECEIVED	RESULTS REQUIRED
08/02/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	21/02/89	1	18

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427856/59,427861/74	RC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag/101,As/114		
	427856/59,427861/74	RC							Ba,Cr,Zr,Ti,Y/401,Au,AuChk/309		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MACK E.L.
SOUTH HAT.
ROCK CHIPS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

223

649224

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06002	21/02/89	5617	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	427856	25	15	180	<0.5	<0.008	1150	7	35	80
2	427857	35	15	160	<0.5	<0.008	2100	4	<5	120
3	427858	<5	10	35	<0.5	<0.008	260	<1	65	210
4	427859	40	30	50	<0.5	<0.008	840	19	160	200
5	427861	20	40	15	<0.5	<0.008	570	15	25	170
6	427862	10	35	95	<0.5	<0.008	240	64	160	420
7	427863	<5	15	60	<0.5	<0.008	1750	8	<5	380
8	427864	<5	20	60	<0.5	<0.008	1500	8	<5	380
9	427865	35	20	265	<0.5	<0.008	260	34	25	280
10	427866	<5	10	30	<0.5	<0.008	230	5	240	140
11	427867	<5	10	45	<0.5	<0.008	230	4	650	220
12	427868	85	65	315	<0.5	<0.008	390	16	55	180
13	427869	<5	5	35	<0.5	<0.008	190	8	30	200
14	427870	15	5	40	<0.5	<0.008	280	10	15	120
15	427871	15	45	25	<0.5	<0.008	810	22	20	160
16	427872	<5	5	60	<0.5	<0.008	680	4	55	260
17	427873	10	20	85	<0.5	<0.008	930	11	50	250
18	427874	10	25	35	<0.5	<0.008	680	7	15	150
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

-224

649225

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06002	21/02/89	5617	2 OF 2

TUBE No.	SAMPLE No.	Ti	Y							
1	427856	6900	25							
2	427857	7450	20							
3	427858	1300	25							
4	427859	3400	30							
5	427861	1950	30							
6	427862	5200	30							
7	427863	4000	50							
8	427864	1800	50							
9	427865	2700	40							
10	427866	2300	10							
11	427867	2900	15							
12	427868	4000	30							
13	427869	1250	30							
14	427870	1600	20							
15	427871	2100	30							
16	427872	3000	15							
17	427873	3000	15							
18	427874	1600	20							
19										
20										
21										
22										
23	DETECTION	50	5							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
- = element present; but concentration too low to measure
X = element concentration is below detection limit
... = element not determined

AUTHORISED OFFICER

649226

APPENDIX 17.

226 LICENCE: ~~Hellyer~~ MACK E.L 649227 1600N 1/2

PROJECT: Sth. Hatfield Infill. SAMPLED BY: (3)

COORD	NUMBER	DEPTH	COLOUR
1600N			
3700E	430851	85	Gy
12.5	852	50	BR
25	853	80	Gy
37.5	854	50	BR
50	855	85	Gy/Br
62.5	856	50	BR
75	857	80	Br/Gy
87.5	858	50	WH
3800	859	75	Gy
12.5	860	40	Gy-WH
25	861	70	Gy/Wh
37.5	862	40	Gy/WH
50	863	80	Gy/Wh
62.5	864	50	BR
75	865	70	Gy/Wh
87.5	866	40	WH
3900	867	60	Gy
12.5	868	30	WH
25	869	60	Gy
37.5	870	30	Gy-WH
50	871	80	Br/Gy
62.5	872	40	WH
75	873	80	Gy/Br
87.5	874	40	Gy
4000	875	60	Br/Gy
12.5	876	No sample - roots	
25	877	50	Wh/Gy
37.5	878	No sample Ground Hard	

COORD	NUMBER	DEPTH	COLOUR
50	879	40	Wh/Gy
62.5	880	60	Gy
75	881	85	Gy/Wh
87.5	882	50	OR
4100	883	80	Gy/Br
12.5	884	40	Gy
25	885	15	Gy/Wh
37.5	886	40	OR-Gy
50	887	70	Gy/Or
62.5	888	40	Gy
75	889	75	Or/Gy
87.5	890	50	Gy
4200	891	60	Br/Gy
12.5	892	No sample - roots	
25	893	80	Br/Gy
37.5	894	50	YL
50	895	70	Or/Br
62.5	896	50	BR
75	897	80	Br/Gy
87.5	898	60	YL
4300	899	75	Br/Or
12.5	900	40	OR-BR
25	901	80	Br
37.5	902	40	OR-Gy
50	903	55	Br/Or
62.5	904	30	OR-BR
75	905	50	Br/Or
87.5	906	40	OR-BR
4400	907	sample.	

EXIST

Cu Pb Zn Ag Au Ba As Cr Ti Zr

LICENCE: ~~Hellyer~~ MACK E.L 1600N 2/2.

PROJECT: Sth. Hatfield Infill. SAMPLED BY: 3

COORD	NUMBER	DEPTH	COLOUR
1600N			
4412.5E	430908		
25	909	40	Or
37.5	910		
50	911	40	Or/Br
62.5	912		
75	913	60	Or/Rd
87.5	914		
4500	915	40	Or
12.5	916		
25	917	30	Or/Br
37.5	918		
50	919	70	Gy
62.5	920		
75	921	30	Br/Gy
87.5	922		
4600	923	30	Gy/Bl
12.5	924		
25	925	60	Gy
37.5	926		
50	927	50	Or/Br
62.5	928		
75	929	60	Or/Br
87.5	930		
4700	931.	30	Or

COORD	NUMBER	DEPTH	COLOUR

LICENCE: ~~HELLYER~~ MACK E.L.

PROJECT: South Hatfield Infill

SAMPLED BY: (3)

2000N

1/2

COORD	NUMBER	DEPTH	COLOUR
2000	NORTH		
3700E	430932	30	OR-BR
	430933		
3725E	430934	No sample taken - roots + rocks	4
	430935		
3750 E	430936	30	WH
	430937		
3775E	430938	30	BR-WH
	430939		
3800 E	430940	40	GY-WH
	430941		
3825 E	430942	30	GY-WH
	430943		
3850 E	430944	50	GY-WH
	430945		
3875 E	430946	60	GY
	430947		
3900 E	430948	40	GY-BR
	430949		
3925 E	430950	40	GY
	430951		
3950 E	430952	40	GY-OR
	430953		
3975 E	430954	50	GY-BR
	430955		
4000 E	430956	40	GY-BR
	430957		
4025 E	430958	30	GY
	430959		

COORD	NUMBER	DEPTH	COLOUR
4050E	430960	50	WH
	430961		
4075 E	430962	50	GY-WH
	430963		
4100 E	430964	40	GY-BR
	430965		
4125 E	430966	50	GY
	430967		
4150 E	430968	40	OR-BR
	430969		
4175 E	430970	60	OR-BR
	430971		
4200 E	430972	50	GY-OR-BR
	430973		
4225 E	430974	60	OR-WH
	430975		
4250 E	430976	50	BR
	430977		
4275E	430978	50	GY-OR
	430979		
4300 E	430980	40	GY
	430981		
4325 E	430982	60	GY
	430983		
4350 E	430984	50	GY
	430985		
4375 E	430986	30	GY-BR
	430987		
4400 E	430988	30	OR-WH

649229

229

LICENCE: ~~HELLIER~~ Mak E.L.

PROJECT: South Hatfield Infill

SAMPLED BY: (3)

2000 N 2/2

COORD	NUMBER	DEPTH	COLOUR
2000	NORTH		
4412	430989		
4425E	430990	70	BR
	430991		
4450E	430992	No sample Taken ~2nd horizon ~ depth >1m	4
	430993		STD
4475E	430994	40	OR-GY
	430995		
4500E	430996	90	OR
	430997		
4525E	430998	50	WH-OR
	430999		
4550E	431000	80	OR
	515001		
4575E	515002	80	BL-GY
	515003		
4600E	515004	40	BL-OR
	515005		
4625E	515006	70	OR-GY
	515007		
4650E	515008	50	OR-GY
	515009		
4675E	515010	70	GY
	515011		
4700E	515012	80	BL-GY

COORD	NUMBER	DEPTH	COLOUR

649230

LICENCE: ~~HELLYER~~ MAKK E.L.
PROJECT: South Hatfield Infill
SAMPLED BY: (3)

2400 N
1/1

COORD	NUMBER	DEPTH	COLOUR
2400	NORTH		
4200E	515013	40	BR
	515014		
4225E	515015	30	BR
	515016		
4250E	515017	No sample - rock outcrop	4
	515018		
4275E	515019	30	BR-GY
	515020		
4300E	515021	40	OR-BR
	515022		
4325E	515023	50	GY-OR
	515024		
4350E	515025	90	GY
	515026		
4375E	515027	30	GY
	515028		
4400E	515029	50	GY-OR
	515030		
4425E	515031	60	GY-OR
	515032		
4450E	515033	50	GY-BR
	515034		
4475E	515035	50	GY-OR
	515036		
4500E	515037	60	GY

COORD	NUMBER	DEPTH	COLOUR

649231

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(3)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.06012

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5624	

DATE RECEIVED	RESULTS REQUIRED
10/02/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
8	27/02/89	1	95

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SO	Prep: 016						Cu,Pb,Zn,Ag/101,As/114		
	Various	SO							Ba,Cr,Ir,Ti/401,Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

SOUTH HAT.
INFILL SOILS.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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649222

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	1 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430851	5	15	45	<0.5	<0.008	490	2	30	250
2	430853	<5	<5	30	<0.5	<0.008	390	2	<5	290
3	430855	<5	<5	25	<0.5	<0.008	580	2	15	280
4	430857	<5	<5	25	<0.5	<0.008	530	1	<5	270
5	430859	<5	5	30	<0.5	<0.008	560	1	<5	260
6	430861	5	<5	20	<0.5	<0.008	500	2	10	280
7	430863	<5	<5	25	<0.5	<0.008	480	2	<5	280
8	430865	5	<5	20	<0.5	0.010	290	2	15	290
9	430867	<5	<5	20	<0.5	<0.008	240	1	<5	290
10	430869	10	<5	25	<0.5	<0.008	270	5	20	300
11	430871	<5	<5	25	<0.5	<0.008	280	2	<5	280
12	430873	<5	<5	25	<0.5	<0.008	310	2	30	260
13	430875	<5	<5	25	<0.5	<0.008	620	1	<5	190
14	430877	<5	<5	15	<0.5	<0.008	150	1	25	250
15	430879	<5	<5	20	<0.5	<0.008	340	1	<5	320
16	430881	<5	<5	25	<0.5	<0.008	430	1	30	250
17	430883	20	<5	95	<0.5	<0.008	290	10	210	200
18	430885	5	<5	30	<0.5	0.010	260	2	30	280
19	430887	<5	<5	35	<0.5	<0.008	260	3	25	320
20	430889	<5	<5	30	<0.5	0.032	250	2	10	320
21	430891	<5	<5	15	<0.5	<0.008	380	1	<5	320
22	430893	5	<5	40	<0.5	<0.008	400	4	20	260
23	430895	5	<5	45	<0.5	<0.008	350	6	15	270
24	430897	<5	5	60	<0.5	<0.008	390	7	25	230
25	430899	20	10	110	<0.5	<0.008	320	14	60	260

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649233

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	2 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430901	5	<5	45	<0.5	<0.008	240	9	45	310
2	430903	10	10	45	<0.5	<0.008	250	9	50	310
3	430905	20	20	130	<0.5	0.013	360	16	75	320
4	430907	20	25	150	<0.5	<0.008	390	16	75	320
5	430909	10	20	45	<0.5	<0.008	170	7	45	340
6	430911	10	15	40	<0.5	<0.008	380	9	55	330
7	430913	10	10	40	<0.5	<0.008	120	4	30	280
8	430915	10	10	35	<0.5	<0.008	210	6	35	280
9	430917	10	15	50	<0.5	<0.008	320	8	35	270
10	430919	10	10	75	<0.5	<0.008	570	4	35	250
11	430921	<5	<5	25	<0.5	<0.008	270	5	25	270
12	430923	<5	<5	15	<0.5	<0.008	260	2	50	310
13	430925	<5	<5	15	<0.5	<0.008	90	1	490	260
14	430927	15	<5	45	<0.5	<0.008	360	3	60	220
15	430929	15	<5	40	<0.5	<0.008	330	3	65	210
16	430931	20	<5	50	<0.5	<0.008	680	2	75	200
17	430932	10	<5	30	<0.5	<0.008	380	4	35	290
18	430934 4 * SD	25	180	170	<0.5	<0.008	650	92	30	240
19	430936	<5	<5	15	<0.5	<0.008	170	1	380	250
20	430938	<5	<5	15	<0.5	<0.008	160	1	360	280
21	430940	<5	<5	20	<0.5	<0.008	370	1	390	290
22	430942	<5	<5	15	<0.5	<0.008	110	2	15	270
23	430944	<5	<5	15	<0.5	<0.008	200	1	540	290
24	430946	<5	<5	25	<0.5	<0.008	560	<1	210	250
25	430948	<5	<5	20	<0.5	<0.008	270	<1	5	300

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	3 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	430950	<5	<5	20	0.5	<0.008	430	1	240	270
2	430952	<5	<5	25	<0.5	<0.008	360	2	150	290
3	430954	<5	<5	25	<0.5	<0.008	270	1	280	270
4	430956	<5	<5	30	<0.5	<0.008	420	3	300	260
5	430958	<5	<5	20	<0.5	<0.008	580	1	260	340
6	430960	<5	<5	20	<0.5	<0.008	620	1	880	360
7	430962	<5	<5	20	<0.5	<0.008	690	2	1150	340
8	430964	<5	5	35	<0.5	<0.008	720	3	1250	340
9	430966	<5	<5	25	<0.5	<0.008	660	2	1150	370
10	430968	<5	<5	30	<0.5	<0.008	570	3	1200	350
11	430970	5	<5	40	<0.5	<0.008	520	8	1300	360
12	430972	5	10	30	<0.5	<0.008	340	7	230	280
13	430974	<5	125	30	<0.5	<0.008	260	8	550	220
14	430976	10	5	35	<0.5	<0.008	460	9	850	410
15	430978	<5	<5	30	<0.5	<0.008	680	7	540	380
16	430980	<5	<5	20	<0.5	<0.008	430	6	45	260
17	430982	<5	<5	15	<0.5	<0.008	310	1	20	270
18	430984	<5	<5	15	<0.5	<0.008	190	2	30	200
19	430986	<5	<5	20	<0.5	<0.008	360	11	25	170
20	430988	15	<5	20	<0.5	<0.008	230	6	35	200
21	430990	20	10	65	<0.5	<0.008	590	9	50	220
22	430992 4 *STD	25	190	165	<0.5	<0.008	660	90	25	240
23	430994	5	<5	30	<0.5	<0.008	310	10	40	180
24	430996	25	10	165	<0.5	<0.008	430	15	95	260
25	430998	5	<5	20	<0.5	<0.008	280	4	130	270

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	4 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	431000	<5	<5	20	<0.5	<0.008	330	8	210	220
2	515002	<5	<5	35	<0.5	<0.008	340	6	200	230
3	515004	<5	<5	15	<0.5	<0.008	290	4	170	250
4	515006	5	<5	25	<0.5	<0.008	370	6	230	210
5	515008	<5	<5	20	<0.5	<0.008	280	4	200	260
6	515010	10	<5	20	<0.5	<0.008	310	2	260	240
7	515012	5	<5	25	<0.5	<0.008	370	3	120	200
8	515013	5	35	105	<0.5	<0.008	710	5	40	250
9	515015	<5	85	35	<0.5	<0.008	540	5	15	260
10	515017 4 * SD	30	190	170	0.5	0.011	660	86	30	240
11	515019	<5	<5	25	<0.5	<0.008	400	3	100	250
12	515021	<5	<5	25	<0.5	<0.008	390	4	150	230
13	515023	<5	<5	25	<0.5	<0.008	340	5	130	240
14	515025	<5	<5	30	<0.5	<0.008	340	4	140	220
15	515027	<5	<5	20	<0.5	<0.008	400	4	130	300
16	515029	<5	<5	20	<0.5	<0.008	290	3	190	230
17	515031	5	<5	30	<0.5	<0.008	460	6	130	240
18	515033	5	<5	25	<0.5	<0.008	350	6	280	230
19	515035	<5	<5	20	<0.5	<0.008	310	2	230	220
20	515037	<5	<5	15	<0.5	<0.008	210	1	200	190
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	5 OF 8

TUBE No.	SAMPLE No.	Ti								
1	430851	2850								
2	430853	2250								
3	430855	2550								
4	430857	1950								
5	430859	2950								
6	430861	2700								
7	430863	2700								
8	430865	2500								
9	430867	2700								
10	430869	2800								
11	430871	2800								
12	430873	2500								
13	430875	1400								
14	430877	2500								
15	430879	3000								
16	430881	3300								
17	430883	4950								
18	430885	2500								
19	430887	3400								
20	430889	2850								
21	430891	2800								
22	430893	2200								
23	430895	2650								
24	430897	2600								
25	430899	3200								

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649237

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	6 OF 8

TUBE No.	SAMPLE No.	Ti								
1	430901	3800								
2	430903	3850								
3	430905	4150								
4	430907	4150								
5	430909	3450								
6	430911	4850								
7	430913	4150								
8	430915	4250								
9	430917	3950								
10	430919	2900								
11	430921	2200								
12	430923	3250								
13	430925	3150								
14	430927	5400								
15	430929	5450								
16	430931	5400								
17	430932	3500								
18	430934 X	3850								
19	430936	2750								
20	430938	3550								
21	430940	3100								
22	430942	4650								
23	430944	3500								
24	430946	2100								
25	430948	2550								

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649238

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	7 OF 8

TUBE No.	SAMPLE No.	Ti
1	430950	2400
2	430952	2900
3	430954	2400
4	430956	1950
5	430958	3900
6	430960	3300
7	430962	3300
8	430964	3250
9	430966	3800
10	430968	4000
11	430970	4700
12	430972	3900
13	430974	4200
14	430976	5650
15	430978	5200
16	430980	4200
17	430982	4350
18	430984	3600
19	430986	2650
20	430988	3400
21	430990	3400
22	430992 X	3950
23	430994	3050
24	430996	4350
25	430998	4200

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649239

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06012	27/02/89	5624	8 OF 8

TUBE No.	SAMPLE No.	Ti								
1	431000	3500								
2	515002	3500								
3	515004	3500								
4	515006	3700								
5	515008	3550								
6	515010	3800								
7	515012	3900								
8	515013	3600								
9	515015	5150								
10	515017 X	4000								
11	515019	3200								
12	515021	3050								
13	515023	3100								
14	515025	2850								
15	515027	3600								
16	515029	3600								
17	515031	2850								
18	515033	3650								
19	515035	3650								
20	515037	3800								
21										
22										
23	DETECTION	50								
24	UNITS	PPM								
25	METHOD	401								

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649240

APPENDIX 18.

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649242

PROJECT : Mackintosh

PROSPECT: Boundary

HOLE NO : MAC 16

PAGE : 1 of 4

LOGGED : A MCN

DATE : 3-5-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
0			Rhyodacitic lava	white-cream-orange, generally massive feldspar-minor quartz-phyric lava.		0.5 / 1.0 } barite + quartz + pyrite vn.			L(h 1-3) O(1)		36 HW HQ	
4						4.4						
6						Q vn (1-2)		6.2 fault breccia.				
8				8.4 brecciated with fe oxide stained filling.	7.25 / 7.75 / 8.5 } grey alteration & sericitized feldspar. - alteration surrounding pyrite veins.	9.1 / 9.2 / 9.7 }						
10								10.7 / 11.4 } broken rubbly core + fault				
12				12.9 brecciated with fe oxide stained filling.								
14				khaki: rhyodacite to dacite lava. feldspar phyric brecciated in part, cemented with iron oxide stained material		Py vn (1-2)			L(h 3)			
16				Pk-brown, feldspar-phyric, Rhyodacitic lava minor chlorite veins + brecciation.		Q + Mn stained vn. (1-2)						
18						20.1 Q + Mn vn (2-3)		21.1 / 21.4 } iron fault zone				
20				20.4 Mottled pink-green massive lava with pink feldspar phenocrysts.	Sil (2-3)			20.6 fault. fACa = 30°				
22				22.4 Pink-brown Rhyodacitic lava with pink feldspar Phenocrysts and chlorite patches.		Q + surrounding k-feldspar alteration (1-2)						
24								24.4 fault fACa = 50°				
26												
28												
30												
32				32.4 grey-white feldspar phyric Rhyodacitic lava	Sil (2-4)	Q vn (1-2) + Q + kfs vn (1)						
34				34.4 mottled green-brown rhyodacitic lava. minor brecciation				broken core				
36												
38												
40												
42												

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649243

PROJECT : Mackintosh

PROSPECT: Boundary

HOLE NO: 242 MAC 6

PAGE: 2 of

LOGGED: J.MN

DATE: 3-5-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				Dark green matrix, feldspar phyric & angular 'red fragments'		Q + k.fd. (1-3)						
44			Volc.	↑ Gradational								
46			Volcaniclastic	Red-pink siliceous banded feldspar phyric volcaniclastic with sub-angular chloritic patches. weakly developed devitrification textures. Common grey-pink lava fragments	Si 3-4.			44.6 banding at 30° to Ca. 46.1 banding at 70° to Ca			46.2 Petrology 428277 "Altered clastic breccia" - flow brecciated rhyolite. Quartz-albite-crystal tuff.	
48												
50												
52											52.7 HQ NQ 52.4 Petrology 428255 "Altered clastic tuff - lava" - welded + flow brecciated tuff.	
54												
56			56.4	← Gradational contact.								
58			Rhyodacitic lava	Light pink - dark pink massive lava with feldspar and minor quartz phenocrysts. chlorite spots. Sericite and chlorite coat fracture surfaces.		Q+chl Va. (1-2)						
60												
62												
64												
66												
68												
70												
72												
74												
76												
78												
80												
82												
84												

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649244

PROJECT : Mackinlay

PROSPECT : Boundary

HOLE NO : 243

PAGE : 3 of

LOGGED : AHN

DATE : 5-6-19

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
96												
98												
100												
102												
104												
106												
108												
110												
112												
114												
116												
118			Rhyolitic lava	Pink-red lava with chlorite spots								
120												
122												
124												

244

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649245

PROJECT : Machinish

PROSPECT : Boundary

HOLE NO : MAC 16
PAGE : 4 of 5
LOGGED : A HEN
DATE : 3-5-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				green feldspar-pyric volcanic								
152.4			Dacitic lava.	green feldspar-phyric Dacitic lava		Qtzchl (1-2)						
152.1			Rhyodacitic lava	brown-green groundmass feldspar-phyric lava with minor pink alteration.		Qtzchl vn (1-2)		156.5 10 cm wide fault at 25° to C.a.				
160.4 / 160.8				bedded pink-green lava.				160.75 flow banding A.C.a 60°				
				grey to pink feldspar phyric lava	Sil 3-5	Qtzchl vn (1-2)						
							166 / 169.1 trace terminated native Cu in microfissures	165.8 flow banding at 60° to c.a.				
152.2			Dacitic lava	dark green feldspar-phyric lava c rounded pink-brown devitrification textures. by 153.3m = green-brown colour	Chl 3, Sil (1-2) / chl (1-2) Sil. (3-4).		grey silicification + py (2-3)	157.3 fault pug. / 160.1 2cm of fault gouge fault at 55° to C.a.			156.6 Petrology 070259 "Amygdaloidal trachyandesite" – weak flow structure.	
				163.4 green-pink lava, brecciated in parts, with rounded devitrification structures.	Sil 2-3, Chl 1.			163.1 fault breccia fault at 55° to C.a. / 165 banding at 70° to C.a.				
				167.1 brecciated green-grey lava with feldspar-phyric chlorite patches in groundmass.	Sil 2-3							

245

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649246

PROJECT : Mackintosh

PROSPECT : Boundary.

HOLE NO : MAC 16

PAGE : 5 of 2

LOGGED : A.HUN

DATE : 16-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
169			Rhyodacite lava.									
170				170 Green-brown, feldspar phyric lava with irregular chloritic patches (Feldspar phyric) weakly brecciated + devitrified	S1(2)							
171												
172.1			volcaniclastic.	Gradational Contact.								
174												
176												
178												
180												
182				Mottled Pink-green volcanic with a chloritic feldspar phyric, devitrified matrix. fragments of Pink-green silicified lava and some fine grained interbeds.				182.5 fine grained unit bedding = 90° to CA				
184												
186						187 Q+cl (1-2) Q (2). 187						
188												
190												
192												
194											193.4m. Petrology - 428260 "Altered dacitic Breccia" - probably a flow-brecciated welded tuff.	
196						197.2 Q+cl (1-2)						
198								196.2 fault 3cm Pug+breccia 197.9 bedding = 70 to CA.				
200				Pink lava fragments to 6 cm diameter, silicified.	S1(1-2).			200.4 Fault Pug.				
202						202.4 Q+kfd (1-2)						
204								204.4 finer sam bedding 65° to CA.				
206						206.6 Q+Ma (2) to 1cm wide		206.6 } Fault Zone 207 } broken core.				
208					S1(2-3).							
210												

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649247

PROJECT : Mackintosh
PROSPECT : Boundary

HOLE NO : 246
PAGE : 3 of 4
LOGGED : A.K.N.
DATE : 1-6-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			volcaniclastic	225 fine grained chloritic interbed. 224.4	Si. (2-3).	Qtz+Cl.+kfd (2). 224.9 Py (1-2). 224.4 Qtz+Cl.+kfd. (1-2)		224.4 Contact = 60° to CA				
			223.6 Altered volcanic.	Massive dark-green volcanic	Si (3-4). kfd (2). cl (1-2).			225.6 Fault = 70° to CA. 227.3 Shd (1-2) S_1 = 25° to CA.				
				229.6 brown-green volcanic	Si (3-4). pat kfd (2) pat. Si (1). Cl. (1-2).							
					Se (2-3). kfd. (2) Si (3-4). Cl (1) MAT Manganese	232.4 Increase concentration of Anastomosing Qtz vn. 231.6 pass into massive Qtz vein.		231.6 Contact = Qtz vn = 75° To CA.				235.6
		30%	235.6 Quartz Vein	White-grey Quartz vein with Manganese film on fractures. brecciated in part with Manganese and iron oxide cement. Patches of Light green Sericite.			Cpy (1-2). Py (tr.) Sp (tr.) Chalcocite (1-2). Malachite (tr.) Chalcocite rims Cpy.				(CEMENTED)	
		55%										
		90%										
		96%										244.4
		85%										

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649248

PROJECT : Mackintosh

PROSPECT : Boundary

HOLE NO : MAC 16

PAGE : 7 of 9

LOGGED : A.McK.

DATE : 1-6-85

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
152			Quartz vein.	As Above.			As Above.					
154												
156		RQD										
158												
			158.2									
			NO CORE - Terminated.									
160		100%										
162												
			164.2									
164			Quartz vein.	White-grey Quartz vein with patches of Sericite, Possibly after highly altered volcanic. bx in places with manganese filling			tr Cpy, Sp, Py, chalcosite.					
166												
			167									
168			Altered volcanic.	Pink-green, feldspar phyric volcanic	Se (3-4). Si (2).	Q. (3-4)	tr Cpy, Py, chalcosite. in veins					
			169									
170				Green feldspar phyric volcanic.	Se (3-4). ± Pat Si (3-4)	Q + Mb (3-4)						
172												
174						174.48 Qtz. ± tr Sp + chalcosite.						
			174.5									
176			Quartz vein.	White-grey Quartz vein with green Se patches. Minor Manganese.			Cpy (1-3). rimmed by chalcosite. Native Copper in microfissures.					
			177									
178			Altered lava?	Green massive feldspar-phyric volcanic.	Se (2-3). Si (3).	Q (2-3) ± tr Sp. tr native Cu. + Cpy (1-2).						
180								Fault Contact ≈ 20° to CA				
			181									
182			Rhyodacite lava.	green-pink feldspar + minor Quartz phyric lava.	Si (1-2).	thin anastomosing Q + tr fd (2-3), and thicker Q + Cpy (1) + tr fd (1-2).						
184												
186						Q + tr cl. + tr rg. (2-3).	186.4 tr Py.					
188												
190				Pink-brown. massive. devitrified lava.	Si (1-2)							
192												
194												

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Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649249

PROJECT : Mackintosh

PROSPECT: Boundary

HOLE NO : MAC 16

PAGE: 8 of 9

LOGGED: A.M.N.

DATE : 1-6-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296			Rhyodacite lava	as above								
298												
300								Fault = 35° to CA.				
302				Green-pink. feldspar + Quartz phyric. massive, variably devitrified lava. minor chlorite patches.		Qtz + Cl (tr) + Cpy (tr) + Pyr (tr) (1-2).	tr disseminated Py associated with chlorite patches.					
304												
306												
308												
310												
312												
314												
316												
318												
320												
322						Earlier Qtz is cut by later Qtz-Cl + kfd. veins.						
324				"			"					
326												
328												
330												
332												
334				Green feldspar phyric lava.	Si (2)							
336								Lith: flow band = 50°-60°				

Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

649250

PROJECT : Mackintosh

PROSPECT: Boundary

HOLE NO: MAC 16

PAGE: 9 of 9

LOGGED: A.McN.

DATE: 1-6-88

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
337			Rhyodacitic lava	green, feldspar phyric, massive, lava.	Si (2)							
340			340.4			Q+kfd + tr py vn cut by later 99-90 Q vn.						
342			Volcaniclastic	Dark Green feldspar phyric lava. devitrified. brecciated in part with pink lava fragments	Si (1-2)	Q+kfd+cl. (1-2)						
346												
348				mottled Pink-green with feldspar phyric chloritic Clots + Patches of grey silicification and Pink lava fragments	Si (1-2)	Q+cl. (1-2). Q (1-2).	tr sp.					
350												
352												
354				Mottled Pink-green volcaniclastic with no obvious lava fragments.	Si (1-2).	Q+cl. + kfd. (1-2) Q+cl. + tr. py (1-2).						
356												
358												
360				As above - Altered lava?	Si (1)	Q+cl + tr. py (1-2)	py (1-2) associated with chlorite					
362												
364												
366												
368			367.4 EOH									
370												
372												

APPENDIX - MAC 16

Sample No.	Depth	Description
428256	52.9	Dacitic volcaniclastic
428257	46.2	Dacitic volcaniclastic - eutaxitic?
428258	102.6	Rhyodacitic lava
428259	156.0	Devitrified dacitic lava - patch of alteration
428260	193.4	Volcaniclastic - eutaxitic?

649252

251

Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

12th September, 1988

REPORT CMS 88/6/37

YOUR REFERENCE:	Letter dated 22.6.1988
DATE RECEIVED:	28th June, 1988
SAMPLE NOS.:	428256 - 428260
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/6/37

Five slabbed drill core samples from DDH MAC-16 at the Boundary prospect were received for routine petrological examination. Representative thin sections were prepared and examined together with respective offcuts, with stain tests performed as warranted. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

As sampled, this suite represents altered dacitic volcanics flanking an andesitic to trachyandesitic unit represented by samples 428258 and 428259 (MAC-16/102.6 m and 156.0 m, respectively).

Dacites are typically flow-brecciated types, with some evidence of a flow-brecciated ignimbritic mode of origin, although much of the finer detail is obscured by alteration effects.

The andesitic unit is possibly intrusive in part, specifically the relatively coarse-grained and texturally homogeneous 428258 sample. Pyritic mineralisation is associated with discontinuous, weakly chloritic quartz veinlets and sericitic microfractures in the 428259 (trachy)andesite. Alteration assemblages are noted in the individual descriptions.

D. Cowan, B. Sc.

SAMPLE NO.: 428256 (T.S. 60250)

CLASSIFICATION: **Altered Dacitic Tuff Lava**

COMPOSITION: Frequent albitised/weakly sericitised plagioclase-, minor variably corroded quartz phenocrysts in a matrix of partly degraded/kaolinised sericite, with varying proportions of anhedral fine to microcrystalline quartz. Minor spongy clots of chlorite and partly degraded "montmorillonitic" clay. Conspicuous leucoxenic semi-opaques.

FABRIC: Flow-structured and brecciated porphyritic, semi-felsitic with flow-orientated sub- to fine millimetric-scale lava clasts in a texturally similar matrix (hence tuff lava). Locally vaguely relict eutaxite-like on a microscale. Incipiently sheared.

ACCESSORIES: Minor traces of apatite, rare montmorillonite-chlorite-pseudomorphed ferromagnesian (?amphibole) microphenocrysts. Extremely rare feldspar-replacive clots of fibrous zoisitic epidote.

INTERPRETATION/ COMMENTS: An argillised/partly silicified felsic intermediate-acid flow breccia with dacitic compositional characteristics. This rock is clastic lava-like, but may represent a thoroughly welded and flow-brecciated tuff (vitric-crystal) on vague relict microtextural grounds.

SAMPLE NO.: 428257 (T.S. 60251)

CLASSIFICATION: **Altered Dacitic "Breccia"**

COMPOSITION: Disseminated to frequent variably sericitised and extensively degraded/kaolinised feldspar phenocrysts and crystals fragments, relatively quite minor corroded quartz phenocrysts in a matrix of semi- to sericitic partly degraded (illitic, to kaolinitic, variably Fe-stained) white mica with varying proportions of felsitic-anhedral quartz.

FABRIC: Random to semi-flow-structured, moulded, psammite to lapilli grade lithoclastic. Featureless to distinctly microshardy/ contorted eutaxitic matrix in individual clasts, partly obscured by felsitic devitrification. Incipiently sheared.

ACCESSORIES: Conspicuous leucoxenised opaques. Secondary limonitic stainings and minor films of Mn-oxide. Rare oxidised pyrite. Rare zircon and monazite.

INTERPRETATION/ COMMENTS: An altered dacitic flow breccia with affinities to 428256; coarser lithoclastic structures and relatively diagnostic flow-brecciated welded-tuffaceous features. Reasonably interpreted as a flow-brecciated ignimbritic lithic-vitric-crystal tuff.

SAMPLE NO.: 428258 (T.S. 60252)

CLASSIFICATION: **Amygdaloidal Andesite**

COMPOSITION: Albitised/sericite-montmorillonite-stained plagioclase phenocrysts and phenocrystal clusters, subordinate chloritic montmorillonite semi-pseudomorphed ferromagnesian (amphibole, pyroxene) phenocrysts and microphenocrysts, disseminated quartz amygdales and micro-amygdales. Groundmass of Fe-pigmented, weakly argillised (kaolinitic) albite microlaths with subordinate chloritised amphibole laths and a semi-pervasive quartz mesostasis.

FABRIC: Porphyritic/trend glomeroporphyritic, weakly amygdaloidal with a fine/trend medium-grained random semi-felted lathic groundmass.

ACCESSORIES: Leucoxenised opaques, traces of apatite.

INTERPRETATION/ COMMENTS: A texturally homogeneous andesitic/trend quartz-andesitic phase with textural features suggestive of a minor intrusive mode of origin; alternately, may represent the core zone of a relatively thick flow. Moderately chlorite-clay-altered, enhanced by mild weathering effects.

SAMPLE NO.: 428259 (T.S. 60253)

CLASSIFICATION: **Amygdaloidal Trachyandesite**

COMPOSITION: Albitised/weakly sericitic plagioclase phenocrysts, relatively quite minor chlorite-montmorillonite pseudomorphs after ferromagnesian phenocrysts and microphenocrysts, sporadic quartz amygdales in a groundmass of albite microlaths and microlites with a K-feldspathic mesostasis. Sporadic discontinuous weakly chloritic quartz veinlets and sericitic microfractures. Disseminated extensively oxidised pyrite (mean 750 um).

FABRIC: Porphyritic, amygdaloidal, weakly flow-structured/subtrachytic. Very incipient post-veining stress effects.

ACCESSORIES: Irregular Fe-stainings partly controlled by late limonitic microfractures. Leucoxenised opaques, minor traces of apatite.

INTERPRETATION/ COMMENTS: Similarities with 428258, but distinctly finer-grained, lava-like and trachyandesitic in comparison. Finer detail obscured by irregular zones of secondary Fe-staining. Pyrite partly controlled by quartz veinlets and semi-contemporaneous sericitic microfractures. The host rock is only mildly chlorite-clay-altered.

SAMPLE NO.: 428260 (T.S. 60254)

CLASSIFICATION: **Altered Dacite Breccia**

COMPOSITION: Phenocrysts and phenocrystal clusters of oligoclase-albite, relatively minor quartz microphenocrysts in a matrix of very fine to microcrystalline albite with subordinate/variable proportions of microcrystalline quartz and semi-pervasive microscopic intergranular clots of chlorite.

FABRIC: Psammite to lapilli grade, moulded lithoclastic, with porphyritic lava-like to vaguely relict eutaxitic clasts.

ACCESSORIES: Rare leucoxenic anatase-stained chlorite pseudomorphs after microphenocrystal ferromags. Traces of K-feldspar. Disseminated leucoxenic semi-opaques.

INTERPRETATION/ COMMENTS: This rock is broadly similar to 428256 and particularly 428257. In contrast, it exhibits a chloritic alteration assemblage with subsequent irregular replacive zones of weakly Fe-pigmented microcrystalline albite. Tuff lava-like, but probably a flow-brecciated welded tuff.

SAMPLE NO.:

CLASSIFICATION:

COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

256

649257

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05544

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3828	

DATE RECEIVED	RESULTS REQUIRED
23/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	12/07/88	1	5

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	428256/60	SC Prep: 006,010,011,012,013,016							Cu,Pb,Zn,Ag/101,As/114		
	428256/60	SC							Ba,Cr,Zr,Ti/401,Au/309		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAC-16 PETROLOGY

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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649258

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05544	12/07/88	3282	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	428256	<5	<5	45	<0.5	<0.008	1200	2	45	290
2	428257	5	5	140	<0.5	<0.008	1800	2	30	330
3	428258	<5	5	55	<0.5	<0.008	1300	1	5	210
4	428259	5	10	45	<0.5	0.011	1650	10	25	210
5	428260	<5	<5	20	<0.5	<0.008	520	2	<5	250
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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258

649259

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05544	12/07/88	3282	2 OF 2

TUBE No.	SAMPLE No.	Ti
1	428256	2100
2	428257	2200
3	428258	2150
4	428259	1850
5	428260	1600
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23	DETECTION	50
24	UNITS	PPM
25	METHOD	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649260

APPENDIX 19.

649261

PAGE OF

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No.

DATE

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	428217	0 - 13.7m			49	310.4 - 316.4		
2	18	13.7 - 22.4			50	316.4 - 320.4		
3	19	22.4 - 32.2			51	320.4 - 330.4		
4	20	32.2 - 37.3			52	330.4 - 340.4		
5	21	37.3 - 48.1			53	340.4 - 349.0		
6	22	48.1 - 55.4			~~[illegible]~~	~~[illegible]~~		
7	23	55.4 - 65.4			~~[illegible]~~	~~[illegible]~~		
8	24	65.4 - 75.4			54 ~~[illegible]~~	349 - 355.4		
9	25	75.4 - 85.4			55 ~~[illegible]~~	355.4 - 367.4		
10	26	85.4 - 95.4						
11	27	95.4 - 105.4						
12	28	STD	* STD 4					
13	29	105.4 - ~~[illegible]~~ 116.7						
14	30	116.7 ~~[illegible]~~ - 126.7						
15	31	126.7 - 133.4						
16	32	133.4 - 140.3						
17	33	140.3 - 152.1						
18	34	[illegible]						
19	35	163.4 - 168						
20	36	168 - 178.4						
21	37	178.4 - 188.4						
22	38	188.4 - 198.4						
23	39	198.4 - 208.6						
24	40	208.6 - 218.4						
25	41	218.4 - 228.4						
26	42	228.4 - [illegible]						
27	43	238.6 - 248.4						
28	44	248.4 - 258.8						
29	45	258.8 - 270.0						
30	46	270.0 - 280.4						
31	47	280.4 - 290.4						
32	48	290.4 - 300.4						

649262

08 JUL REC'D

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 FAX: 004 31 8890 | Telex AA92560

ANALYTICAL REPORT No. 23.3.08.08539

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3823	

DATE RECEIVED	RESULTS REQUIRED
20/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	07/07/88	1	39

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	428217/55	CG							Cu,Pb,Zn,Ag,Mn/101,As/114		
	428217/55	CG							Ba,Cr,Zr,Ti,Y/401,Au,AuChk/309,Sb/117		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAC-16
CORE GRINDING

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05539	07/07/88	3823	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Mn	Ba	As	Cr
1	0-13.9 428217	20	75	310	0.5	<0.008	190	2500	27	6
2	13.9-22.4 428218	15	35	535	<0.5	<0.008	2050	1300	6	25
3	22.4-32.2 428219	15	50	670	<0.5	0.015	1025	1400	5	5
4	32.2-37.3 428220	10	55	765	<0.5	<0.008	955	1100	4	15
5	37.3-48.1 428221	15	75	600	<0.5	<0.008	1150	1900	4	5
6	48.1-55.4 428222	30	25	95	<0.5	<0.008	325	1150	1	25
7	55.4-65.4 428223	10	55	80	<0.5	<0.008	455	1150	2	15
8	65.4-75.4 428224	15	60	80	<0.5	<0.008	565	1250	1	30
9	75.4-85.4 428225	15	80	80	<0.5	<0.008	1000	1200	2	10
10	85.4-95.4 428226	15	65	90	<0.5	<0.008	825	1350	2	30
11	95.4-105.4 428227	10	50	80	<0.5	<0.008	645	1300	1	10
12	428228 ~~X~~ SD4	115	195	2250	<0.5	0.010	6700	1150	12	960
13	105.4-116.7 428229	20	55	90	0.5	<0.008	1200	1250	<1	10
14	116.7-126.7 428230	15	25	60	<0.5	<0.008	1100	1200	<1	8
15	126.7-133.4 428231	20	30	55	<0.5	<0.008	625	1150	<1	35
16	133.4-140.3 428232	20	35	55	<0.5	<0.008	295	1250	2	<5
17	152.1-155.3 428233	60	30	115	1.0	0.009	1850	1350	7	35
18	155.3-163.4 428234	20	50	70	<0.5	<0.008	475	1400	6	7
19	163.4-168 428235	260	50	70	<0.5	<0.008	355	1350	3	25
20	168-178.4 428236	30	40	60	0.5	<0.008	660	1300	1	25
21	178.4-188.4 428237	15	80	70	<0.5	<0.008	440	1250	2	15
22	188.4-198.4 428238	15	35	65	<0.5	<0.008	625	950	1	25
23	198.4-208.4 428239	15	45	85	<0.5	<0.008	1000	720	1	5
24	208.4-218.4 428240	15	35	75	<0.5	<0.008	845	540	1	20
25	218.4-223.4 428241	20	55	95	<0.5	<0.008	870	510	1	6

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05539	07/07/88	3823	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Mn	Ba	As	Cr
1	223·4-235·6 428242	35	40	150	<0.5	<0.008	750	420	1	25
2	235·6-245·4 428243	2000	45	200	<0.5	<0.008	365	230	6	10
3	245·4-252·8 428244	1100	20	240	<0.5	<0.008	1000	250	5	100
4	263·2-270 428245	500	50	110	<0.5	<0.008	135	240	1	6
5	270-280·4 428246	685	60	90	<0.5	<0.008	400	340	1	50
6	280·4-290·4 428247	90	60	40	<0.5	<0.008	655	760	1	<5
7	290·4-300·4 428248	90	40	60	<0.5	<0.008	540	1000	1	25
8	300·4-310·4 428249	50	60	55	<0.5	<0.008	850	1000	1	<5
9	310·4-320·4 428250	50	35	60	<0.5	<0.008	660	1350	1	25
10	320·4-330·4 428251	75	50	85	<0.5	<0.008	560	1550	<1	<5
11	330·4-340·4 428252	65	60	75	<0.5	<0.008	700	1050	<1	25
12	340·4-349 428253	20	45	60	<0.5	<0.008	795	540	<1	<5
13	349-355·4 428254	60	35	85	<0.5	<0.008	665	310	1	25
14	355·4-367·4 428255	25	40	60	<0.5	<0.008	880	460	<1	5
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	5	10	1	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	101	401	114	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05539	07/07/88	3823	3 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y	Sb	Zr/Ti				
1	428217	230	1550	35	1.6	0.148				
2	428218	290	2050	65	0.6	0.141				
3	428219	290	1950	50	1.0	0.149				
4	428220	340	2250	35	1.0	0.151				
5	428221	280	1850	40	0.6	0.151				
6	428222	290	1950	40	0.4	0.149				
7	428223	200	1900	45	0.4	0.105				
8	428224	210	2050	35	0.2	0.102				
9	428225	200	2200	40	<0.2	0.091				
10	428226	210	2100	40	<0.2	0.1				
11	428227	210	2100	45	0.2	0.1				
12	428228	80	2550	20	0.6	0.031				
13	428229	200	2000	35	0.2	0.1				
14	428230	260	1950	40	<0.2	0.133				
15	428231	280	1850	40	0.2	0.151				
16	428232	260	1900	35	0.2	0.147				
17	428233	210	1800	45	1.0	0.117				
18	428234	200	2000	45	0.2	0.1				
19	428235	250	1600	35	0.2	0.156				
20	428236	270	1750	40	0.4	0.154				
21	428237	300	1950	45	0.2	0.154				
22	428238	300	1900	40	<0.2	0.158				
23	428239	290	1750	40	0.4	0.166				
24	428240	280	1750	35	<0.2	0.16				
25	428241	280	1650	30	0.2	0.17				

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
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A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05539	07/07/88	3823	4 OF 4

TUBE No.	SAMPLE No.	Zr	Ti	Y	Sb	Zr/Ti				
1	428242	300	1800	40	0.2	0.166				
2	428243	80	460	25	9.4	0.174				
3	428244	10	70	20	5.4	0.143				
4	428245	160	950	10	<0.2	0.168				
5	428246	200	1250	20	<0.2	0.16				
6	428247	240	1400	25	<0.2	0.171				
7	428248	240	1500	25	<0.2	0.16				
8	428249	240	1350	35	<0.2	0.178				
9	428250	240	1450	35	<0.2	0.165				
10	428251	270	1600	35	<0.2	0.169				
11	428252	260	1500	35	<0.2	0.173				
12	428253	270	1500	35	<0.2	0.18				
13	428254	270	1650	40	<0.2	0.164				
14	428255	300	1750	40	<0.2	0.171				
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	50	3	0.2					
24	UNITS	PPM	PPM	PPM	PPM					
25	METHOD	401	401	401	117					

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
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MAC-16 SPLIT CORE

428201	140·3 - 140·7
2	140·7 - 141·7
3	141·7 - 142·7
4	142·7 - 143·6
5	143·6 - 144·5
6	144·5 - 145·5
7	145·5 - 145·7
8	145·7 - 146·2
9	146·2 - 146·7
10	146·7 - 147·3
11	147·3 - 147·9
12	147·9 - 148·5
13	148·5 - 149·5
14	149·5 - 150·5
15	150·5 - 151·6
428216	151·6 - 152·1

649268

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A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05416

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3090	

DATE RECEIVED	RESULTS REQUIRED
05/05/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	27/05/88	1	16

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	428201/16	SC	Prep: 010,011,012,013,016						Cu,Pb,Zn,Ag,Ni,Mn/101,As/114		
	428201/16	SC							Ba,Cr,Zr,Ti,Y/401		
	428201/16	SC							Au/309		
	428201/16	SC							Hg/122,Tl/135,Sb/117,Se/115		

RESULTS TO
R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MAC-16
SPLIT CORE

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05416	27/05/88	3090	1 OF 2

TUBE No.	SAMPLE No.	Ti	Cr	Mn	Ni	Cu	Zn	As	Se	Y
1	428201	1850	20	315	15	60	230	10	0.04	30
2	428202	1200	25	220	15	45	45	15	0.06	25
3	428203	1250	<5	200	15	25	30	8	<0.02	25
4	428204	1350	30	325	15	15	30	5	<0.02	25
5	428205	1150	15	250	15	185	55	7	<0.02	25
6	428206	1200	20	320	15	585	50	3	0.06	25
7	428207	1150	45	260	10	140	55	8	<0.02	25
8	428208	1300	5	255	10	210	35	8	<0.02	25
9	428209	1150	35	225	15	300	40	15	<0.02	25
10	428210	1150	<5	245	10	305	45	6	<0.02	25
11	428211	1300	35	265	20	155	50	2	<0.02	30
12	428212	1150	<5	315	10	150	35	<2	<0.02	25
13	428213	1250	30	245	15	165	90	4	0.02	30
14	428214	1250	15	260	10	20	65	2	<0.02	30
15	428215	1200	20	255	15	15	40	<2	0.02	30
16	428216	1150	15	240	10	10	30	<2	0.04	30
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	5	5	5	5	2	0.02	3
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	401	401	101	101	101	101	401	115	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05416	27/05/88	3090	2 OF 2

TUBE No.	SAMPLE No.	Zr	Ag	Sb	Ba	Au	Hg	Tl	Pb	
1	428201	330	<0.5	<0.2	2200	<0.008	0.030	1.5	20	
2	428202	220	<0.5	<0.2	1450	<0.008	0.010	1.0	15	
3	428203	240	<0.5	<0.2	1350	<0.008	0.020	0.5	5	
4	428204	260	<0.5	<0.2	1550	<0.008	0.010	0.5	<5	
5	428205	220	<0.5	<0.2	1300	<0.008	0.020	1.0	10	
6	428206	220	1.0	<0.2	1300	<0.008	0.020	1.0	15	
7	428207	220	<0.5	<0.2	1400	<0.008	<0.005	1.0	<5	
8	428208	240	<0.5	<0.2	1350	<0.008	<0.005	1.0	5	
9	428209	220	<0.5	<0.2	1350	<0.008	<0.005	1.0	10	
10	428210	210	<0.5	<0.2	1350	<0.008	0.020	1.0	30	
11	428211	260	<0.5	<0.2	1450	<0.008	0.010	1.0	<5	
12	428212	220	<0.5	<0.2	1250	<0.008	0.010	1.0	<5	
13	428213	240	<0.5	<0.2	1250	<0.008	0.020	1.0	15	
14	428214	240	<0.5	<0.2	1400	<0.008	0.030	1.0	<5	
15	428215	230	<0.5	<0.2	1400	<0.008	<0.005	1.0	<5	
16	428216	220	<0.5	<0.2	1350	<0.008	<0.005	1.0	<5	
17										
18										
19										
20										
21										
22										
23	DETECTION	5	0.5	0.2	10	0.008	0.005	0.5	5	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	401	101	117	401	309	122	135	101	

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

APPENDIX 20.

APPENDIX

Sample No.	Description	Location
427827	Andesitic volcaniclastic	6200N, 4760E
427829	Andesitic volcaniclastic	6000N, 4750E
427830	Glassy Dacitic lava	5800N, 4325E
427833	Andesitic volcaniclastic	5745N, 4500E
427834	Andesitic lava	5600N, 4535E
427836	Basalt lava	5390N, 4780E

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Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

12 September, 1988

REPORT CMS 88/8/2

YOUR REFERENCE:	Letter dated 1.8.1988
DATE RECEIVED:	3rd August, 1988
SAMPLE NOS.:	6 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/8/2

A suite of six rock chip samples, collected south of Que River, was received for petrological examination. Representative thin sections were prepared and examined together with respective offcuts. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

Five of the six rocks in this suite may be categorised as prehnite-pumpellyite-epidote facies altered basalts. These rocks (samples 427827, 427829, 427833, 427834, 427836) include lavas, lava breccias and a lithic pyroclastic facies. The alteration assemblage is distinctive in that it has not previously been noted in the two previous suites described from this area (refer reports CMS 87/5/7 and CMS 84/4/32). Similarly, these (primarily) "two pyroxene" basalts are distinctive in this context.

The fifth sample (427830) represents a relatively differentiated amphibole-phenocrystal lava. This phase is tentatively identified as hornblende-basaltic, but may have been strictly andesitic. The alteration assemblage includes prehnite and epidote and, on this basis, this rock is reasonably correlated with the altered basalts (as delineated above), rather than the hydro-thermally altered basic to intermediate-acid sequence represented by the two previously described suites.

D. Cowan, B. Sc.

SAMPLE NO.: 427827 (T.S. 60433)

CLASSIFICATION: **Basaltic Tuff**

COMPOSITION: Clasts of variably chlorite-epidote-quartz-amygdaloidal basaltic lava with phenocrysts/clusters of fresh pale green augite, albitised plagioclase and subordinate, selectively chloritised ?orthopyroxene. Chloritic fine-grained quartz cement with sporadic interspersed poikilitic/irregular aggregates and minor veinlets of prehnite. Sporadic quartz veinlets, late veins of quartz and zoisitic epidote.

FABRIC: Poorly sorted psammite to lapilli grade, semi-dimensionally orientated lithoclastic. Mildly stressed.

ACCESSORIES: Leucoxenic stainings, rare chromite, rare fine pyrite. Very minor traces of pumpellyite.

INTERPRETATION/ COMMENTS: A basaltic lithic ("lapilli") tuff, extensively chlorite-albite-epidote-prehnite-altered, with a "hydrothermal" chloritic quartz cement, supplemented by replacive aggregates of prehnite.

SAMPLE NO.: 427829 (T.S. 60434)

CLASSIFICATION: **Basaltic "Tuff"**

COMPOSITION: Loose framework of basaltic lava clasts with saussuritic/ albitised plagioclase-, fresh pale yellow-green augite-, and chlorite-pumpellyite-pseudomorphed ?orthopyroxene phenocrysts and quartz-chlorite amygdales; subordinate similarly altered feldspar and pyroxene grains/crystal fragments. Microcrystalline quartzofeldspathic cement (dominantly albite, subordinate films of microcrystalline sporadic vugs of coarser-grained quartz).

FABRIC: Randomly sorted psammite to lapilli grade, angulark lithic-crystal fragmental. Some evidence of in-situ brecciation. Mildly corrosive/ replacive cement. Incipiently stressed.

ACCESSORIES: Fine leucoxenic semi-opaques. Semi-pervasive cloudy micro-crystalline epidote, minor traces of prehnite. Traces of pyrite. Rare chromite.

INTERPRETATION/ COMMENTS: Close affinities with 427827; similarly altered, but with conspicuous pumpellyite. There is some evidence of in-situ brecciation (e.g. "jigsawed" lava clasts and pyroxene grains), suggesting this rock probably represents a quench-brecciated lava rather than a strictly pyroclastic mode of origin. Clasts are relatively texturally and compositionally homogeneous in comparison with 427827.

SAMPLE NO.: 427830 (T.S. 60435)

CLASSIFICATION: **Altered "Hornblende Basalt"**

COMPOSITION: Albitised phenocrystal feldspar laths, subordinate microgranular to fibrous epidote-pseudomorphed amphibole phenocrysts and minor chlorite-quartz-pseudomorphed pyroxene phenocrysts in a groundmass of albite microlaths with a prominent cloudy microcrystalline albitic mesostasis.

FABRIC: Finely porphyritic, fine-grained, flow-structured basaltic.

ACCESSORIES: Minor chlorite-epidote amygdales with traces of prehnite. Minor epidote and crosscutting quartz veinlets. Conspicuous very fine cloudy leucoxenic semi-opaques. Minor traces of very fine pyrite.

INTERPRETATION/ COMMENTS: An unusual altered basic-intermediate lava interpreted as differentiated (hornblende-)basaltic on relict compositional and textural grounds, but possibly strictly andesitic.

SAMPLE NO.: 427833 (T.S. 60436)

CLASSIFICATION: **Basaltic Breccia**

COMPOSITION: Albitised/weakly saussurite-stained plagioclase-, subordinate pale green-brown augite phenocrysts and minor chlorite-pseudomorphed ?orthopyroxene phenocrysts in a chloritic/cloudy microcrystalline zoisitic epidote-stained, subvitric to microcrystalline feldspathic groundmass.

FABRIC: Variably porphyritic, finely flow-banded and variably flow-brecciated/cognate xenoliths on a sub- to fine millimetric scale. Incipiently stressed.

ACCESSORIES: Sparse albite micro-amygdales. Traces of pumpellyite and feldspar-replacive prehnite. Conspicuous very fine cloudy leucoxenic semi-opaques, rare chromite, traces of pyrite.

INTERPRETATION/ COMMENTS: A microcrystalline to subvitric basaltic lava, variably porphyritic, flow-structured and finely flow-brecciated. Alteration pattern analogous to that in 427827 and 427829, with development of an epidote-pumpellyite-chlorite-prehnite assemblage.

SAMPLE NO.: 427834 (T.S. 60437)

CLASSIFICATION: **Basalt Breccia**

COMPOSITION: Clasts of basaltic lava with varying proportions of fresh pale green augite-, albitised/weakly saussurite-stained to prehnite-pseudomorphed plagioclase-, and chlorite-quartz-prehnite-pumpellyite-pseudomorphed ?orthopyroxene phenocrysts, chlorite micro-amygdales; chloritic, subvitric to extensively micro-crystalline prehnite-replaced groundmass.

FABRIC: Moulded, flow-structured, lapilli to agglomerate grade, lithoclastic.

ACCESSORIES: Minor clasts of extensively prehnitised basaltic "crystal" tuff. Minor but semi-pervasive microcrystalline cloudy epidote. Minor leucoxenic stainings, minor traces of chromite.

INTERPRETATION/ COMMENTS: A prehnite-pumpellyite-chlorite-albite-epidote-altered basaltic lava breccia. Close compositional affinities with the 427827, 427829 and 427833 basalts and similarly altered.

SAMPLE NO.: 427836 (T.S. 60438)

CLASSIFICATION: **Amygdaloidal Basalt**

COMPOSITION: Albitised/weakly saussurite-stained plagioclase-, subordinate colourless augite and pumpellyite-pseudomorphed ?orthopyroxene phenocrysts; frequent quartz-pumpellyite $\pm$ chlorite amygdales in a groundmass of albite microlaths with a cloudy cryptocrystalline epidote-altered mesostasis.

FABRIC: Porphyritic, amygdaloidal, weakly flow-structured, basaltic.

ACCESSORIES: Sparse very fine leucoxenised opaques. Minor clots of epidote and prehnite, rare chalcopyrite in amygdales.

INTERPRETATION/ COMMENTS: A typical altered "two pyroxene" basalt with close affinities to 427827 etc. Exhibits relatively marked pumpellyite development as vesicle-infillings and replacements of phenocrystal pyroxene. The selectively altered ferromag. is interpreted as orthopyroxene in the absence of relics.

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649278

ATTACHMENT

Sample No.	Location	Description
427840	5100N 4470E	Brecciated Andesite
427841	5000N 4725E	Andesitic lava
427842	5000N 4790E	Andesitic lava
427847	4500N 4075E	Vesicular Andesite lava
427848	4500N 5285E	Brecciated andesite-basalt lava

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649279

Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. A. W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

26th September, 1988

REPORT CMS 88/9/5

YOUR REFERENCE:	Letter dated 1.9.1988
DATE RECEIVED:	2nd September, 1988
SAMPLE NOS.:	5 Samples
SUBMITTED BY:	A.W. McNeill
WORK REQUESTED:	Petrology

for H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 88/9/5

A suite of five rock chip samples from the Mt. Charter area was received for routine petrological examination. Representative thin sections were prepared, examined in transmitted light and, together with respective offcuts, in oblique incident light. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite is closely analogous to that described in CMS 88/8/2. Lithologies comprise altered basic lavas and lithic fragmental facies with more or less ubiquitous development of an epidote-prehnite-pumpellyite alteration assemblage.

Three rocks exhibit phenocrystal amphibole (basaltic hornblende in part) and, whilst the suite as a whole may be considered as basalts, there is a trend to andesitic compositional characteristics enhancing that previously noted.

Trace elemental analyses may be warranted to assess this trend, which may be more widespread than hitherto noted, in view of the generally pervasive hydrothermal alteration of andesitic volcanics in the Que/Hellyer and Mt. Charter areas.

D. Cowan, B. Sc.

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649281

SAMPLE NO.: 427840 (T.S. 60664) 1.

CLASSIFICATION: **Altered Basaltic Breccia**

COMPOSITION: Aggregates of very fine to microcrystalline quartz, variously clear to clay-stained, with varying proportions of chloritic degraded ?montmorillonite and chlorite. Includes conspicuous chlorite pseudomorphs after phenocrystsl and microphenocrystal ferromags. and feldspar. Subordinate selectively quartz-pseudomorphed ferromagnesian (pyroxene) phenocrysts. Sporadic microscale quartz veinlets, minor veins.

FABRIC: Weakly quartz-amygdaloidal, strongly porphyritic, with a vaguely relict basaltic-microtextured altered groundmass. Flow-structured and -brecciated/moulded lithoclastic.

ACCESSORIES: Traces of chromite. Secondary limonitic Fe-stainings. Minor leucoxenic semi-opaques.

INTERPRETATION/ COMMENTS: This rock represents a thoroughly quartz-clay-chlorite-alterred basic flow breccia. Primary compositional detail is obscure, but relict features, notably the abundant altered phenocrystal ferromags., are consistent with a basalt. Alternately, a basaltic andesite/andesitic basalt.

SAMPLE NO.: 427841 (T.S. 60665)

CLASSIFICATION: **Altered "Lithic Tuff"**

COMPOSITION: Lava clasts with cloudy epidote-pseudomorphed feldspar-, microcrystalline quartz-pseudomorphed pyroxene and fresh dark green-brown hornblende phenocrysts and frequent chlorite-cored quartz amygdales; epidote-prehnite-stained feldspar-microlitic groundmass. Minor similarly altered crystal fragments. Cement of crypto- to microcrystalline quartz with minor vugs of chlorite.

FABRIC: Poorly sorted psammite to lapilli grade lithic fragmental, with a mildly corrosive/replacive cement.

ACCESSORIES: Leucoxenised opaques, trace of chromite, minor corroded relics of colourless phenocrystal augite.

INTERPRETATION/ COMMENTS: This rock is crudely flow-structured and may strictly represent a flow-marginal breccia. Affinities with the relatively altered sample 427830 (CMS 88/8/2). Similarly poorly compositionally determinate (i.e. andesitic or hornblende basaltic).

SAMPLE NO.: 427842 (T.S. 60666)

CLASSIFICATION: **Altered Lava Breccia**

COMPOSITION: Aggregates of cloudy crypto- to microcrystalline epidote with subordinate prehnite and microcrystalline quartz (altered groundmass). Varying proportions of epidote(-albite)-altered plagioclase, fresh dark brown hornblende, and microcrystalline quartz-pseudomorphed pyroxene phenocrysts and chlorite-cored quartz micro-amygdales. Sporadic chlorite-cored quartz veinlets.

FABRIC: Moulded lapilli to agglomerate grade lithoclastic; flow-structured.

ACCESSORIES: Leucoxenic stainings. Traces ultrafine hematite. Minor traces of chromite. Secondary limonitic Fe-stainings. Rare corroded relics of augite.

INTERPRETATION/ COMMENTS: Close affinities with 427841; similarly altered, but relatively "epidosic" and with definite lava flow breccia textural characteristics. Similarly poorly diagnostic in terms of primary compositional detail.

SAMPLE NO.: 427843 (T.S. 60667)

CLASSIFICATION: **Amygdaloidal Basalt**

COMPOSITION: Disseminated albitised/epidote-stained plagioclase phenocrysts, subordinate fresh augite and chlorite-quartz-pseudomorphed ?orthopyroxene phenocrysts, chlorite-quartz micro-amygdales n a groundmass of albitised feldspar microlaths wtih a cloudy cryptocrystalline epidote-stained mesostasis and occasional poikilitic clots of prehnite. Sporadic irregular veins/veinlets of quartz, albite, prehnite and chlorite with clots and films of dark red sphalerite.

FABRIC: Flow-structured porphyritic/variably amygdaloidal basaltic.

ACCESSORIES: Minor feldspar-replacive clots and amygdales of pumpellyite. Leucoxenic semi-opaques, rare chromite. Traces of very fine pyrite in amygdales and veins.

INTERPRETATION/ COMMENTS: A flow-structured amygdaloidal porphyritic lava with typical basaltic compositional characteristics. Exhibits an epidote-prehnite-pumpellyitde alteration assemblage complexed by quartz-albite-prehnite-chlorite-sphalerite veining.

SAMPLE NO.: 427848 (T.S. 60668)

CLASSIFICATION: **Basaltic "Breccia"**

COMPOSITION: Clasts of variably chlorite-quartz-epidote-amygdaloidal lava with disseminated albitised/saussurite-stained plagioclase, fresh augite phenocrysts; cloudy epidote-stained albitised feldspar-microlathic groundmass. Semi-pervasive cement of epidote, albite, quartz and chlorite with disseminated clots and films of adularia.

FABRIC: Poorly sorted psammite to agglomerate grade lithoclastic, with a semi-pervasive interclast cavity-filling cement. Locally weakly moulded.

ACCESSORIES: Rare phenocrysts of "oxyhornblende" (basaltic hornblende). Minor leucoxenic semi-opaques. Disseminated clots of sphalerite in the cement and amygdales. Traces of prehnite in cement and minoir prehnite veinlets.

INTERPRETATION/ COMMENTS: Strictly a lava breccia on the basis of locally moulded clasts, but with a relatively prominent interclastic cement. Typical basaltic relict textural and compositional characteristics. Transitional to 427841 and 427842, with minor phenocrystal dark amphibole.

SAMPLE NO.:

CLASSIFICATION:

COMPOSITION:

FABRIC:

ACCESSORIES:

INTERPRETATION/ COMMENTS:

649284

APPENDIX 21.

649285

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05629

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
4423	

DATE RECEIVED	RESULTS REQUIRED
03/08/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	05/09/88	1	12

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427822/28/2,427830/36,427838	RC	Prep: 016						Cu,Pb,Zn,Ag/101		
	427822/28/2,427830/36,427838	RC							As/114,Ba,Cr,Zr,Ti/401		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

I ZONE

ROCK CHIPS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALABS

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05629	05/09/88	4423	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	427822	95	290	520	0.5	1050	28	130	60	2600
2	427824	45	90	185	<0.5	180	15	120	95	3000
3	427826	50	210	235	0.5	100	23	80	140	3700
4	427828	85	135	190	<0.5	1100	11	95	110	2900
5	427830	65	70	105	<0.5	1650	10	15	160	1950
6	427831	55	70	115	<0.5	1350	11	20	110	2000
7	427832	35	95	175	<0.5	940	13	70	120	2600
8	427833	30	30	105	<0.5	1900	90	75	120	2650
9	427834	50	15	130	0.5	1450	5	90	110	3350
10	427835	75	60	150	<0.5	840	6	220	90	3400
11	427836	50	15	105	<0.5	300	3	45	180	3550
12	427838	<5	20	40	<0.5	1750	70	20	55	2800
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	10	1	5	5	50
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	401	114	401	401	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649287

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ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05669

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
4481	

DATE RECEIVED	RESULTS REQUIRED
24/08/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	21/09/88	1	9

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427839/42,427844/48	RC	Prep: 009,012,013,016						Cu,Pb,Zn,Ag/101		
	427839/42,427844/48	RC							As/114,Au/309,Ba/401		
	Various	RC							Cr,Zr,Ti/401		
	427839/42,427844/48	RC	Prep: 009,012,013,016						Zn,Ag/104		
	427839/42,427844/48	RC							Ba/404		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

I Zone

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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649288

ANALABS

A Division of Westernland Resources (Aust.) Pty Ltd

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05669	21/09/88	4481	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Zn	Ag	Ag	Au	Ba	Ba
1	427839	25	50	65	–	<0.5	–	<0.008	1300	–
2	427840	25	40	160	–	<0.5	–	0.012	718	–
3	427841	55	45	140	–	<0.5	–	<0.008	682	–
4	427842	40	70	535	–	<0.5	–	<0.008	897	–
5	427844	45	20	80	–	<0.5	–	<0.008	684	–
6	427845	40	10	80	–	<0.5	–	<0.008	2100	–
7	427846	360	500	–	2.40	–	30	1.850	–	38.96
8	427847	50	1150	1600	–	1.0	–	<0.008	5660	–
9	427848	5	670	670	–	<0.5	–	<0.008	5870	–
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.05	0.5	2	0.008	10	0.01
24	UNITS	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	%
25	METHOD	101	101	101	104	101	104	309	401	404

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649289

ANALABS

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05669	21/09/88	4481	2 OF 2

TUBE No.	SAMPLE No.	As	Cr	Zr	Ti					
1	427839	16	–	–	–					
2	427840	67	1660	112	3000					
3	427841	25	256	128	2910					
4	427842	11	223	126	3320					
5	427844	12	618	148	2620					
6	427845	<1	25	73	1890					
7	427846	38	–	–	–					
8	427847	12	67	154	3840					
9	427848	7	32	178	4240					
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	1	5	5	50					
24	UNITS	PPM	PPM	PPM	PPM					
25	METHOD	114	401	401	401					

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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APPENDIX 23.

314

649291 29.6.88

LICENCE:

PROJECT: I ZONE : Soil Sampling.

COORD	NUMBER	DEPTH	COLOUR
4500 NORTH			
4000E	428801	60	~~OR/BR~~ GY
12.5	802	40	BL/GY
25	803	20	GR/WH
37.5	804	30	GY/WH
50	805	20	GR
62.5	806	30	GY/WH
75	807	40	GR
87.5	808	85	YL/GY
4100E	809	90	OR
12.5	810	70	YL/BR
25	811	85	OR
37.5	812	No Sample	
50	813	85	OR
62.5	814	65	OR/BR
75	815	35	OR/BR
87.5	816	70	OR/YL
4200E	817	85	BR
12.5	818	90	OR/BR
25	819	100	OR
37.5	820	90	YL/BR
50	821	60	BR/OR
62.5	822	70	BR
75	823	No Sample	
87.5	824	60	B
4300E	825	90	OR
12.5	826	90	OR/BR
25	827	60	BR/OR
37.5	828	80	YL/BR

COORD	NUMBER	DEPTH	COLOUR
4350E	428829	60	BR/OR
62.5	830	90	BR/OR
75	831	NO SAMPLE.	
87.5	832	60	YL/BR
4400E	833	45	BR
12.5	834	40	YW/BR
25	835	50	OR/BR
37.5	836	45	BR/YL
50	837	30	OR/BR
62.5	838	50	YL/BR
75	839	70	OR/YL
87.5	840	50	YL/BR
4500E	841	60	OR/BR

315

LICENCE:
PROJECT:

649292

(2)

COORD	NUMBER	DEPTH	COLOUR
4600	Nth.		
4000	428858	90	OR/GY
12.5	859	80	OR/GY
25	860	35	GY/OR
37.5	861	No Sample	
50	862	No Sample	
62.5	863	70	OR/BR
75	864	55	BR
87.5	865	70	OR/BR
4100E	866	80	OR
12.5	867	70	OR/BR
25	868	70	BR
37.5	869	70	OR/BR
50	870	60	OR
62.5	871	70	OR/BR
75	872	70	OR
87.5	873	70	OR/BR
4200E	874	80	BR
12.5	875	70	OR
25	876	65	OR/BR
37.5	877	70	OR/BR
50	878	85	BR
62.5	879	No Sample	
75	880	No Sample	
87.5	881	70	GY.
4300E	882	No Sample	
12.5	883	No Sample	
25	884	No Sample	
37.5	885	No Sample	

COORD	NUMBER	DEPTH	COLOUR
4350	428886	60	GY
62.5	887	70	GY
75	888	No Sample	
87.5	889	70	GY/BR
4400E	890	60	GY
12.5	891	70	OR/BR
25	892	40	GY/BR
37.5	893	70	GY
50	894	50	GY/BR
62.5	895	70	GY
75	896	60	GY
87.5	897	70	OR.
4500E	898	70	OR/GY

316

LICENCE:

PROJECT: I ZONE

649293 11·7·88

(2)

COORD	NUMBER	DEPTH	COLOUR
4700 NORTH.			
4000E	428899	No Sample.	
12·5	428900	50	BR
25	901	50	BR
37·5	902	40	Yl/BR
50	903	60	BR
62·5	904	65	Yl/OR
75	905	40	GY/WH
87·5	906	70	Yl/OR
4100E	907	45	BR/GY
12·5	908	60	Yl/BR
25	909	No Sample.	
37·5	910	40	GY/WH
50	911	65	GY
62·5	912	No Sample.	
75	913	70	GY/BR
87·5	914	35	GY/BR
4200E	915	No Sample.	
12·5	916	70	GY/BR
25	917	No Sample.	
37·5	918	60	GY/WH
50	919	No Sample.	
62·5	920	No Sample.	
75	921	70	GY
87·5	922	No Sample.	
4300E	923	60	BR/GY
12·5	924	50	GY/BR
25	925	80	BR
37·5	926	35	GY

COORD	NUMBER	DEPTH	COLOUR
4350E	927	30	BR
62·5	928	40	BR
75	929	60	BR
87·5	930	70	BK/BR
4400E	931	60	BR ✗ MISSING
12·5	932	80	BK
25	933	80	GY/WH
37·5	934	40	BK
50	935	40	GY/WH
62·5	936	35	GY/WH
75	937	50	GY/BR
87·5	938	40	BK/BR
4500E	939	70	GY
12·5	939(A)	50	BK/GR ✓

LICENCE:
PROJECT: I ZONE

649294

(2)

COORD	NUMBER	DEPTH	COLOUR
4800 NORTH			
3400E	428940	NO TRACK	*
125	941	NO SAMPLE NO ROAD	
25	942	NO TRACK	
37.5	943	NO SAMPLE NO ROAD	
50	944	Road in WAY	
62.5	945	NO SAMPLE Road in WAY	
75	946	60	BR
87.5	947	50	YL-BR
3500E	948	B.H.2	*
12.5	949	40	BR-OR
25	950	Road in WAY	
37.5	951	Road in WAY	
50	952	Road in WAY	
62.5	953	B.H.2	
75	954	50	BR.
87.5	955	60	OR-BR
3600E	956	B.H.2.	
12.5	957	75 75	OR-BR
25	958	80	BR.
37.5	959	95	OR-BR
50	960	90	BR.
62.5	961	90	OR-BR
75	962	90	BR.
87.5	963	B.H.2	
3700E	964	B.H.2.	
12.5	965	45	YL-BR
25	966	50	BR.
37.5	967	40.	YL-BR

COORD	NUMBER	DEPTH	COLOUR
3750E	428968	50	YL-BR
62.5	969	Road in WAY	
75	970	B.H.2	
87.5	971	25	YL-BR
3800E	972	50	GR
12.5	973	35	GY-WL
25	974	45	GY
37.5	975	B.H.2	
50	976	70	OR-YL
62.5	977	80	GY-OR
75	978	70	OR-YL
87.5	979	70	YL-BR
3900	980	70	OR-YL
12.5	981	65	OR-BR
25	982	70	YL-BR
37.5	983	70	OR-BR
50	984	70	YL-BR
62.5	985	Road in WAY	
75	* 986	B.H.2 Road in WAY	SD3
87.5	987	B.H.2	
4000	988	70	OR
12.5	989	85	YL-BR
25	990	80	OR
37.5	991	95	OR-YL
50	992	80	YL-BR
62.5	993	90	OR-BR
75	994	80	
87.5	995	85	OR-BR
4100E	996	80	YL-BR

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LICENCE:

PROJECT: I ZONE

649295

(2)

COORD	NUMBER	DEPTH	COLOUR
4800 NORTH			
4112.5E	428997	90	OR-BR
25	998	90	OR
37.50	999	80	GY-WL
50	429000	70	BR
62.5	001	70	BR-GY
75	002	70	BR-GR
87.5	003	60	GY-BR
4200E	004	60	BR-GR
12.5	005	70	GY-BR
25	006	B.H.2	
37.5	007	60	GY-BR
50	008	60	GR-WL
62.5	009	40	GY-WL
75	010	50	GY-WL
87.5	011	B.H.2	
4300E	012	45	OR-BR
12.5	013	70	GY-BR
25	014	45	GY-BR
37.5	015	60	GY-BR.
50	016	80	GY-WL
62.5	017	40	GY-WL
75	018	80	GY-WL
87.5	019	75	BL-GY
4400E	020	80	GY-WL
12.5	021	90	BL-BR
25	022	NO SAMPLE	
37.5	023	40	GY-WL
50	024	70	GY-WL

COORD	NUMBER	DEPTH	COLOUR
4462.5E		B.H.2.	
75	429025	80	OR-GY
87.5	026	15	BR
4500E	027	90	WL-OR
12.5	028	15	GY-BL
25	029	B.H.2	
37.5	030	75	GY-BL
50	031	80	GY-BR
62.5	032	35	GY-WL
75	033	80	GY-WL
87.5	034	45	GY-WL
4600E	035	70	BR
12.5	036	35	GY-WL
25	037	70	GY-BR
37.5	038	45	GY-BL
50	039	70	GY-WL
62.5	040	30	GY-WL
75	041	70	GY-WL
87.5	042	50	GY-WL
4700E	043	70	GY-WL
12.5	044	44	GY-WL
25	045	70	GY
37.5	046	55	GY-WL
50	047	70	GY
62.5	048	50	GY-WL
75	049	70	GY
87.5	050	45	GY-BL
4800E	051	60	GY

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(2)

319 LICENCE:
PROJECT:

COORD	NUMBER	DEPTH	COLOUR
4900 NORTH			
3500E	429052		
72.5	053		
25	054		
37.5	055		
50	056		
62.5	057		
75	058		
87.5	059	NO SAMPLE	
3600E	060	NO SAMPLE	
12.5	061	40	OR/BR
25	062	NO SAMPLE	
37.5	063	NO SAMPLE	
50	064	80	Gy/BR
62.5	065	NO SAMPLE	
75	066	30	BR
87.5	067	40	Yw/BR
Refer	TO NEXT		
	Page !!		

COORD	NUMBER	DEPTH	COLOUR

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LICENCE:
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649297

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COORD	NUMBER	DEPTH	COLOUR
4900 NORTH.			
3700E	429068	No Sample	
12.5E	069	No Sample	
25	070	50	BR/GR
37.5	071	45	YL/BR
50	072	45	GR/GY
62.5	073	40	YL/BR
75	074	No Sample	
87.5	075	No Sample	
3800	076	85	GY/GR
12.5	077	30	GY/WH
25	078	60	OR
37.5	079	60	YL/BR
50	080	85	OR
62.5	081	60	OR/BR
75	082	75	OR
87.5	083	70	OR/BR
3900	084	45	OR/BR
12.5	085	65	OR/YL
25	086	50	OR/BR
37.5	087	70	OR/BR
50	088	50	OR
62.5	089	60	YL/BR
75	090	No Sample	
87.5	091	55	OR/YL
4000	092	65	OR
12.5	093	60	OR/BR
25	096	60	OR/YL
37.5	095	50	OR/BR

COORD	NUMBER	DEPTH	COLOUR
4050E	429096	60	GY
62.5	097	60	GY/WH
75	098	75	BR/GY
87.5	099	50	GY/WH
4100E	429100	50	GY/YL
12.5	101	30	GY/BL
25	102	15	GY
37.5	103	15	BL/BR
50	104	30	GY
62.5	105	50	GY/BR
75	106	60	GY
87.5	107	40	GY/WH
4200	108	55	GY
12.5	109	30	BL/BR
25	110	35	GY
37.5	111	50	GY/WH
50	112	No Sample	
62.5	113	40	GY/BR
75	114	35	GY
87.5	115	30	GY/WH
4300	116	30	GY
12.5	117	30	GY/WH
25	118	30	GY
37.5	119	55	GY/WH
50	X 120	No Sample	STD 3.
62.5	121	60	BR/GY
75	122	70	GY/BR
87.5	123	50	GY/WH
4400	124	No Sample	

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649298

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COORD	NUMBER	DEPTH	COLOUR
4900 NORTH			
44125E	429125	35	GY/BL
25	126	60	GY
37.5	127	55	GY/WH
50	128	55	GY
62.5	129	45	GY/WH
75	130	No Sample	
87.5	131	80	GY/BL
4500E	132	70	GY
12.5			
25			
37.5			
50			
62.5			
75			
87.5			
4600E			
12.5			
25			
37.5			
50			
62.5			
75			
87.5			
4700			
12.5			
25			
37.5			
50			

COORD	NUMBER	DEPTH	COLOUR
47625E			
75			
87.5			
4800E			

LICENCE:

PROJECT: I ZONE

649299

COORD	NUMBER	DEPTH	COLOUR
5000 NORTH			
3700E	429133	40	OR/BR
12.5E	134	50	OR/Yw
25	135	55	OR/BR
37.5	136	30	Yw/gy
50	137	No Sample	
62.5	138	45	Yw/BR
75	139	50	OR/GR
87.5	140	55	OR/BR
3800	141	70	OR/YL
12.5	142	50	Yw/OR
25	143	80	OR
37.5	144	55	OR/BR
50	145	75	OR/YL
62.5	146	70	OR/BR
75	147	70	OR/GR
87.5	148	65	OR/BR
3900	149	65	OR
12.5	150	60	OR/BR
25	151	80	OR
37.5	152	40	OR/BR
50	153	100	OR
62.5	154	No SAMPLE	
75	155	80	OR/GY
87.5	156	30	Gy/wh
4000	157	80	BR/GY
12.5	158	30	GY
25	159	75	OR/GY
37.5	160	No SAMPLE	

COORD	NUMBER	DEPTH	COLOUR
4050E	429161	35	GY
62.5	162	No SAMPLE	
75	163	40	GY
87.5	164	60	GY
4100E	165	No Sample	
12.5	166	30	Gy/wh
25	167	35	GY
37.5	168	40	Gy/BR
50	169	70	BR/GY
62.5	170	60	Gy/BR
75	171	No Sample	
87.5	172	50	Gy/wh
4200	173	50	GY/BR
12.5	174	30	Gy/wh
25	175	35	GY/WH
37.5	176	35	BR/OR
50	177	45	GY/BR
62.5	178	50	Yw/BR
75	179	60	GY/WH
87.5	180	45	BL/BR
4300	181	60	BR
12.5	182	40	BL
25	183	50	GY
37.5	184	80	BL/BR
50	185	~~No Sample~~ SAMP. EXISTS	*
62.5	186	90	BL/BR
75	187	30	BR/GY
87.5	188	20	Gy/wh
4400	189	No Sample	

LICENCE:

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649300

(2)

COORD	NUMBER	DEPTH	COLOUR
5000 NORTH			
44125E	429190	15	Gy/BR
25	191	75	BR
37.5	192	50	Gy/wh
50	* 193	No Sample STD3	
62.5	194	No Sample	
75	195	30	GY/WH
87.5	196	No Sample	
4500E	197	No Sample.	
12.5	198	No Sample	
25	199	No Sample.	
37.5	200	No Sample	
50	201	30	GY
62.5	202	60	Gy/wh
75	203	60	GY/OR
87.5	204	60	Gy/Yw
4600E	205	75	GY/BR
12.5	206	50	OR/BR
25	207	70	BR/GY
37.5	208	45	OR/Yw
50	209	75	OR
62.5	210	55	Yw/BR
75	211	20	BR
87.5	212	35	BR/BK
4700	213	50	BR
12.5	214	50	Yw/BR
25	215	70	OR/BR
37.5	216	30	OR/BR
50	217	55	OR

COORD	NUMBER	DEPTH	COLOUR
47625E	429218	45	Yw/BK
75	219	60	BR
87.5	220	50	Yw/BR
4800E	221	60	OR/BR

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LICENCE:

PROJECT: I ZONE

649301

(2)

COORD	NUMBER	DEPTH	COLOUR
5100 NORTH			
44125E	429279	60	GY/OR
25	280	80	RD/BR
37.5	281	70	GY/OR
50	282	No Sample	
62.5	283	70	GY/OR
75	284	60	RD
87.5	285	No Sample.	
4500E	286	80	OR/BR
12.5	287		
25	288		
37.5	289		
50	290		
62.5	291		
75	292		
87.5	293		
4600E	294		
12.5	295		
25	296		
37.5	297		
50	298		
62.5	299		
75	300		
87.5	301		
4700	302		
12.5	303		
25	304		
37.5	305		
50	306		

COORD	NUMBER	DEPTH	COLOUR
47625E	429307		
75	308		
87.5	309		
4800E	310		
MISSING *			

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LICENCE:

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649302

(2)

COORD	NUMBER	DEPTH	COLOUR
5100 NORTH			
3700E	429222	80	GY/wh
12.5E	223	60	BR/GY
25	224	70	GY/wh
37.5	225	70	BR/GY
50	226	60	GY/wh
62.5	227	70	GY
75	228	30	GY/OR
87.5	229	80	BR/GY
3800	230	15	GY/wh
12.5	231	90	GY
25	232	20	GY/wh
37.5	233	70	GY
50	234	70	GY/wh
62.5	235	70	GY
75	236	60	GY/wh
87.5	237	60	GY
3900	238	60	GY/wh
12.5	239	70	GY
25	240	50	GY/wh
37.5	241	No Sample.	
50	242	60	GY/wh
62.5	243	70	GY
75	244	70	GY/wh
87.5	245	70	GY
4000	246	No Sample	
12.5	247	60	GY
25	248	60	GY/wh
37.5	249	70	GY

COORD	NUMBER	DEPTH	COLOUR
4050E	429250	50	GY/wh
62.5	251	70	GY
75	252	40	GY/wh
87.5	253	70	GY
4100E	254	50	GY/wh
12.5	255	70	GY
25	256	80	GY/wh
37.5	257	60	GY
50	258	70	GY/wh
62.5	259	50	GY
75	260	60	RD.
87.5	261	70	GY
4200	262	50	GY/wh
12.5	263	60	GY
25	264	40	GY/wh
37.5	265	No Sample.	
50	X 266	No Sample	SD3
62.5	267	No Sample	
75	268	No Sample	
87.5	269	70	GY/WH
4300	270	50	GY/wh
12.5	271	70	GY
25	272	50	GY/Yw
37.5	273	70	GY/OR
50	274	No Sample	
62.5	275	70	GY/OR
75	276	No Sample	
87.5	277	70	GY/WH
4400	278	60	Yw/BR

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LICENCE:

PROJECT: I ZONE

649303 6.7.88

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COORD	NUMBER	DEPTH	COLOUR
5200 NORTH.			
3700E	429311	90	GR/YL
12.5E	312	no SAMPLE	
25	~~4~~ 313	no SAMPLE	STD 3
37.5	314	50	OR/BR
50	315	70	YL-OR
62.5	316	Road in WAY	
75	317	60	BR/GY
87.5	318	80	GY/WL
3800	319	25	GY
12.5	320	40	GY/WL
25	321	45	GY/WL
37.5	322	40	GR/WL
50	323	50	GR
62.5	324	40	GR/WL
75	325	80	BR/GY
87.5	326	30	GY/WL
3900	327	20	GY/BR
12.5	328	60	BR
25	329	50	BL/GY
37.5	330	40	GY-WL
50	331	45	GR/GY
62.5	332	30	GY-WL
75	333	no SAMPLE	
87.5	334	90	BR
4000	335	90	BL/GY
12.5	336	60	BK
25	337	55	BR/
37.5	338	Road in WAY	

COORD	NUMBER	DEPTH	COLOUR
4050E	429339	85	BR/GY
62.5	340	40	BK.
75	341	no SAMPLE	
87.5	342	Road in WAY	
4100E	343	no SAMPLE	
12.5	344	Road in WAY	
25	345	60	GR/OR
37.5	346	Road in WAY	
50	347	1m	GR/BR
62.5	348	65	OR/BR
75		no SAMPLE	*
87.5	349	Road in WAY.	
4200	350	no SAMPLE	
12.5	351	Road in WAY.	
25	352	60	OR/BR
37.5	353	30	BR/OR
50	354	50	OR/BR
62.5	355	60	OR/BR
75	356	45	OR/BR
87.5	357	70	YL-BR
4300	358	60	GY/WL
12.5	359	60	GY-BR
25	360	30	GY/WL
37.5	361	50	GY/BR
50	362	90	GY-WL
62.5	363	50	GY-WL
75	364	90	OR/BR
87.5	365	60	GY-WL
4400	366	80	OR

LICENCE:

PROJECT: I ZONE

649304

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COORD	NUMBER	DEPTH	COLOUR
5200 NORTH			
44125E	429367	70	OR/BR
25	368	70	OR
37.5	369	70	YW-BR
50	370	60	BR
62.5	371	80	YW-BR
75	372	40	OR/BR
87.5	373	80	BR/YL
4500E	374	60	OR
12.5	375	60	YL-BR
25	376	40	OR/BR
37.5	377	50	OR/BR
50	378	50	OR
62.5	379	60	OR/BR
75	380	70	BR
87.5	381	70	OR/BR
4600E	382	50	OR/BR
12.5	383	70	BR
25	383	80	OR/BR
37.5	384	1.00	YW/OR
50	385	80	OR
62.5	386	30	BR
75	387	70	BR/OR
87.5	388	70	BR
4700	389	80	OR/BR
12.5	390	70	YW/BR
25	391	60	BR
37.5	392	80	OR/BR
50	393	70	BR

COORD	NUMBER	DEPTH	COLOUR
47625E	429394	30	OR/BR
75	395	80	OR/BR
87.5	396	1.00	YW/OR
4800E	397	70	OR/BR

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LICENCE:
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COORD	NUMBER	DEPTH	COLOUR
5300 NORTH			
3700E	429398	No Sample	
12.5E	399	No Sample	
25	400	No Sample	
37.5	401	No Sample	
50	402	45	OR/BR
62.5	403	No Sample	
75	404	No Sample.	
87.5	405	No Sample	
3800	406	No Sample.	
12.5	407	60	GY/BR
25	408	50	BR/GY
37.5	409	55	GY/WH
50	410	80	BR/GR
62.5	411	40	GY/BR
75	412	60	BR
87.5	413	35	OR/Bl
3900	414	60	BR
12.5	415	40	Bl/GY
25	416	30	BR
37.5	417	No Sample.	
50	418	70	BR
62.5	419	No Sample	
75	420	No Sample	
87.5	421	No Sample	
4000	422	40	BR
12.5	423	50	BR/Bl
25	424	30	Bl/GY
37.5	425	No Sample	

COORD	NUMBER	DEPTH	COLOUR
4050E	429426	No Sample.	
62.5	427	No Sample.	
75	428	30	GR
87.5	429	40	GY/WH
4100E	430	No Sample.	
12.5	431	35	GY/WH
25	432	60	Yl/OR
37.5	433	40	OR/BR
50	434	70	Yl/OR
62.5	435	25	Yl/BR
75	436	55	BR/OR
87.5	437	60	OR/BR
4200	438	100	BR/OR
12.5	439	45	OR/BR
25	440	50	OR
37.5	441	50	Yl/BR
50	442	75	OR/BR
62.5	443	55	OR/BR
75	444	80	BR
87.5	445	60	OR/BR
4300	446	70	BR
12.5	447	80	BR
25	448	No Sample	
37.5	449	50	GY/WH
50	450	50	GY/WH
62.5	451	45	GY/WH
75	452	50	GY/BR
87.5	453	50	GY/WH
4400	454	40	GY/WH

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LICENCE:
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COORD	NUMBER	DEPTH	COLOUR
5300 NORTH.			
44125E	429455	40	GY/WH
25	456	40	GY/WH
37.5	457	45	GY/WH
50	458	65	OR
62.5	459	65	YI/BR
75	460	70	OR/BR
87.5	461	60	YI/BR
4500E	462	90	OR/BR
12.5	463		
25	464		
37.5	465		
50	466		
62.5	467		
75	468		
87.5	469		
4600E	470		
12.5	471		
25	472		
37.5	473		
50	474		
62.5	475		
75	476		
87.5	477		
4700	478		
12.5	479		
25	480		
37.5	481		
50	482		

COORD	NUMBER	DEPTH	COLOUR
47625E	429483		
75	484		
87.5	485		
4800E	486		

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LICENCE:
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COORD	NUMBER	DEPTH	COLOUR
5400 NORTH			
3400E	429487	65	GY
125	488	NO SAMPLE	
25	489	15	GY
37·5	490	40	GY
50	491	70	GY
62·5	492	No Sample	
75	493	No Sample.	
87·5	494	40	Gy/wh
3500E	495	80	BR
12·5	496	No Sample	
25	497	No Sample.	
37·5	498	50	OR/BR
50	499	70	BR/OR
62·5	500	No Sample	
75	501	100	BR/OR
87·5	502	70	Yw/OR
3600E	503	75	BR/OR
12·5	504	60	Yw/BR
25	505	65	BR/OR
37·5	506	50	Yw/BR
50	507	35	BR/GY
62·5	508	30	Gy/Yw
75	509	70	BR/OR
87·5	510	50	Yw/BR
3700E	511	70	BR/OR
12·5	512	30	Gy/OR
25	513	No Sample	
37·5	514	No Sample	

COORD	NUMBER	DEPTH	COLOUR
3750E	429515	No Sample.	
62·5	516	No Sample	
75	517	No Sample	
87·5	518	No Sample	
3800E	519	No Sample.	
12·5	520	No Sample	
25	521	30	GY
37·5	522	NO Sample	
50	523	No Sample.	
62·5	524	40	Gy/wh
75	525	45	GY
87·5	526	30	Gy
3900	527	40	GY
12·5	528	35	GY
25	529	75	BR/GY
37·5	530	40	GY
50	531	45	GY
62·5	532	50	GY/wh
75	533	35	GY
87·5	534	40	Gy/OR
4000	535	30	GY
12·5	536	35	GY/wh
25	537	40	GY
37·5	538	40	GY/wh
50	539	50	GY
62·5	540	70	GY/Yw
75	541	70	GY
87·5	542	50	GY/wh
4100E	543	50	GR/WH

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LICENCE:

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COORD	NUMBER	DEPTH	COLOUR
5400 NORTH			
4112.5E	429544	35	GY/OR
25	545	40	GR/OR
37.5	546	50	OR/BR
50	547	80	BR/OR
62.5	548	65	OR/BR
75	549	100	OR
87.5	550	75	OR/BR
4200E	551	100	OR/BR
12.5	552	80	OR/BR
25	553	40	OR
37.5	554	45	OR/BR
50	555	70	BR/OR
62.5	556	60	OR/BR
75	557	70	BR/OR
87.5	558	65	OR/BR
4300E	559	60	OR/BR
12.5	560	50	GY/WH
25	561	100	BR/OR
37.5	562	80	GY/WH
50	563	50	GY/OR
62.5	564	45	GY/GR
75	565	45	GY/OR
87.5	566	45	YL/BR
4400E	567	75	GY/OR
12.5	568	60	YL/BR
25	569	70	OR
37.5	570	75	YL/BR
50	571	60	OR/GY

COORD	NUMBER	DEPTH	COLOUR
4462.5E	429572	55	YL/BR
75	573	50	OR/GY
87.5	574	60	YL/BR
4500E	575	No Sample	
12.5	576	80	OR/BR
25	577	50	OR
37.5	578	90	OR/BR
50	579	No Sample	
62.5	580	90	OR/BR
75	581	75	OR
87.5	582	85	YL/BR
4600E	583	60	OR/BR
12.5	584	100	OR/BR
25	585	60	OR/BR
37.5	586	100	OR/BR
50	587	90	OR
62.5	588	90	OR/BR
75	589	90	OR
87.5	590	80	OR/BR
4700E	591	90	OR
12.5	592	60	OR/BR
25	593	No Sample	
37.5	594	75	OR/BR
50	595	90	OR
62.5	596	No Sample	
75	597	100	OR
87.5	598	No Sample	
4800E	599	80	OR

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LICENCE:

PROJECT: I ZONE.

649309

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COORD	NUMBER	DEPTH	COLOUR
5600 NORTH			
3400E	429600	50	Yl/OR
12.5	601	65	Yl/OR
25	602	60	OR
37.5	603	90	Yl
50	604	60	OR
62.5	605	60	Yl
75	606	70	OR
87.5	607	70	OR/BR
3500E	608	70	OR/Yl
12.5	609	85	Yl/BR
25	610	60	Yl/OR
37.5	611	80	OR
50	612	50	Yl/OR
62.5	613	30	OR/BR
75	614	50	OR/BR
87.5	615	50	Yl/BR
3600E	616	60	OR
12.5	617	45	Yl/OR
25	618	60	OR
37.5	619	60	Yl/OR
50	620	60	OR
62.5	621	70	Yl/OR
75	622	60	OR/Yl
87.5	623	65	Yl/BR
3700E	624	70	OR/Yl
12.5	625	35	Yl/BR
25	626	60	OR
37.5	627	40	Yl/BR

COORD	NUMBER	DEPTH	COLOUR
3750E	429628	70	OR
62.5	629	50	OR/BR
75	630	70	OR
87.5	631	60	OR/BR
3800E	632	No Sample	
12.5	633	No Sample	
25	634	No Sample	
37.5	635	No Sample	
50	636	No Sample.	
62.5	637	No Sample	
75	638	No Sample.	
87.5	639	50	GY/BR
3900	429640	No Sample	
12.5	429641	55	GY/WH
25	642	60	OR/GY
37.5	643	70	GY/WH
50	644	60	GY/GR
62.5	645	30	GY/BR
75	646	60	GY
87.5	429647	60	GY/OR
4000	648	50	OR/GY
12.5	649	50	GY/WH
25	650	50	OR/BR
37.5	651	40	GY/BR
50	652	No Sample	
62.5	653	No Sample	
75	654	No Sample.	
87.5	655	No Sample.	
4100E	656	No Sample	

LICENCE:
PROJECT: I ZONE

649310

COORD	NUMBER	DEPTH	COLOUR
5600 NORTH			
4412.5E	429657	No Sample	
25	658	No Sample	
37.50	659	No Sample.	
50	660	No Sample.	
62.5	661	55	Yl/BR
75	662	50	OR/Yl
87.5	663	40	Yl/BR
4200E	664	No Sample	
12.5	665	60	Yl/BR
25	666	No Sample SD3	
37.5	667	40	BR/Yl
50	668	50	OR/Yl
62.5	669	70	Yl
75	670	40	OR/BR
87.5	671	70	Yl/BR
4300E	672	60	OR/Yl
12.5	673	70	Yl/OR
25	674	50	OR/BR
37.5	675	60	Yl/BR
50	676	70	OR/Yl
62.5	677	50	Yl
75	678	60	OR/Yl
87.5	679	60	Yl/BR
4400E	680	60	OR/Yl
12.5	681	50	Yl
25	682	50	OR/Yl
37.5	683	60	Yl/BR
50	684	80	Yl/OR

COORD	NUMBER	DEPTH	COLOUR
4462.5E	429685	70	Yl/OR
75	686	70	Yl/OR
87.5	687	60	Yl/BR
4500E	688	50	BR/OR
12.5	689	40	Yl/BR
25	690	50	BR/OR
37.5	691	60	Yl/OR
50	692	60	BR/OR
62.5	693	90	OR
75	694	60	OR
87.5	695	80	OR/BR
4600E	696	70	OR/BR
12.5	697	70	Yl/BR
25	698	70	OR/BR
37.5	699	60	OR/BR
50	700	70	OR/BR
62.5	701	50	OR/Yl
75	702	70	OR/BR
87.5	703	65	OR/BR
4700E	704	70	OR/BR
12.5	705	70	OR/BR
25	706	70	OR
37.5	707	50	OR/Yl
50	708	70	OR
62.5	709	60	OR/BR
75	710	70	OR
87.5	711	40	OR/BR
4800E	712	70	OR

LICENCE: 649311 13.7.88

PROJECT: I ZONE

(2)

COORD	NUMBER	DEPTH	COLOUR
5800 NORTH			
3400E	429713	50	GY
12.5	714	70	GY
25	715	50	GY
37.5	716	80	GY
50	717	50	GY
62.5	718	50	OR/BR
75	719	60	OR
87.5	720	55	OR
3500E	721	70	OR
12.5	722	40	BR
25	723	70	OR/BR
37.5	724	65	OR/BR
50	725	No Sample.	
62.5	726	No Sample	
75	727	No Sample	
87.5	728	No Sample	
3600E	729	70	OR/BR
12.5	730	45	OR
25	731	70	OR/BR
37.5	732	60	OR
* 50	733	70*	OR/BR
62.5	734	75	OR/BR
75	735	70	OR/BR
87.5	736	65	OR/Yw
3700E	737	70	OR/BR
12.5	738	70	OR/BR
25	739	60	OR/BR
37.5	740	80	OR/BR

COORD	NUMBER	DEPTH	COLOUR
3750E	429741	60	OR/BR
62.5	742	70	OR/BR
75	743	60	OR/BR
87.5	744	60	OR/BR
3800E	745	10	OR/BR
12.5	746	No Sample.	
25	747	60	OR/BR
37.5	748	50	OR.
50	749	70	OR/BR
62.5	750	50	OR
75	751	No Sample	
87.5	752	No Sample	
3900	753	No Sample.	
12.5	754	No Sample	
25	755	No Sample.	
37.5	756	No Sample	
50	757	No Sample.	
62.5	758	60	OR
75	759	70	OR/BR
87.5	760	60	OR/BR
4000	761	70	OR/BR
12.5	762	60	GY/wh
25	763	70	GY/WH
37.5	764	35	GY/OR/wh.
50	765	70	GY/BR
62.5	766	55	OR
75	767	70	OR/BR
87.5	768	30	GY/wh.
4100E	769	50	OR/BR

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649312

LICENCE:

PROJECT: I ZONE

(2)

COORD	NUMBER	DEPTH	COLOUR
5800 NORTH			
4412.5E	429770	No Sample	
25	771	45	OR/BR
37.50	772	No Sample	
50	773	No Sample	
62.5	774	No Sample	
75	775	No Sample	
87.5	776	No Sample	
4200E	777	No Sample	
12.5	778	60	OR/Yw
25	779	No Sample.	
37.5	780	No Sample	
50	781	No Sample	
62.5	782	No Sample	
75	783	No Sample.	
87.5	784	No Sample	
4300E	785	No Sample	
12.5	786	50	OR/BR
25	787	70	OR/BR
37.5	788	70	OR
50	789	70	OR/Yl
62.5	790	70	OR
75	791	60	OR/BR
87.5	792	85	OR
4400E	793	60	OR
12.5	794	35	OR
25	795	70	OR/BR
37.5	796	50	BR
50	797	35	BR

COORD	NUMBER	DEPTH	COLOUR
4462.5E	429798	45	BR
75	799	45	OR
87.5	800	25	OR/BR
4500E	801	35	OR/BR
12.5	802	65	OR
25	803	35	OR/BR
37.5	804	30	OR
50	805	35	BR
62.5	806	55	OR
75	807	No Sample.	
87.5	808	40	OR
4600E	809	No Sample.	
12.5	810	100	OR/BR
25	811	50	BR/OR
37.5	812	55	OR/BR
50	813	50	BR/OR
62.5	814	60	OR
75	815	50	BR/OR
87.5	816	75	OR/BR
4700E	817	60	OR
12.5	818	85	OR
25	819	60	OR/BR
37.5	820	70	BR/OR
50	821	60	ORBR
62.5	822	65	OR
75	823	60	OR
87.5	824	55	OR
4800E	825	60	ORBR

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649313

LICENCE:

PROJECT: I ZONE

(2)

COORD	NUMBER	DEPTH	COLOUR
6000 NORTH.			
3400E	429826	75	GY/GR
125	827	50	GY/WH
25	828	50	GY/WH
37.5	829	40	GY/WH
50	830	50	GY
62.5	831	70	GY/WH
75	832	70	YI/BR
87.5	833	70	YI
3500E	834	60	OR/BR
12.5	835	60	YI/OR
25	836	65	OR
37.5	837	40	YI/BR
50	838	50	OR/BR
62.5	839	70	OR/YI
75	840	60	OR
87.5	841	60	YI/OR
3600E	842	70	OR
12.5	843	50	OR/BR
25	844	50	OR/BR
37.5	845	45	OR
50	~~846~~	No Sample	STD3
62.5	847	60	OR
75	848	10	BR
87.5	849	80	OR/BR
3700E	850	65	OR/BR
125	851	70	OR/BR
25	852	50	BR
37.5	853	60	OR/BR

COORD	NUMBER	DEPTH	COLOUR
3750E	429854	90	OR
62.5	855	90	OR/BR
75	856	60	OR/BR
87.5	857	80	OR/BR
3800E	858	40	OR
12.5	859	60	OR/BR
25	860	No Sample.	
37.5	861	70	OR/BR
50	862	100	OR
62.5	863	60	YI/BR
75	864	60	OR/BR
87.5	865	70	YI/BR
3900	866	40	OR
12.5	867	50	YI/BR
25	868	No Sample.	
37.5	869	No Sample.	
50	870	No Sample.	
62.5	871	No Sample.	
75	872	No Sample.	
87.5	873	No Sample.	
4000	874	No Sample.	
12.5	875	No Sample.	
25	876	50	OR
37.5	877	50	OR/BR
50	878	35	OR/YI
62.5	879	45	OR/YI
75	880	80	RD/OR
87.5	881	55	YI/BR
4100E	882	90	OR

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649314

(2)

LICENCE:
PROJECT: I ZONE

COORD	NUMBER	DEPTH	COLOUR
6000 NORTH			
4412·5E	429883	60	Yl/BR
25	884	85	GR/BR
37·50	885	70	Yl/BR
50	886	65	BR
62·5	887	75	Yl/BR
75	888	55	BR
87·5	889	60	Yl/BR
4200E	890	60	BR/Yl
12·5	891	40	Yl/BR
25	892	No Sample	
37·5	893	40	Yl/BR
50	894	70	BR/OR
62·5	895	75	Yl/BR
75	896	50	OR
87·5	897	40	OR/BR
4300E	898	70	OR
12·5	899	60	OR/BR
25	900	80	OR
37·5	901	60	OR/Yl
50	902	75	OR/BR
62·5	903	70	OR/Yl
75	904	80	OR
87·5	905	35	Yl/BR
4400E	906	65	OR
12·5	907	45	Yl/BR
25	908	60	OR
37·5	909	60	Yl/BR
50	910	50	Yl/OR

COORD	NUMBER	DEPTH	COLOUR
4462·5E	429911	70	Yl/BR
75	912	70	BR
87·5	913	80	Yl/BR
4500E	914	45	OR/BR
12·5	915	90	Yl/BR
25	916	90	BR/OR
37·5	917	50	OR/BR
50	918	70	OR
62·5	919	60	OR/BR
75	920	50	OR/BR
87·5	921	70	OR/Yl
4600E	922	100	OR
12·5	923	80	OR/BR
25	924	60	BR
37·5	925	90	OR/GY
50	926	65	OR
62·5	927	95	OR/RD
75	928	70	BR/OR
87·5	929	60	Yl/OR
4700E	930	No Sample.	
12·5	931	No Sample.	
25	932	No Sample.	
37·5	933	40	Yl/BR
50	934	No Sample.	
62·5	935	60	Yl/BR
75	936	55	OR/BR
87·5	937	70	OR/Yl
4800E	938	65	BR/OR

LICENCE:
PROJECT:

649315

(2)

COORD	NUMBER	DEPTH	COLOUR
6200 NORTH.			
3400E	429939	80	GY
12.5	940	70	GY
25	941	No Sample	
37.5	942	No Sample	
50	943	No Sample	
62.5	944	No Sample	
75	945	70	GY
87.5	946	70	BR
3500	947	60	GY/BR
12.5	948	60	BR
25	949	50	GY/BR
37.5	950	60	BR/GY
50	951	50	GY
62.5	952	70	GY
75	953	No Sample	
87.5	954	70	BR
3600	955	80	GY
12.5	956	No Sample	
25	957	No Sample	
37.5	958	No Sample	
50	959	70	OR/BR
62.5	960	60	OR
75	961	60	OR/BR
87.5	962	50	OR
3700E	963	80	OR
12.5	964	50	OR
25	965	60	OR/BR
37.5	966	60	OR

COORD	NUMBER	DEPTH	COLOUR
3750E	429967	50	OR/BR
62.5	968	70	BR/OR
75	969	60	OR/BR
87.5	970	70	OR/BR
3800E	971	No Sample	
12.5	972	No Sample	
25	973	60	OR/BR
37.5	974	60	OR/BR
50	975	70	OR/BR
62.5	976	70	OR/BR
75	977	60	OR/BR
87.5	978	70	BR/OR
3900E	979	60	OR/BR
12.5	980	70	BR
25	981	70	BR
37.5	982	70	BR
50	983	70	BR
62.5	984	70	BR
75	985	80	BR
87.5	986	70	BR
4000E	987	No Sample	
12.5	988	70	BR
25	989	No Sample	
37.5	990	No Sample	
50	991	No Sample	
62.5	992	No Sample	
75	993	No Sample	
87.5	994	~~No sample~~	
4100E	995	No Sample	

LICENCE:

PROJECT: I ZONE!!

649316

(2)

COORD	NUMBER	DEPTH	COLOUR
6200 NORTH			
4112.5E	429996	70	OR
25	997	60	OR
37.5	998	60	OR
50	999	70	OR
62.5	430 000	70	OR/BR
75	001	80	OR/BR
87.5	002	70	OR/BR
4200E	003	50	GY
12.5	004	50	OR/BR
25	005	40	OR/BR
37.5	006	40	OR/BR
50	007	60	OR/BR
62.5	008	50	OR/BR
75	009	60	OR/BR
87.5	010	40	OR/BR
4300E	011	50	OR/BR
12.5	012	40	OR
25	013	40	OR/BR
37.5	014	40	OR
50	015	60	BR
62.5	016	50	OR
75	017	70	OR/BR
87.5	018	60	OR
4400E	019	60	OR
12.5	020	60	OR
25	021	80	OR/BR
37.5	022	70	OR
50	023	50	OR/BR

COORD	NUMBER	DEPTH	COLOUR
4462.5E	430 024	60	OR/BR
75	025	50	OR/BR
87.5	026	70	OR/BR
4500E	027	60	OR/BR
12.5	028	40	OR/BR
25	029	40	OR/BR
37.5	030	50	BR/GY
50	031	60	BR/GY
62.5	032	60	BR/GY
75	033	50	BR/GY
87.5	034	70	BR/GY
4600E	035	70	OR/GY
12.5	036	70	OR
25	037	60	OR/BR
37.5	038	50	OR
50	039	60	OR
62.5	040	60	OR
75	041	50	OR
87.5	042	70	OR/BR
4700E	043	70	OR/BR
12.5	044	70	OR/BR
25	045	60	OR/BR
37.5	046	40	OR/BR
50	047	40	OR/BR
62.5	048	40	BR
75	049	70	BR
L 87.5	050	50	BR
4800E	051	40	OR/GY/BR

649317 18·7·88

LICENCE:
PROJECT: Z ZONE

(2)

COORD	NUMBER	DEPTH	COLOUR
6400 NORTH			
3400E	430 053	60	WH/GY
125	054	70	OR/GY
25	055	80	GY/WH
37·5	056	70	OR/GY
50	057	95	BR/OR
62·5	058	70	OR
75	059	70	BR/YI
87·5	060	60	OR
3500E	061	100	OR
12·5	062	50	OR
25	063	80	BR
37·5	064	40	OR
50	065	100	BR
62·5	066	50	BR
75	067	85	BR/GY
87·5	068	60	BR
3600E	069	75	GY
12·5	070	70	BR
25	~~071~~	No Sample	5D3
37·5	072	No Sample.	
50	073	50	BR
62·5	074	No Sample	
75	075	60	GR/BR
87·5	076	70	YI/BR
3700E	077	80	BR/OR
125	078	70	YI/BR
25	079	85	OR/BR
37·5	080	60	OR/BR

COORD	NUMBER	DEPTH	COLOUR
3750E	430 081	90	BR/GR
62·5	082	60	BR/OR
75	083	85	OR
87·5	084	60	BR/OR
3800E	085	60	OR
12·5	086	60	BR/OR
25	087	80	OR
37·5	088	60	BR/OR
50	089	70	OR/BR
62·5	090	60	BR/OR
75	091	80	BR/OR
87·5	092	60	BR/OR
3900	093	60	BR/OR
12·5	094	60	BR/OR
25	095	70	OR/BR
37·5	096	60	BR/OR
50	097	90	BR/OR
62·5	098	60	BR/OR
75	099	60	BR
87·5	430 100	50	BR/OR
4000	101	70	BR
12·5	102	60	BR/OR
25	103	No Sample.	
37·5	104	No Sample.	
50	105	No Sample.	
62·5	106	60	OR
75	107	No Sample.	
87·5	108	No Sample	
4100E	109	No Sample	

649318

LICENCE:
PROJECT: I ZONE.

(2)

COORD	NUMBER	DEPTH	COLOUR
6400 NORTH			
4412.5E	430110	No Sample.	
25	111	No Sample.	
37.5	112	No Sample.	
50	113	80	OR
62.5	114	70	OR
75	115	No Sample.	
87.5	116	70	OR/BR
4200E	117	40	OR/BR
12.5	118	70	OR/BR
25	119	55	OR/BR
37.5	120	70	BR
50	121	40	OR/BR
62.5	122	70	OR/GY
75	123	60	OR
87.5	124	40	OR/BR
4300E	125	No Sample.	
12.5	126	60	OR
25	127	80	GY
37.5	128	70	BR/GY
50	129	50	GY/BR
62.5	130	70	OR/GY
75	131	75	OR
87.5	132	70	OR/GY
4400E	133	80	OR
12.5	134	60	OR/GY
25	135	60	OR/YI
37.5	136	50	YI/OR
50	137	55	OR/YI

COORD	NUMBER	DEPTH	COLOUR
4462.5E	430138	60	YI/OR
75	139	65	BR/RD
87.5	140	60	OR/RD
4500E	141	60	OR/BR
12.5	142	60	OR
25	143	60	RD/OR
37.5	144	70	OR/BR
50	145	75	OR
62.5	146	No Sample.	
75	147	85	OR/BR
87.5	148	50	OR
4600E	149	75	OR/BR
12.5	150	50	OR
25	151	55	OR/BR
37.5	152	60	OR
50	153	90	OR
62.5	154	60	OR
75	155	90	RD/OR
87.5	156	60	OR/YI
4700E	157	70	OR/BR
12.5	158	60	OR/YI
25	159	80	OR
37.5	160	70	OR
50	161	65	OR
62.5	162	70	OR/YI
75	163	20	GY/OR
87.5	164	70	GY
4800E	165	50	GY

LICENCE:
PROJECT:

649319

(2)

COORD	NUMBER	DEPTH	COLOUR
6600	Nth		
3400E	430166	60	OR/BR
12.5	167	65	Yw
25	168	No Sample	
37.5	169	35	OR/Yw
50	170	70	OR/BR
62.5	171	40	OR
75	172	100	OR
87.5	173	90	OR/BR
3500E	174	65	OR/Yw
12.5	175	70	OR/BR
25	176	No Sample	
37.5	177	60	OR/BR
50	178	No Sample	
62.5	179	80	OR
75	180	60	OR/BR
87.5	181	70	OR
3600E	182	95	OR
12.5	183	60	Yw/OR
25	184	60	OR/Rd
37.5	185	70	OR/BR
50	186	70	OR
62.5	187	90	OR/BR
75	188	100	OR
87.5	189	30	BR/Yw
3700E	190	85	OR
12.5	191	75	OR/BR
25	192	60	OR
37.5	193	60	OR/BR

COORD	NUMBER	DEPTH	COLOUR
3750E	430194	1.00	OR
62.5	195	80	OR/BR
75	196	No Sample	
87.5	197	60	OR/BR
3800E	198	70	OR
12.5	199	80	Yw/BR
25	200	90	OR
37.5	201	70	Yw/OR
50	202	100	OR
62.5	203	40	Yw/OR
75	204	100	OR
87.5	205	50	Yw/BR
3900E	206	85	OR
12.5	207	70	Yw/BR
25	208	50	OR/BR
37.5	209	60	OR/BR
50	210	60	OR/BR
62.5	211	35	BR
75	212	50	OR/BR
87.5	213	40	Yw/BR
4000E	214	70	BR
12.5	215	85	OR/BR
25	216	55	Yw/BR
37.5	217	90	OR/BR
50	218	50	OR
62.5	219	80	OR/BR
75	220	60	OR
87.5	221	70	OR
4100E	222	60	OR

LICENCE:

PROJECT:

649320

(2)

COORD	NUMBER	DEPTH	COLOUR
6600 Nth.			
4112.5E	430223	60	OR/BR
25	224	55	OR
37.5	225	No Sample	
50	226	No Sample	
62.5	227	No Sample	
75	228	No Sample	
87.5	229	No Sample	
4200E	230	No Sample	
12.5	231	No Sample	
25	232	No Sample	
37.5	233	No Sample	
50	234	60	GY/BR
62.5	235	60	Yw/BR
75	236	60	GY
87.5	237	70	Yw/BR
4300E	238	65	OR/GY
12.5	239	75	OR/BR
25	240	70	OR/GY
37.5	241	80	Yw/BR
50	242	60	OR
62.5	243	60	Yw/BR
75	244	No	Sample.
87.5	245	70	Yw/BR
4400E	246	85	OR/GY
12.5	247	60	Gy/wh
25	248	60	OR/GY
37.5	249	70	Gy/wh
50	250	45	GY

COORD	NUMBER	DEPTH	COLOUR
4462.5E	430251	80	BR
75	252	65	GY/BR
87.5	253	No Sample	
4500E	254	25	OR/BR
12.5	255	No Sample	
25	256	85	OR/Yw
37.5	257	40	Yw/BR
50	258	No Sample	
62.5	259	No Sample	
75	260	No Sample	
87.5	261	60	Yw/BR
4600E	262	70	OR/Yw
12.5	263	70	Yw/BR
25	264	No Sample	
37.5	265	50	Yw/BR
50	266	65	OR/GY
62.5	267	40	Yw/BR
75	268	80	GY/wh
87.5	269	50	Yw/BR
4700E	270	70	GY/wh
12.5	271	60	Yw/BR
25	272	80	Gy/wh
37.5	273	70	GY/wh
50	274	60	GY/BR
62.5	275	90	GY/wh
75	276	90	GY/BR
87.5	277	80	GY/wh
4800E	278	No Sample	

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COORD	NUMBER	DEPTH	COLOUR
4500	EAST.		
4500N	430310	No Sample	
12.5	311	No Sample	
25	312	50	OR/Yw
37.5	313	40	OR/BR
50	314	75	OR
62.5	315	No Sample	
75	316	60	OR/GY
87.5	317	40	Yw/BR
4600N	318	70	OR/BR
12.5	319	60	OR/BR
25	320	40	BR/GY
37.5	321	70	BR/GY
50	X 322	No Sample	SD3
62.5	323	60	GY/wh
75	324	90	GY/wh
87.5	325	30	BR
4700N	326	60	BR/GY
12.5	327	50	GY/wh
25	328	90	BR/GY
37.5	329	65	GY/BR
50	330	55	GY
62.5	331	70	GY/BR
75	332	50	GY
87.5	333	35	BR
4800N	334	60	GY
4842.5	335	50	GY/BR
25	336	40	BR/GY
4837.5	337	40	BR/GY

COORD	NUMBER	DEPTH	COLOUR
4850N	430338	50	GY/BR
62.5	339	80	BR
75	340	40	GY/BR
87.5	341	70	GY/wh
4900N	342	90	GY/BR
12.5	343	60	GY/wh
25	344	40	GY/wh
37.5	345	45	GY/BR
50	346	50	GY/wh
62.5	347	50	GY/BR
75	348	50	GY
87.5	349	40	BR
5000N	350	~~No Sample~~	SAMPLE OUTS
12.5	351	40	GY
25	352	30	GY/BR
37.5	353	60	GY
50	354	40	GY/BR
62.5	355	70	OR
75	356	60	Yw/BR
87.5	357	70	OR
5100N	358	70	OR/BR
12.5	359	70	OR
25	360	80	Yw/BR
37.5	361	70	OR
50	362	60	Yw/BR
62.5	363	70	OR/RD
75	364	40	Yw/BR
87.5	365	70	OR
5200N	430366	50	Yw/BR

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COORD	NUMBER	DEPTH	COLOUR
4500	EAST		
5212.5N	430367	70	OR
25	368	60	Yw/BR
37.5	369	70	OR/BR
50	370	60	Yw/BR
62.5	371	80	OR
75	372	40	Yw/BR
87.5	373	80	OR/BR
5300N	374	70	Yw/BR
12.5	375	90	GY/BR
25	376	80	OR/BR
37.5	377	No Sample	
50	378	60	OR/Yw
62.5	379	70	OR/BR
75	380	40	OR/BR
87.5	381	70	OR/BR
5400N	382	60	GY/BR
12.5	383	70	BR/GY
25	384	70	OR/BR
37.5	385	70	BR/GY
50	386	60	OR/BR
62.5	387	70	BR/OR
75	388	70	OR/Yw
87.5	389	60	BR/OR
5500N	390	60	OR
12.5	391	50	OR/BR
25	392	80	BR
37.5	393	60	OR/BR
5550N	394	70	BR/OR

COORD	NUMBER	DEPTH	COLOUR
5562.5N	430395	75	BR/OR
75	396	70	BR/OR
87.5	397	75	BR/OR
5600N	398	40	OR/BR
12.5	399	60	OR/BR
25	400	30	BR
37.5	401	70	BR/OR
50	402	50	OR/BR
62.5	403	65	BR/OR
75	404	70	Yw/BR
87.5	405	70	BR/OR
5700N	406	80	OR/Yw
12.5	407	100	OR/BR
25	408	90	OR/BR
37.5	409	60	BR
50	410	60	Yw/BR
62.5	411	50	GY/BR
75	412	70	Yw/BR
87.5	413	70	OR/BR
5800N	414	30	BR
12.5	415	20	OR/BR
25	416	30	BR/Yw
37.5	417	40	Yw/BR
50	418	50	Yw/BR
62.5	419	70	Yw/BR
75	420	40	Yw/BR
87.5	421	70	OR/Yw/BR
5900N	422	60	Yw/BR

LICENCE:
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COORD	NUMBER	DEPTH	COLOUR
4500 EAST			
5912.5E	430 423	50	BR
25	424	50	Yl/BR
37.5	425	40	OR/BR
50	426	NO SAMPLE	
62.5	427	60	GY/BR
75	428	60	BK/BR
87.5	429	60	BR
6000N	430	70	BR
12.5	431	70	Yw/BR
25	432	40	Yl/BR
37.5	433	40	Yw/BR
50	434	40	Yl/BR
62.5	435	70	Yw/BR
75	436	70	Yl/BR
87.5	437	60	Yw/BR
6100N	438	40	Yl/BR
12.5	439	50	OR/BR
25	440	70	Yl/BR
37.5	441	80	OR/BR
50	442	80	Yl/BR
62.5	443	90	Yw/OR/BR
75	444	70	Yl/BR
87.5	445	90	Yw/OR/BR
6200N	446	40	Yl/BR
12.5	447	80	Yw/OR/BR
25	448	30	Yl/BR
37.5	449	50	Yw/OR/BR
50	450	40	Yl/BR

COORD	NUMBER	DEPTH	COLOUR
6262.5N	430 451	60	OR
75	452	40	Yl/OR
87.5	453	70	OR/BR
6300N	454	70	OR/Yl
12.5	455	35	Yw/OR
25	456	15	BK
37.5	457	25	GY/BK
50	458	70	BK
62.5	459	70	BK
75	460	60	OR/BR
87.5	461	70	OR/BR
6400N	462	70	OR/BR
12.5	463	50	OR/BR
25	464	60	BR/Yl
37.5	465	30	OR/BR
50	466	10	Gy/WH
62.5	467	20	GY
75	468	60	BK
87.5	469	60	GY/BR
6500N	470	40	Yl/BR
12.5	471	70	Yw/BR
25	472	50	Yl/BR
37.5	473	40	OR/Yw
50	474	60	Yl/BR
62.5	475	50	Yw/OR/BR
75	476	60	Gy/WH
87.5	477	60	BR.
6600N.	478	60	BK

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A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8870

ANALYTICAL REPORT No. 23.3.08.05698

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
4820	

DATE RECEIVED	RESULTS REQUIRED
02/09/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
27	09/11/88	1	662

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	80	Prep: 016						Cu,Pb,Zn,Ag/101		
	Various	80							As/114,Ba,Cr,Zr,Ti/401,Au/309		
	Various	80	Prep: 016						Cu,Pb,Zn,Ag/101		
	Various	80							As/114,Ba,Cr,Zr,Ti/401,Au/309		
	Various	80	Prep: 016						Cu,Pb,Zn,Ag/101		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	1 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	428801	5	55	–	35	<0.5	–	3		
2	428803	<5	60	–	40	<0.5	–	4		
3	428805	25	180	–	135	<0.5	–	26		
4	428807	10	200	–	105	<0.5	–	17		
5	428809	25	280	–	145	<0.5	–	38		
6	428811	30	320	–	160	<0.5	–	35		
7	428813	40	340	–	170	<0.5	–	40		
8	428815	40	345	–	155	<0.5	–	46		
9	428817	40	530	–	145	<0.5	–	46		
10	428819	35	400	–	195	<0.5	–	22		
11	428821	35	355	–	300	<0.5	–	14		
12	428825	30	115	–	120	<0.5	–	14		
13	428827	35	155	–	165	<0.5	–	4		
14	428829	25	160	–	125	<0.5	–	10		
15	428833	50	110	–	230	<0.5	–	15		
16	428835	10	65	–	85	<0.5	–	11		
17	428837	10	55	–	135	<0.5	–	10		
18	428839	10	50	–	80	<0.5	–	18		
19	428841	5	30	–	75	<0.5	–	4		
20	428858	20	155	–	70	<0.5	–	49		
21	428860	20	205	–	85	<0.5	–	62		
22	428864	15	460	–	95	1.0	–	56		
23	428866	25	530	–	105	0.5	–	80		
24	428868	35	550	–	140	1.0	–	45		
25	428870	35	420	–	130	0.5	–	51		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	2 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	428872	35	340	–	120	<0.5	–	58		
2	428874	5	65	–	50	<0.5	–	6		
3	428876	35	420	–	105	<0.5	–	71		
4	428878	30	365	–	105	1.0	–	54		
5	428886	15	490	–	50	–	10	80		
6	428890	65	255	–	120	8.0	–	270		
7	428892	20	280	–	65	5.5	–	120		
8	428894	10	165	–	40	–	9	47		
9	428896	35	525	–	160	5.0	–	170		
10	428898	10	95	–	70	<0.5	–	68		
11	428901	25	45	–	85	7.0	–	300		
12	428903	15	180	–	60	–	35	80		
13	428905	5	75	–	40	–	19	57		
14	428907	25	40	–	55	–	13	160		
15	428911	15	300	–	65	–	12	50		
16	428913	10	160	–	50	10.0	–	43		
17	428921	5	310	–	40	6.5	–	22		
18	428923	5	185	–	55	9.0	–	18		
19	428925	5	65	–	40	7.5	–	18		
20	428927	5	530	–	50	8.0	–	6		
21	428929	20	55	–	70	5.0	–	66		
22	428933	40	185	–	65	–	10	140		
23	428935	<5	160	–	40	7.5	–	17		
24	428937	<5	105	–	40	5.0	–	14		
25	428939	<5	190	–	50	–	17	18		

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	3 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	428946	20	30	–	125	<0.5	–	21		
2	428954	25	25	–	80	<0.5	–	5		
3	428958	35	30	–	95	0.5	–	7		
4	428960	30	30	–	95	0.5	–	6		
5	428962	10	25	–	55	<0.5	–	3		
6	428966	25	35	–	80	<0.5	–	6		
7	428968	25	25	–	65	<0.5	–	8		
8	428972	<5	45	–	25	<0.5	–	6		
9	428974	<5	50	–	30	<0.5	–	7		
10	428976	10	55	–	60	<0.5	–	11		
11	428978	15	100	–	60	<0.5	–	19		
12	428980	20	115	–	85	<0.5	–	20		
13	428982	15	130	–	65	<0.5	–	15		
14	428984	10	90	–	50	<0.5	–	16		
15	428986 * STD	25	195	–	160	<0.5	–	74		
16	428988	40	50	–	185	–	13	270		
17	428990	25	75	–	95	5.0	–	470		
18	428992	20	455	–	90	2.0	–	400		
19	428994	40	–	1500	135	2.0	–	530		
20	428996	25	615	–	100	2.0	–	220		
21	428998	25	995	–	70	5.5	–	480		
22	429000	10	445	–	40	8.0	–	25		
23	429002	20	190	–	50	<0.5	–	120		
24	429004	<5	95	–	30	1.5	–	9		
25	429008	<5	255	–	35	1.0	–	12		

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	4 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429010	<5	165	–	45	2.5	–	9		
2	429012	<5	155	–	40	1.0	–	13		
3	429014	<5	180	–	35	2.0	–	8		
4	429016	<5	90	–	55	0.5	–	15		
5	429018	20	45	–	70	–	14	330		
6	429020	15	45	–	40	5.5	–	150		
7	429024	20	95	–	40	2.0	–	100		
8	429025	10	80	–	35	2.0	–	60		
9	429027	<5	20	–	25	<0.5	–	14		
10	429031	<5	35	–	20	<0.5	–	6		
11	429033	<5	55	–	25	<0.5	–	5		
12	429035	<5	45	–	20	<0.5	–	7		
13	429037	<5	35	–	25	<0.5	–	2		
14	429039	<5	35	–	25	<0.5	–	2		
15	429041	<5	30	–	25	<0.5	–	1		
16	429043	<5	25	–	20	<0.5	–	2		
17	429045	<5	25	–	20	<0.5	–	2		
18	429047	<5	25	–	25	<0.5	–	3		
19	429049	<5	30	–	25	<0.5	–	6		
20	429051	<5	30	–	25	<0.5	–	5		
21	429064	35	45	–	150	<0.5	–	3		
22	429066	40	50	–	160	<0.5	–	3		
23	429070	10	60	–	70	<0.5	–	4		
24	429072	5	75	–	50	<0.5	–	8		
25	429076	15	120	–	115	<0.5	–	12		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	5 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429078	25	85	–	170	1.0	–	45		
2	429080	15	70	–	160	<0.5	–	56		
3	429082	30	75	–	150	<0.5	–	42		
4	429084	15	50	–	85	<0.5	–	57		
5	429086	20	85	–	65	<0.5	–	180		
6	429088	20	75	–	50	<0.5	–	1100		
7	429092	15	65	–	100	<0.5	–	80		
8	429094	15	55	–	160	0.5	–	27		
9	429096	5	40	–	25	<0.5	–	34		
10	429098	5	35	–	40	<0.5	–	22		
11	429100	<5	35	–	25	<0.5	–	77		
12	429102	<5	15	–	25	<0.5	–	18		
13	429104	<5	50	–	30	<0.5	–	7		
14	429106	<5	25	–	20	<0.5	–	5		
15	429108	<5	35	–	25	0.5	–	5		
16	429110	<5	30	–	25	<0.5	–	25		
17	429114	<5	50	–	25	<0.5	–	11		
18	429116	<5	20	–	20	<0.5	–	10		
19	429118	<5	35	–	25	<0.5	–	40		
20	429120 *3	20	190	–	160	<0.5	–	60		
21	429122	<5	75	–	35	1.0	–	13		
22	429126	5	85	–	55	1.5	–	46		
23	429128	<5	80	–	25	2.0	–	9		
24	429132	<5	70	–	25	1.0	–	6		
25	429133	30	240	–	115	0.5	–	12		

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	6 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429135	20	140	–	160	<0.5	–	24		
2	429139	25	480	–	105	<0.5	–	37		
3	429141	5	40	–	190	<0.5	–	17		
4	429143	10	45	–	120	<0.5	–	19		
5	429145	20	65	–	160	<0.5	–	130		
6	429147	5	60	–	150	<0.5	–	70		
7	429149	10	55	–	120	<0.5	–	67		
8	429151	15	55	–	115	<0.5	–	150		
9	429153	25	75	–	105	<0.5	–	230		
10	429155	10	75	–	125	<0.5	–	41		
11	429157	10	135	–	85	3.5	–	46		
12	429159	<5	40	–	30	<0.5	–	12		
13	429161	<5	35	–	25	<0.5	–	7		
14	429163	<5	40	–	25	<0.5	–	110		
15	429167	<5	40	–	30	<0.5	–	4		
16	429169	<5	30	–	25	<0.5	–	5		
17	429173	<5	40	–	30	<0.5	–	4		
18	429175	<5	70	–	35	<0.5	–	6		
19	429177	<5	30	–	35	<0.5	–	2		
20	429179	<5	60	–	35	<0.5	–	3		
21	429181	<5	55	–	35	<0.5	–	7		
22	429183	20	30	–	15	<0.5	–	31		
23	429185	15	25	–	15	0.5	–	16		
24	429187	20	50	–	15	<0.5	–	4		
25	429191	10	50	–	20	2.5	–	3		

Results in ppm unless otherwise specified
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	7 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429193 ~~ISD~~	25	240	–	220	<0.5	–	54		
2	429195	5	20	–	25	<0.5	–	26		
3	429201	15	20	–	45	<0.5	–	11		
4	429203	<5	20	–	25	<0.5	–	2		
5	429205	30	20	–	50	<0.5	–	4		
6	429207	5	20	–	35	<0.5	–	8		
7	429209	35	55	–	95	<0.5	–	12		
8	429211	30	45	–	130	<0.5	–	8		
9	429213	10	45	–	50	<0.5	–	11		
10	429215	10	35	–	60	<0.5	–	16		
11	429217	40	70	–	80	<0.5	–	17		
12	429219	30	85	–	120	<0.5	–	23		
13	429221	35	75	–	140	<0.5	–	26		
14	429222	15	125	–	65	1.5	–	62		
15	429224	<5	115	–	35	0.5	–	25		
16	429226	<5	125	–	40	1.0	–	330		
17	429228	<5	120	–	45	<0.5	–	70		
18	429230	<5	35	–	25	<0.5	–	9		
19	429232	<5	40	–	20	<0.5	–	9		
20	429234	<5	35	–	20	<0.5	–	4		
21	429236	<5	35	–	25	<0.5	–	3		
22	429238	<5	55	–	35	<0.5	–	6		
23	429240	<5	50	–	40	1.5	–	11		
24	429242	<5	45	–	35	1.5	–	48		
25	429244	<5	45	–	15	<0.5	–	25		

Results in ppm unless otherwise specified
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— = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	8 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429248	<5	30	–	20	<0.5	–	4		
2	429250	5	25	–	20	<0.5	–	3		
3	429252	15	25	–	35	<0.5	–	3		
4	429254	10	25	–	25	<0.5	–	2		
5	429256	10	25	–	20	<0.5	–	1		
6	429258	5	25	–	20	<0.5	–	1		
7	429260	25	40	–	35	<0.5	–	<1		
8	429262	5	25	–	25	<0.5	–	2		
9	429264	20	25	–	40	<0.5	–	2		
10	429266 * STD	20	185	–	165	<0.5	–	51		
11	429270	15	35	–	25	<0.5	–	10		
12	429272	15	60	–	50	<0.5	–	52		
13	429278	10	70	–	40	<0.5	–	74		
14	429280	10	30	–	45	<0.5	–	6		
15	429284	60	90	–	85	<0.5	–	160		
16	429311	25	180	–	90	<0.5	–	49		
17	429313 * STD	25	190	–	160	0.5	–	55		
18	429315	10	45	–	95	<0.5	–	26		
19	429317	<5	110	–	35	<0.5	–	6		
20	429319	<5	70	–	20	<0.5	–	2		
21	429321	5	35	–	25	<0.5	–	6		
22	429323	10	25	–	20	<0.5	–	3		
23	429325	<5	20	–	25	<0.5	–	2		
24	429327	15	10	–	25	<0.5	–	16		
25	429329	<5	35	–	25	<0.5	–	7		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	9 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429331	<5	60	–	20	<0.5	–	21		
2	429335	5	45	–	20	<0.5	–	48		
3	429337	10	100	–	40	<0.5	–	20		
4	429339	5	130	–	40	<0.5	–	14		
5	429345	15	75	–	45	<0.5	–	30		
6	429347	35	130	–	75	<0.5	–	67		
7	429352	50	90	–	80	<0.5	–	58		
8	429354	40	45	–	55	<0.5	–	24		
9	429356	15	30	–	50	<0.5	–	69		
10	429358	<5	30	–	20	<0.5	–	8		
11	429360	<5	55	–	20	<0.5	–	6		
12	429362	10	55	–	40	<0.5	–	8		
13	429364	30	70	–	145	<0.5	–	140		
14	429366	20	35	–	150	<0.5	–	59		
15	429368	75	55	–	220	<0.5	–	80		
16	429370	30	45	–	135	0.5	–	36		
17	429372	65	45	–	140	0.5	–	36		
18	429374	20	50	–	70	<0.5	–	16		
19	429376	25	35	–	85	<0.5	–	16		
20	429378	10	30	–	70	<0.5	–	3		
21	429380	10	30	–	70	<0.5	–	4		
22	429382	15	40	–	90	<0.5	–	6		
23	429383	25	50	–	95	<0.5	–	5		
24	429385	35	85	–	150	0.5	–	8		
25	429387	40	95	–	155	<0.5	–	10		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
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TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429389	70	240	–	410	1.0	–	12		
2	429391	25	95	–	130	<0.5	–	6		
3	429393	65	125	–	230	<0.5	–	9		
4	429395	60	300	–	385	<0.5	–	12		
5	429397	55	190	–	285	0.5	–	10		
6	429402	5	80	–	40	<0.5	–	76		
7	429408	10	110	–	45	<0.5	–	17		
8	429410	15	70	–	45	<0.5	–	10		
9	429412	<5	35	–	25	<0.5	–	27		
10	429414	<5	35	–	20	1.0	–	480		
11	429416	<5	25	–	20	0.5	–	18		
12	429418	<5	35	–	25	1.0	–	39		
13	429422	<5	20	–	20	1.0	–	8		
14	429424	<5	20	–	20	<0.5	–	10		
15	429428	<5	25	–	20	<0.5	–	9		
16	429432	35	120	–	80	<0.5	–	57		
17	429434	80	110	–	95	<0.5	–	320		
18	429436	30	90	–	60	<0.5	–	48		
19	429438	15	60	–	40	<0.5	–	35		
20	429440	115	65	–	120	<0.5	–	230		
21	429442	40	65	–	65	<0.5	–	100		
22	429444	55	50	–	110	<0.5	–	54		
23	429446	15	55	–	60	<0.5	–	30		
24	429450	<5	15	–	25	<0.5	–	9		
25	429452	5	35	–	30	<0.5	–	45		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	11 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429454	<5	30	–	25	<0.5	–	18		
2	429456	<5	20	–	40	<0.5	–	17		
3	429458	15	25	–	80	<0.5	–	34		
4	429460	15	40	–	105	<0.5	–	38		
5	429462	20	40	–	100	<0.5	–	20		
6	429487	<5	45	–	20	<0.5	–	6		
7	429489	<5	20	–	25	<0.5	–	2		
8	429491	<5	45	–	25	<0.5	–	2		
9	429495	10	200	–	95	<0.5	–	7		
10	429499	15	235	–	130	0.5	–	16		
11	429501	10	320	–	90	0.5	–	41		
12	429503	10	340	–	130	<0.5	–	44		
13	429505	10	185	–	105	<0.5	–	17		
14	429507	5	380	–	80	<0.5	–	52		
15	429509	10	750	–	95	<0.5	–	60		
16	429511	<5	390	–	65	<0.5	–	58		
17	429521	<5	40	–	55	<0.5	–	7		
18	429525	<5	15	–	60	<0.5	–	2		
19	429527	<5	45	–	20	<0.5	–	8		
20	429529	<5	<5	–	25	<0.5	–	10		
21	429531	<5	60	–	95	0.5	–	12		
22	429533	<5	45	–	30	<0.5	–	12		
23	429535	<5	40	–	25	<0.5	–	6		
24	429537	<5	30	–	35	<0.5	–	2		
25	429539	<5	30	–	35	<0.5	–	2		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	12 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429541	<5	70	–	40	<0.5	–	17		
2	429543	<5	75	–	40	<0.5	–	16		
3	429545	<5	40	–	30	<0.5	–	29		
4	429547	10	55	–	50	<0.5	–	26		
5	429549	40	80	–	65	0.5	–	48		
6	429551	135	80	–	160	1.0	–	33		
7	429553	20	<5	–	45	<0.5	–	13		
8	429555	20	<5	–	50	<0.5	–	16		
9	429557	45	60	–	65	0.5	–	31		
10	429559	20	45	–	45	<0.5	–	62		
11	429561	<5	10	–	30	<0.5	–	28		
12	429563	<5	<5	–	45	<0.5	–	8		
13	429565	<5	<5	–	105	<0.5	–	15		
14	429567	<5	<5	–	40	<0.5	–	6		
15	429569	30	40	–	155	0.5	–	23		
16	429571	20	40	–	105	<0.5	–	10		
17	429573	5	100	–	50	<0.5	–	5		
18	429577	20	95	–	155	<0.5	–	7		
19	429581	45	145	–	170	<0.5	–	5		
20	429583	30	75	–	130	<0.5	–	6		
21	429585	35	55	–	190	<0.5	–	4		
22	429587	30	95	–	140	<0.5	–	3		
23	429589	65	60	–	250	<0.5	–	13		
24	429591	35	35	–	135	<0.5	–	4		
25	429595	50	90	–	250	<0.5	–	23		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	13 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429597	95	135	–	205	<0.5	–	12		
2	429599	55	85	–	170	<0.5	–	8		
3	429600	60	90	–	155	1.0	–	15		
4	429602	25	260	–	75	<0.5	–	13		
5	429604	25	290	–	80	<0.5	–	13		
6	429606	30	310	–	85	<0.5	–	14		
	429608	55	100	–	145	1.0	–	14		
8	429610	50	105	–	140	1.0	–	13		
9	429612	60	80	–	140	0.5	–	12		
10	429614	50	90	–	130	0.5	–	12		
11	429616	55	100	–	150	1.0	–	12		
12	429618	35	105	–	110	<0.5	–	11		
13	429620	75	175	–	160	0.5	–	13		
14	429622	50	120	–	140	<0.5	–	10		
15	429624	55	90	–	150	1.0	–	14		
16	429626	60	130	–	145	0.5	–	14		
	429628	10	60	–	40	<0.5	–	5		
18	429630	5	60	–	35	<0.5	–	4		
19	429642	<5	20	–	40	<0.5	–	3		
20	429644	<5	15	–	30	<0.5	–	5		
21	429646	<5	15	–	50	<0.5	–	5		
22	429648	<5	15	–	20	<0.5	–	2		
23	429650	<5	15	–	30	<0.5	–	5		
24	429662	45	70	–	140	<0.5	–	29		
25	429666 X STD	15	195	–	160	<0.5	–	66		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	14 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429668	5	40	–	105	<0.5	–	5		
2	429670	5	<5	–	75	<0.5	–	4		
3	429672	5	<5	–	90	<0.5	–	3		
4	429674	5	<5	–	80	<0.5	–	3		
5	429676	5	<5	–	95	<0.5	–	3		
6	429678	15	85	–	70	<0.5	–	4		
7	429680	15	90	–	80	<0.5	–	4		
8	429682	20	100	–	100	<0.5	–	4		
9	429684	15	95	–	80	<0.5	–	4		
10	429686	15	95	–	75	<0.5	–	4		
11	429688	35	75	–	90	<0.5	–	10		
12	429690	30	75	–	85	<0.5	–	10		
13	429692	35	85	–	90	<0.5	–	10		
14	429694	30	70	–	85	<0.5	–	10		
15	429696	30	80	–	85	<0.5	–	9		
16	429698	30	150	–	150	<0.5	–	14		
17	429700	35	180	–	165	<0.5	–	16		
18	429702	35	200	–	150	<0.5	–	19		
19	429704	25	190	–	140	<0.5	–	19		
20	429706	20	280	–	185	<0.5	–	12		
21	429708	35	395	–	315	<0.5	–	16		
22	429710	40	425	–	370	<0.5	–	16		
23	429712	35	320	–	285	<0.5	–	17		
24	429713	5	30	–	20	<0.5	–	6		
25	429715	20	30	–	30	<0.5	–	14		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	15 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429717	<5	25	–	20	<0.5	–	3		
2	429719	10	45	–	50	<0.5	–	8		
3	429721	5	45	–	40	<0.5	–	7		
4	429723	20	50	–	65	0.5	–	11		
5	429729	20	35	–	65	1.0	–	6		
6	429731	40	40	–	70	1.0	–	8		
[illegible]	429735	50	45	–	105	0.5	–	13		
8	429737	20	40	–	65	0.5	–	9		
9	429739	85	30	–	120	0.5	–	8		
10	429741	20	40	–	70	<0.5	–	35		
11	429743	15	30	–	45	<0.5	–	7		
12	429745	5	5	–	30	<0.5	–	9		
13	429747	10	35	–	80	<0.5	–	10		
14	429749	15	40	–	90	<0.5	–	10		
15	429759	5	15	–	45	<0.5	–	5		
16	429761	<5	<5	–	35	<0.5	–	5		
[illegible]	429763	<5	<5	–	25	<0.5	–	2		
18	429765	<5	<5	–	20	<0.5	–	1		
19	429767	<5	15	–	65	<0.5	–	7		
20	429769	<5	75	–	35	<0.5	–	4		
21	429771	5	10	–	70	<0.5	–	7		
22	429787	5	10	–	60	<0.5	–	4		
23	429789	5	15	–	40	<0.5	–	2		
24	429791	5	10	–	40	<0.5	–	4		
25	429793	10	25	–	60	<0.5	–	5		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	16 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429795	15	50	–	60	<0.5	–	4		
2	429797	15	85	–	70	<0.5	–	6		
3	429799	15	110	–	85	<0.5	–	6		
4	429801	20	80	–	110	<0.5	–	4		
5	429803	25	75	–	80	<0.5	–	6		
6	429805	20	120	–	75	<0.5	–	8		
7	429811	35	75	–	90	1.0	–	5		
8	429813	50	255	–	140	0.5	–	6		
9	429815	50	210	–	125	0.5	–	8		
10	429817	50	120	–	140	1.0	–	5		
11	429819	65	125	–	165	0.5	–	4		
12	429821	60	115	–	150	0.5	–	7		
13	429823	65	130	–	180	1.5	–	6		
14	429825	35	80	–	120	<0.5	–	6		
15	429826	5	65	–	25	<0.5	–	8		
16	429828	5	65	–	30	<0.5	–	6		
17	429830	5	80	–	30	<0.5	–	11		
18	429832	15	85	–	45	<0.5	–	34		
19	429834	35	80	–	55	<0.5	–	90		
20	429836	20	80	–	95	<0.5	–	11		
21	429838	20	65	–	70	<0.5	–	15		
22	429840	20	55	–	75	<0.5	–	11		
23	429842	20	90	–	120	<0.5	–	7		
24	429844	20	55	–	65	<0.5	–	11		
25	429846 *503	20	160	–	160	0.5	–	80		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	17 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429848	10	45	–	45	<0.5	–	3		
2	429850	15	40	–	75	<0.5	–	6		
3	429852	50	165	–	135	0.5	–	20		
4	429854	35	155	–	85	<0.5	–	16		
5	429856	30	65	–	80	<0.5	–	11		
6	429858	20	50	–	90	<0.5	–	10		
7	429862	10	35	–	75	<0.5	–	8		
8	429864	5	30	–	65	<0.5	–	7		
9	429866	10	25	–	65	<0.5	–	5		
10	429876	5	35	–	40	<0.5	–	7		
11	429878	10	35	–	50	<0.5	–	4		
12	429880	10	45	–	55	<0.5	–	6		
13	429882	10	40	–	80	<0.5	–	11		
14	429884	25	210	–	110	<0.5	–	79		
15	429886	35	80	–	210	<0.5	–	38		
16	429888	40	70	–	120	<0.5	–	7		
17	429890	35	65	–	110	<0.5	–	6		
18	429894	35	65	–	115	<0.5	–	5		
19	429896	30	60	–	115	<0.5	–	3		
20	429898	45	85	–	105	<0.5	–	6		
21	429900	40	160	–	215	<0.5	–	6		
22	429902	35	100	–	130	<0.5	–	7		
23	429904	40	95	–	130	<0.5	–	7		
24	429906	35	125	–	150	<0.5	–	7		
25	429908	30	120	–	125	<0.5	–	7		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	18 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429910	25	155	–	110	<0.5	–	8		
2	429912	30	90	–	90	<0.5	–	5		
3	429914	35	145	–	195	<0.5	–	9		
4	429916	40	125	–	160	<0.5	–	10		
5	429918	40	75	–	65	<0.5	–	8		
6	429920	25	50	–	45	<0.5	–	10		
7	429922	30	60	–	50	<0.5	–	8		
8	429924	50	70	–	110	<0.5	–	6		
9	429926	35	70	–	105	<0.5	–	4		
10	429928	35	110	–	115	<0.5	–	6		
11	429936	50	45	–	90	<0.5	–	6		
12	429938	50	45	–	105	<0.5	–	6		
13	429939	<5	20	–	30	<0.5	–	3		
14	429945	<5	25	–	60	<0.5	–	2		
15	429947	<5	20	–	45	<0.5	–	3		
16	429949	<5	30	–	25	<0.5	–	2		
17	429951	<5	10	–	30	<0.5	–	2		
18	429955	10	55	–	40	<0.5	–	6		
19	429959	50	255	–	115	<0.5	–	16		
20	429961	35	95	–	70	<0.5	–	8		
21	429963	55	85	–	70	<0.5	–	10		
22	429965	50	90	–	80	<0.5	–	10		
23	429967	45	85	–	95	<0.5	–	11		
24	429969	40	160	–	135	<0.5	–	12		
25	429973	<5	25	–	35	<0.5	–	2		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	19 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	429975	<5	25	–	45	<0.5	–	2		
2	429977	<5	15	–	45	<0.5	–	2		
3	429979	<5	30	–	50	<0.5	–	4		
4	429981	<5	25	–	70	<0.5	–	4		
5	429983	<5	25	–	75	<0.5	–	5		
6	429985	<5	20	–	75	<0.5	–	8		
7	429997	15	75	–	80	<0.5	–	8		
8	429999	<5	410	–	90	<0.5	–	11		
9	430001	<5	60	–	60	<0.5	–	10		
10	430003	<5	35	–	35	<0.5	–	2		
11	430005	10	115	–	90	<0.5	–	16		
12	430007	10	125	–	105	<0.5	–	9		
13	430009	15	115	–	110	<0.5	–	6		
14	430011	35	75	–	105	<0.5	–	20		
15	430013	40	185	–	200	<0.5	–	11		
16	430015	20	165	–	145	<0.5	–	6		
17	430017	25	280	–	165	<0.5	–	9		
18	430019	40	335	–	215	<0.5	–	11		
19	430021	30	265	–	190	<0.5	–	10		
20	430023	30	275	–	195	<0.5	–	9		
21	430025	30	275	–	190	<0.5	–	10		
22	430027	25	270	–	190	<0.5	–	10		
23	430029	25	360	–	205	<0.5	–	7		
24	430031	15	50	–	95	<0.5	–	2		
25	430033	20	85	–	75	<0.5	–	4		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	20 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430035	15	45	–	55	<0.5	–	3		
2	430037	25	45	–	55	<0.5	–	4		
3	430039	15	35	–	65	<0.5	–	3		
4	430041	15	30	–	55	<0.5	–	2		
5	430043	20	40	–	55	<0.5	–	3		
6	430045	20	40	–	55	<0.5	–	3		
7	430047	20	45	–	55	<0.5	–	4		
8	430049	25	45	–	60	<0.5	–	4		
9	430051	25	50	–	70	<0.5	–	4		
10	430053	<5	15	–	35	<0.5	–	2		
11	430055	<5	15	–	35	<0.5	–	6		
12	430057	5	35	–	25	<0.5	–	19		
13	430059	30	55	–	55	<0.5	–	20		
14	430061	45	80	–	75	<0.5	–	26		
15	430063	25	75	–	50	<0.5	–	22		
16	430065	15	45	–	30	<0.5	–	8		
17	430067	15	55	–	35	<0.5	–	6		
18	430069	10	70	–	70	<0.5	–	13		
19	430071 *STD	20	195	–	165	<0.5	–	90		
20	430073	10	440	–	115	<0.5	–	12		
21	430075	10	190	–	85	<0.5	–	10		
22	430077	25	200	–	145	<0.5	–	10		
23	430079	60	210	–	245	<0.5	–	9		
24	430081	70	315	–	315	<0.5	–	12		
25	430083	30	350	–	120	<0.5	–	15		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	21 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430085	20	335	–	125	<0.5	–	12		
2	430087	20	110	–	125	<0.5	–	9		
3	430089	15	40	–	85	<0.5	–	4		
4	430091	20	50	–	70	<0.5	–	5		
5	430093	15	25	–	80	<0.5	–	4		
6	430095	25	35	–	75	<0.5	–	6		
7	430097	30	40	–	75	<0.5	–	9		
8	430099	15	45	–	50	<0.5	–	11		
9	430101	20	135	–	70	<0.5	–	3		
10	430113	5	15	–	35	<0.5	–	5		
11	430117	10	40	–	50	<0.5	–	11		
12	430119	15	15	–	60	<0.5	–	8		
13	430121	15	50	–	125	<0.5	–	6		
14	430123	35	335	–	125	<0.5	–	7		
15	430127	15	80	–	90	<0.5	–	4		
16	430129	10	80	–	70	<0.5	–	3		
17	430131	15	30	–	60	<0.5	–	5		
18	430133	20	35	–	95	<0.5	–	24		
19	430135	15	50	–	80	<0.5	–	8		
20	430137	<5	50	–	50	<0.5	–	1		
21	430139	20	60	–	80	<0.5	–	4		
22	430141	45	905	–	165	<0.5	–	12		
23	430143	45	85	–	95	<0.5	–	12		
24	430145	30	90	–	75	<0.5	–	10		
25	430147	35	45	–	70	<0.5	–	8		

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	22 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430149	30	65	–	110	<0.5	–	7		
2	430151	30	50	–	65	<0.5	–	8		
3	430153	35	45	–	135	<0.5	–	19		
4	430155	70	250	–	140	<0.5	–	26		
5	430157	30	50	–	55	<0.5	–	26		
6	430159	35	25	–	55	<0.5	–	38		
7	430161	20	30	–	60	<0.5	–	28		
8	430163	15	15	–	25	<0.5	–	14		
9	430165	10	<5	–	30	<0.5	–	13		
10	430166	135	155	–	190	<0.5	–	17		
11	430170	65	170	–	110	<0.5	–	22		
12	430172	80	115	–	165	<0.5	–	24		
13	430174	55	95	–	115	<0.5	–	21		
14	430180	70	195	–	180	<0.5	–	29		
15	430182	110	330	–	250	<0.5	–	71		
16	430184	60	310	–	180	<0.5	–	20		
17	430186	160	140	–	140	<0.5	–	12		
18	430188	145	135	–	130	<0.5	–	12		
19	430190	90	105	–	90	<0.5	–	14		
20	430192	85	100	–	90	<0.5	–	15		
21	430194	90	120	–	110	<0.5	–	14		
22	430198	75	105	–	100	<0.5	–	10		
23	430200	140	460	–	270	<0.5	–	10		
24	430202	95	265	–	145	<0.5	–	11		
25	430204	75	195	–	150	<0.5	–	4		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	23 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430206	60	160	–	170	<0.5	–	5		
2	430208	60	160	–	110	<0.5	–	6		
3	430210	95	335	–	190	<0.5	–	8		
4	430212	75	160	–	125	<0.5	–	8		
5	430214	180	275	–	600	<0.5	–	7		
6	430216	105	225	–	305	<0.5	–	5		
7	430218	90	200	–	305	<0.5	–	5		
8	430220	80	160	–	205	<0.5	–	8		
9	430222	50	175	–	120	<0.5	–	7		
10	430224	45	90	–	90	<0.5	–	5		
11	430226 3 #5700	20	220	–	195	<0.5	–	54		
12	430234	25	90	–	85	<0.5	–	6		
13	430236	50	50	–	85	<0.5	–	5		
14	430238	55	40	–	85	<0.5	–	4		
15	430240	45	50	–	60	<0.5	–	7		
16	430242	40	120	–	90	<0.5	–	13		
17	430246	30	140	–	120	<0.5	–	6		
18	430248	20	60	–	75	<0.5	–	8		
19	430250	20	50	–	90	<0.5	–	8		
20	430252	15	30	–	85	<0.5	–	4		
21	430254	15	25	–	85	<0.5	–	26		
22	430256	20	90	–	60	<0.5	–	9		
23	430262	30	75	–	105	<0.5	–	11		
24	430266	30	30	–	140	<0.5	–	17		
25	430268	15	75	–	70	<0.5	–	22		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4620	24 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430270	15	75	–	75	<0.5	–	23		
2	430272	15	20	–	25	<0.5	–	41		
3	430274	5	20	–	20	<0.5	–	4		
4	430276	35	80	–	20	<0.5	–	6		
5	430312	<5	25	–	70	<0.5	–	6		
6	430314	5	30	–	120	<0.5	–	8		
	430316	<5	35	–	70	<0.5	–	13		
8	430318	<5	95	–	65	<0.5	–	52		
9	430320	<5	95	–	50	8.5	–	8		
10	430322 ASTD	20	210	–	160	<0.5	–	45		
11	430324	50	240	–	80	0.5	–	380		
12	430326	<5	265	–	65	6.5	–	15		
13	430328	270	455	–	65	6.0	–	100		
14	430330	<5	145	–	30	1.5	–	10		
15	430332	<5	90	–	20	1.0	–	6		
16	430334	<5	15	–	20	<0.5	–	2		
	430336	<5	25	–	30	0.5	–	3		
18	430338	<5	20	–	25	<0.5	–	4		
19	430340	15	20	–	45	0.5	–	16		
20	430342	<5	45	–	30	1.0	–	4		
21	430344	<5	35	–	30	<0.5	–	2		
22	430346	<5	35	–	45	<0.5	–	2		
23	430348	<5	15	–	25	<0.5	–	5		
24	430350	<5	20	–	60	0.5	–	3		
25	430352	<5	30	–	20	<0.5	–	2		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	25 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430354	<5	15	–	25	<0.5	–	1		
2	430356	25	45	–	85	<0.5	–	13		
3	430358	150	55	–	90	<0.5	–	28		
4	430360	40	120	–	145	0.5	–	24		
5	430362	70	115	–	140	1.0	–	25		
6	430364	65	60	–	85	0.5	–	16		
7	430366	20	15	–	35	<0.5	–	11		
8	430368	20	10	–	60	0.5	–	16		
9	430370	30	35	–	110	1.0	–	40		
10	430372	20	20	–	65	<0.5	–	21		
11	430374	25	30	–	100	1.0	–	15		
12	430376	15	55	–	115	<0.5	–	12		
13	430378	5	160	–	35	<0.5	–	6		
14	430380	20	160	–	100	<0.5	–	8		
15	430382	15	100	–	90	<0.5	–	6		
16	430384	65	45	–	105	<0.5	–	4		
17	430386	15	65	–	100	<0.5	–	5		
18	430388	20	40	–	65	<0.5	–	6		
19	430390	80	190	–	205	<0.5	–	10		
20	430392	25	45	–	75	<0.5	–	5		
21	430394	35	100	–	155	<0.5	–	4		
22	430396	35	90	–	130	<0.5	–	4		
23	430398	30	115	–	100	<0.5	–	5		
24	430400	15	45	–	75	<0.5	–	2		
25	430402	30	40	–	70	0.5	–	6		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05696	09/11/88	4820	26 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430404	25	65	–	80	1.0	–	7		
2	430406	25	95	–	95	1.0	–	5		
3	430408	30	95	–	155	1.0	–	6		
4	430410	25	90	–	100	0.5	–	5		
5	430412	20	75	–	75	0.5	–	4		
6	430414	10	30	–	60	<0.5	–	2		
7	430416	15	95	–	55	0.5	–	5		
8	430418	10	20	–	50	0.5	–	3		
9	430420	15	40	–	65	1.0	–	5		
10	430422	20	35	–	85	1.0	–	5		
11	430424	30	40	–	130	1.0	–	8		
12	430428	15	60	–	65	0.5	–	3		
13	430430	10	55	–	60	<0.5	–	5		
14	430432	15	95	–	70	0.5	–	7		
15	430434	20	150	–	65	1.0	–	9		
16	430436	15	75	–	70	1.0	–	4		
17	430438	10	80	–	55	1.0	–	4		
18	430440	20	100	–	105	1.0	–	4		
19	430442	10	170	–	80	0.5	–	4		
20	430444	15	305	–	115	0.5	–	8		
21	430446	25	240	–	245	1.0	–	6		
22	430448	20	290	–	115	1.0	–	6		
23	430450	25	165	–	120	1.0	–	9		
24	430452	25	110	–	100	1.0	–	7		
25	430454	30	65	–	90	1.0	–	8		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	27 OF 27

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	As		
1	430456	25	40	–	70	0.5	–	5		
2	430458	15	40	–	50	0.5	–	3		
3	430460	35	35	–	80	1.0	–	11		
4	430462	25	385	–	130	1.0	–	12		
5	430464	25	100	–	80	0.5	–	11		
6	430466	5	15	–	30	<0.5	–	1		
7	430468	10	25	–	75	<0.5	–	2		
8	430470	10	25	–	50	0.5	–	11		
9	430472	20	35	–	75	0.5	–	13		
10	430474	30	45	–	75	1.0	–	35		
11	430476	10	15	–	70	0.5	–	11		
12	430478	5	15	–	100	<0.5	–	2		
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	25	5	0.5	2	1		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	104	101	101	104	114		

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	1 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	428801	<0.008	876	–	104	140	3397			
2	428803	<0.008	730	–	75	140	3462			
3	428805	<0.008	740	–	98	130	5761			
4	428807	<0.008	794	–	35	160	6257			
5	428809	0.009	565	–	88	210	9271			
6	428811	<0.008	615	–	77	230	9094			
7	428813	0.008	776	–	71	230	8252			
8	428815	0.008	972	–	42	240	6008			
9	428817	<0.008	648	–	85	210	8795			
10	428819	<0.008	476	–	80	240	9882			
11	428821	<0.008	444	–	75	210	9014			
12	428825	<0.008	317	–	59	220	9988			
13	428827	<0.008	472	–	55	190	9083			
14	428829	<0.008	636	–	324	150	8169			
15	428833	<0.008	668	–	82	200	6335			
16	428835	<0.008	1209	–	70	210	4504			
17	428837	<0.008	1218	–	35	210	3689			
18	428839	<0.008	986	–	18	230	3245			
19	428841	<0.008	1524	–	18	260	2449			
20	428858	0.011	1011	–	80	180	4567			
21	428860	0.014	1824	–	71	160	5518			
22	428864	<0.008	1251	–	19	150	5774			
23	428866	<0.008	1504	–	16	190	5668			
24	428868	0.014	1339	–	27	190	5674			
25	428870	0.045	1496	–	43	220	6639			

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4620	2 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	428872	0.020	994	–	41	200	6520			
2	428874	<0.008	499	–	22	20	1060			
3	428876	0.017	970	–	22	170	6551			
4	428878	0.018	1044	–	67	170	383			
5	428886	0.173	9832	–	<5	200	5432			
6	428890	0.277	–	2.62	17	170	3926			
7	428892	0.176	–	1.33	<5	170	4273			
8	428894	0.375	–	4.79	116	130	2695			
9	428896	0.174	6490	–	43	180	4783			
10	428898	0.013	1539	–	51	220	3126			
11	428901	0.148	–	7.30	15	160	3885			
12	428903	0.269	–	3.08	23	180	4434			
13	428905	0.269	–	9.66	<5	120	2622			
14	428907	0.256	–	14.75	7	130	1446			
15	428911	0.206	–	1.01	<5	160	5861			
16	428913	0.211	–	3.11	104	170	4360			
17	428921	0.234	–	2.99	201	130	3090			
18	428923	0.105	–	5.09	205	120	2887			
19	428925	0.760	–	2.21	<5	35	1816			
20	428927	I5	7328	–	226	60	3615			
21	428929	I8	–	6.22	6	30	1863			
22	428933	0.435	–	3.98	20	110	2342			
23	428935	0.204	–	3.12	<5	120	3572			
24	428937	0.088	–	2.40	35	150	2135			
25	428939	0.235	–	3.77	<5	130	2775			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	3 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	428946	<0.006	729	–	953	100	6530			
2	428954	0.053	287	–	1098	85	8409			
3	428958	<0.008	127	–	1534	110	8600			
4	428960	<0.008	108	–	1607	120	8817			
5	428962	<0.006	209	–	1028	70	8849			
6	428966	<0.008	156	–	1392	110	7808			
7	428968	<0.008	530	–	201	110	4225			
8	428972	<0.006	539	–	169	140	4183			
9	428974	0.013	461	–	173	160	4871			
10	428976	<0.008	438	–	147	150	5631			
11	428978	<0.008	461	–	117	160	5979			
12	428980	<0.008	605	–	108	170	5025			
13	428982	0.009	636	–	179	130	5078			
14	428984	<0.008	758	–	130	140	4797			
15	428986 X STD	0.015	758	–	36	240	4040			
16	428988	0.064	–	2.91	25	180	3558			
17	428990	0.213	–	5.38	25	170	3886			
18	428992	0.134	2269	–	26	180	4254			
19	428994	0.146	2561	–	40	140	4575			
20	428996	0.131	1418	–	22	200	4664			
21	428998	0.238	4621	–	34	170	3620			
22	429000	0.200	7442	–	11	190	2723			
23	429002	0.054	1321	–	51	140	3248			
24	429004	0.141	842	–	18	110	2892			
25	429008	0.065	1501	–	38	130	2985			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	4 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429010	0.051	1015	–	8	120	3640			
2	429012	0.106	8500	–	52	130	3507			
3	429014	0.420	7243	–	9	120	3396			
4	429016	IS	2000	–	114	100	3686			
5	429018	0.810	–	25.51	<5	40	1800			
6	429020	0.265	–	5.21	24	120	2709			
7	429024	0.057	8041	–	9	160	3582			
8	429025	0.106	6034	–	34	150	3028			
9	429027	0.033	661	–	<5	110	2462			
10	429031	0.020	912	–	31	120	2188			
11	429033	0.042	1180	–	<5	160	2380			
12	429035	0.100	899	–	40	140	2193			
13	429037	0.018	1143	–	20	130	2115			
14	429039	0.027	1017	–	46	140	1940			
15	429041	0.010	1050	–	53	140	3126			
16	429043	0.008	830	–	60	160	2470			
	429045	0.034	942	–	22	150	2731			
18	429047	<0.008	947	–	43	160	2793			
19	429049	0.028	848	–	29	160	2380			
20	429051	0.042	1142	–	48	150	2555			
21	429064	<0.008	509	–	1139	100	6662			
22	429066	<0.008	813	–	1785	130	7229			
23	429070	0.011	504	–	410	130	4814			
24	429072	<0.008	494	–	213	140	4600			
25	429076	0.020	707	–	170	140	3881			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	5 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429078	<0.008	1082	–	39	190	5542			
2	429080	<0.008	944	–	29	180	6094			
3	429082	0.009	1231	–	41	220	5566			
4	429084	<0.008	1166	–	31	200	6422			
5	429086	<0.008	2498	–	24	230	5653			
6	429088	<0.008	2295	–	13	200	5592			
7	429092	<0.008	1234	–	38	220	5902			
8	429094	<0.008	769	–	36	140	4328			
9	429096	0.008	937	–	27	160	3894			
10	429098	<0.008	713	–	27	170	4320			
11	429100	0.012	968	–	12	140	3073			
12	429102	0.020	509	–	128	160	3551			
13	429104	0.016	897	–	34	120	3725			
14	429106	0.036	894	–	55	130	3762			
15	429108	0.014	954	–	15	140	3655			
16	429110	0.011	820	–	41	140	3249			
17	429114	0.008	829	–	8	130	3937			
18	429116	<0.008	469	–	55	140	3493			
19	429118	0.012	577	–	7	100	3525			
20	429120 *STD	<0.008	656	–	40	230	4118			
21	429122	0.038	1111	–	<5	140	3707			
22	429126	0.075	1522	–	14	180	5225			
23	429128	0.041	1394	–	13	160	3746			
24	429132	0.072	905	–	29	110	2179			
25	429133	<0.008	809	–	24	200	5361			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4620	6 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429135	<0.008	887	–	38	200	4761			
2	429139	<0.008	564	–	22	200	6460			
3	429141	<0.008	592	–	36	190	5516			
4	429143	<0.008	884	–	20	160	3574			
5	429145	<0.008	2398	–	35	200	4229			
6	429147	<0.008	588	–	63	220	6328			
7	429149	<0.008	695	–	59	200	5626			
8	429151	<0.008	698	–	46	160	5254			
9	429153	<0.008	1367	–	203	170	5190			
10	429155	0.011	2274	–	98	260	4325			
11	429157	0.025	1356	–	73	170	4088			
12	429159	<0.008	1122	–	96	120	2929			
13	429161	0.011	1119	–	132	130	2624			
14	429163	<0.008	1105	–	83	130	3085			
15	429167	<0.008	1157	–	110	130	3554			
16	429169	0.014	889	–	109	95	3614			
	429173	<0.008	1132	–	67	140	3961			
18	429175	<0.008	1393	–	9	160	4073			
19	429177	<0.008	783	–	47	140	3997			
20	429179	<0.008	1079	–	7	160	4548			
21	429181	0.013	1082	–	39	140	2946			
22	429183	<0.008	1067	–	56	120	3392			
23	429185	0.020	814	–	39	130	2950			
24	429187	<0.008	252	–	18	120	2868			
25	429191	0.025	1350	–	46	140	2884			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	7 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429193 *3 SD	<0.008	677	–	31	230	4031			
2	429195	0.011	967	–	70	140	3575			
3	429201	<0.008	724	–	14	180	3363			
4	429203	<0.008	1088	–	29	170	2736			
5	429205	<0.008	938	–	15	190	2532			
6	429207	<0.008	788	–	25	190	3351			
7	429209	0.010	504	–	40	170	3379			
8	429211	<0.008	1131	–	48	130	2294			
9	429213	<0.008	373	–	67	75	3056			
10	429215	<0.008	361	–	126	90	3556			
11	429217	<0.008	402	–	158	170	4472			
12	429219	0.009	321	–	163	140	4743			
13	429221	<0.008	374	–	161	130	4556			
14	429222	0.017	1293	–	122	150	4594			
15	429224	0.011	1105	–	32	140	4119			
16	429226	0.018	1019	–	82	150	5078			
	429228	0.022	856	–	40	160	5216			
18	429230	<0.008	592	–	84	170	5171			
19	429232	0.010	432	–	26	160	5510			
20	429234	<0.008	903	–	69	120	3094			
21	429236	<0.008	1519	–	<5	140	3624			
22	429238	0.074	2236	–	59	130	3986			
23	429240	0.072	3456	–	<5	150	4335			
24	429242	0.156	1960	–	52	140	3761			
25	429244	0.050	1621	–	<5	130	3168			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	8 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429248	0.019	1382	–	57	120	2969			
2	429250	<0.008	1040	–	70	130	2818			
3	429252	<0.008	1011	–	93	110	2979			
4	429254	<0.008	1125	–	70	120	3231			
5	429256	<0.008	1223	–	95	120	2624			
6	429258	<0.008	1069	–	35	130	2819			
7	429260	IS	705	–	111	30	1837			
8	429262	<0.008	1137	–	14	130	3315			
9	429264	IS	532	–	194	100	4105			
10	429266 *STD	0.013	713	–	27	220	3875			
11	429270	<0.008	844	–	320	120	4123			
12	429272	<0.008	1170	–	955	80	4156			
13	429278	<0.008	387	–	260	100	5270			
14	429280	<0.008	295	–	65	15	989			
15	429284	<0.008	438	–	923	120	5536			
16	429311	0.009	860	–	32	170	5591			
17	429313 *STD	<0.008	674	–	39	220	3916			
18	429315	0.032	394	–	21	200	5588			
19	429317	0.008	1164	–	21	200	6715			
20	429319	0.009	547	–	7	120	3340			
21	429321	0.011	496	–	48	120	2598			
22	429323	0.012	847	–	14	110	3142			
23	429325	<0.008	IS	–	IS	–	IS			
24	429327	<0.008	422	–	21	100	3057			
25	429329	0.008	850	–	55	120	2730			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	9 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429331	0.027	1563	–	13	160	2753			
2	429335	0.054	1606	–	57	190	2810			
3	429337	0.014	2545	–	9	140	3144			
4	429339	0.103	1331	–	112	65	2855			
5	429345	0.015	1348	–	306	140	4127			
6	429347	0.015	1554	–	645	130	4752			
7	429352	0.013	618	–	891	130	5223			
8	429354	0.042	1373	–	1134	130	4853			
9	429356	0.014	924	–	117	140	3420			
10	429358	0.026	858	–	223	110	3709			
11	429360	0.018	970	–	252	120	2869			
12	429362	0.018	1016	–	197	130	2820			
13	429364	0.016	897	–	325	140	4319			
14	429366	0.033	1789	–	480	130	4116			
15	429368	<0.008	573	–	354	130	5526			
16	429370	<0.008	401	–	196	150	5453			
	429372	<0.008	697	–	205	160	4606			
18	429374	<0.008	994	–	162	160	4431			
19	429376	<0.008	1022	–	487	170	4209			
20	429378	<0.008	964	–	49	170	4328			
21	429380	<0.008	703	–	46	140	5118			
22	429382	<0.008	425	–	124	150	5238			
23	429383	<0.008	343	–	327	160	4886			
24	429385	<0.008	326	–	221	160	5390			
25	429387	<0.008	417	–	220	130	5283			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	10 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429389	<0.008	434	–	172	130	5376			
2	429391	<0.008	480	–	86	160	4362			
3	429393	<0.008	814	–	149	140	5340			
4	429395	<0.008	827	–	230	160	6316			
5	429397	<0.008	565	–	253	140	5929			
6	429402	0.036	1096	–	146	180	2812			
7	429408	0.017	914	–	34	170	3857			
8	429410	0.016	1075	–	32	170	3322			
9	429412	0.010	1124	–	11	140	2757			
10	429414	0.019	1284	–	53	140	3073			
11	429416	<0.008	667	–	13	130	3868			
12	429418	0.037	1080	–	45	170	3034			
13	429422	0.008	949	–	13	150	3565			
14	429424	0.026	1065	–	62	160	3429			
15	429428	0.052	1213	–	64	150	2937			
16	429432	0.010	1286	–	456	130	4509			
	429434	0.014	1738	–	966	130	4799			
18	429436	0.008	1243	–	414	140	4411			
19	429438	<0.008	785	–	361	140	6378			
20	429440	0.009	600	–	1617	150	5318			
21	429442	0.008	887	–	691	160	4787			
22	429444	0.008	859	–	843	150	4218			
23	429446	<0.008	976	–	484	160	4607			
24	429450	<0.008	267	–	96	160	5967			
25	429452	<0.008	474	–	54	170	5250			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4620	11 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429454	<0.008	681	–	29	190	4554			
2	429456	<0.008	447	–	26	160	5038			
3	429458	<0.008	444	–	80	170	6065			
4	429460	<0.008	308	–	147	200	6518			
5	429462	0.013	240	–	146	150	6028			
6	429487	–	1221	–	84	160	4277			
7	429489	–	896	–	100	170	4446			
8	429491	–	960	–	72	130	4098			
9	429495	–	617	–	69	150	4487			
10	429499	–	472	–	75	210	5640			
11	429501	–	523	–	74	230	4550			
12	429503	–	531	–	31	170	4417			
13	429505	–	443	–	84	220	6374			
14	429507	–	661	–	78	210	4727			
15	429509	–	554	–	66	190	5415			
16	429511	–	345	–	<5	150	3532			
	429521	–	647	–	65	180	3090			
18	429525	–	390	–	16	150	4061			
19	429527	–	1095	–	109	120	2994			
20	429529	–	987	–	9	150	3338			
21	429531	–	1157	–	41	140	3291			
22	429533	–	830	–	63	160	4782			
23	429535	–	896	–	152	120	2749			
24	429537	–	854	–	40	190	3960			
25	429539	–	677	–	213	140	4144			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/86	4820	12 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429541	–	1180	–	396	140	4758			
2	429543	–	1167	–	383	140	4665			
3	429545	–	1235	–	84	150	3553			
4	429547	–	854	–	429	130	5030			
5	429549	–	729	–	583	150	4975			
6	429551	–	404	–	1380	150	4852			
7	429553	–	638	–	116	170	2954			
8	429555	–	337	–	373	160	3887			
9	429557	–	345	–	726	160	5339			
10	429559	–	969	–	285	150	3341			
11	429561	–	839	–	144	150	4012			
12	429563	–	423	–	78	170	5271			
13	429565	–	361	–	33	190	5168			
14	429567	–	624	–	40	180	4827			
15	429569	–	923	–	67	180	4778			
16	429571	–	230	–	112	140	6041			
	429573	–	201	–	65	140	6656			
18	429577	–	251	–	168	160	6171			
19	429581	–	139	–	212	130	6595			
20	429583	–	139	–	143	120	6085			
21	429585	–	179	–	96	130	5732			
22	429587	–	193	–	150	130	6263			
23	429589	–	403	–	184	140	6455			
24	429591	–	257	–	187	120	7789			
25	429595	–	539	–	167	140	5856			

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05696	09/11/88	4820	13 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429597	–	275	–	404	120	6499			
2	429599	–	300	–	344	110	6932			
3	429600	–	208	–	284	170	5041			
4	429602	–	129	–	252	170	6978			
5	429604	–	123	–	254	170	7026			
6	429606	–	134	–	273	170	6970			
7	429608	–	161	–	272	180	5776			
8	429610	–	155	–	300	190	5932			
9	429612	–	166	–	270	170	5260			
10	429614	–	156	–	265	190	6103			
11	429616	–	164	–	279	170	5394			
12	429618	–	130	–	260	180	6158			
13	429620	–	159	–	537	180	9633			
14	429622	–	154	–	402	150	8675			
15	429624	–	183	–	295	170	5495			
16	429626	–	177	–	452	170	8891			
	429628	–	109	–	156	120	7652			
18	429630	–	84	–	176	140	7644			
19	429642	–	176	–	<5	150	3618			
20	429644	–	154	–	32	140	3604			
21	429646	–	187	–	<5	160	3169			
22	429648	–	152	–	30	140	3676			
23	429650	–	140	–	11	130	3696			
24	429662	–	212	–	746	150	4575			
25	429666 ~~X~~ 3	–	666	–	28	230	4019			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	14 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429668	–	162	–	88	190	4674			
2	429670	–	132	–	30	200	5375			
3	429672	–	139	–	70	190	5045			
4	429674	–	121	–	40	200	5014			
5	429676	–	124	–	44	190	4722			
6	429678	–	108	–	47	220	7561			
7	429680	–	115	–	58	200	7021			
8	429682	–	105	–	37	200	7184			
9	429684	–	149	–	56	190	7302			
10	429686	–	97	–	44	210	7381			
11	429688	–	126	–	170	160	7020			
12	429690	–	125	–	145	150	6918			
13	429692	–	118	–	167	150	7053			
14	429694	–	120	–	150	150	6971			
15	429696	–	107	–	146	150	7105			
16	429698	–	314	–	176	95	6771			
	429700	–	383	–	206	140	7529			
18	429702	–	233	–	209	120	7508			
19	429704	–	239	–	205	110	7362			
20	429706	–	412	–	544	110	7546			
21	429708	–	470	–	631	120	7372			
22	429710	–	461	–	677	150	7492			
23	429712	–	508	–	648	140	7191			
24	429713	–	900	–	61	150	4871			
25	429715	–	1063	–	96	140	4595			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	15 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429717	–	439	–	27	150	5269			
2	429719	–	335	–	59	210	6641			
3	429721	–	304	–	22	200	6706			
4	429723	–	505	–	40	200	5822			
5	429729	–	383	–	58	200	6289			
6	429731	–	331	–	54	220	5966			
7	429735	–	356	–	58	230	6442			
8	429737	–	409	–	88	220	5939			
9	429739	–	299	–	32	110	5346			
10	429741	–	397	–	54	140	4238			
11	429743	–	292	–	85	180	3925			
12	429745	–	318	–	29	180	3369			
13	429747	–	417	–	48	150	3855			
14	429749	–	429	–	50	200	3910			
15	429759	–	415	–	80	210	4533			
16	429761	–	514	–	43	200	3856			
	429763	–	420	–	52	100	3386			
18	429765	–	394	–	11	160	4228			
19	429767	–	357	–	9	210	4470			
20	429769	–	1238	–	73	150	3467			
21	429771	–	330	–	28	210	3182			
22	429787	–	467	–	44	180	2989			
23	429789	–	283	–	19	180	3864			
24	429791	–	309	–	47	190	3455			
25	429793	–	366	–	44	220	4567			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	16 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429795	–	352	–	73	160	5491			
2	429797	–	161	–	60	130	6361			
3	429799	–	303	–	76	200	5423			
4	429801	–	272	–	65	140	6598			
5	429803	–	219	–	100	130	6622			
6	429805	–	264	–	67	110	6789			
7	429811	–	237	–	88	160	6147			
8	429813	–	240	–	102	170	6388			
9	429815	–	240	–	102	170	6500			
10	429817	–	305	–	135	140	6638			
11	429819	–	344	–	139	160	6753			
12	429821	–	347	–	132	150	6935			
13	429823	–	370	–	133	150	6576			
14	429825	–	155	–	159	140	6765			
15	429826	–	810	–	76	160	5390			
16	429828	–	788	–	79	160	5264			
	429830	–	870	–	67	160	5528			
18	429832	–	700	–	77	130	5179			
19	429834	–	1474	–	23	200	5334			
20	429836	–	879	–	12	170	5082			
21	429838	–	313	–	86	200	6431			
22	429840	–	317	–	40	180	5606			
23	429842	–	271	–	56	170	5880			
24	429844	–	275	–	43	180	5628			
25	429846 (STD)	–	660	–	34	230	3250			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	17 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429848	–	360	–	58	160	5573			
2	429850	–	401	–	60	170	3477			
3	429852	–	315	–	91	130	5312			
4	429854	–	236	–	72	180	6813			
5	429856	–	218	–	90	140	5074			
6	429858	–	312	–	92	150	4821			
7	429862	–	545	–	53	200	3950			
8	429864	–	540	–	43	190	4067			
9	429866	–	767	–	75	160	3766			
10	429876	–	202	–	100	180	4358			
11	429878	–	190	–	84	130	4694			
12	429880	–	305	–	75	100	2942			
13	429882	–	261	–	145	160	3532			
14	429884	–	321	–	276	140	4274			
15	429886	–	488	–	198	160	3005			
16	429888	–	292	–	307	160	4153			
17	429890	–	242	–	325	150	4253			
18	429894	–	287	–	299	140	4070			
19	429896	–	279	–	220	160	3594			
20	429898	–	164	–	570	120	5040			
21	429900	–	196	–	132	160	6103			
22	429902	–	224	–	246	160	6564			
23	429904	–	218	–	391	160	6401			
24	429906	–	267	–	176	180	6695			
25	429908	–	259	–	152	160	6467			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	18 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429910	–	239	–	123	160	6459			
2	429912	–	222	–	105	160	6419			
3	429914	–	341	–	103	140	5832			
4	429916	–	242	–	168	140	6613			
5	429918	–	101	–	178	140	7363			
6	429920	–	93	–	151	95	6869			
7	429922	–	84	–	135	120	7200			
8	429924	–	212	–	90	180	5592			
9	429926	–	248	–	54	170	5222			
10	429928	–	76	–	131	150	7341			
11	429936	–	248	–	403	130	6435			
12	429938	–	253	–	380	130	6626			
13	429939	–	898	–	60	170	5401			
14	429945	–	616	–	86	160	5584			
15	429947	–	939	–	62	150	4902			
16	429949	–	1000	–	84	150	5054			
	429951	–	281	–	28	120	5066			
18	429955	–	753	–	120	120	4681			
19	429959	–	526	–	55	160	6357			
20	429961	–	322	–	75	180	7887			
21	429963	–	250	–	40	150	6775			
22	429965	–	211	–	51	150	6983			
23	429967	–	271	–	63	150	6463			
24	429969	–	376	–	57	150	6259			
25	429973	–	270	–	29	170	5200			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	19 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	429975	–	300	–	70	180	5136			
2	429977	–	380	–	44	200	4700			
3	429979	–	374	–	64	180	4541			
4	429981	–	418	–	63	200	4449			
5	429983	–	407	–	73	200	4418			
6	429985	–	408	–	85	180	3939			
7	429997	–	297	–	76	180	4056			
8	429999	–	703	–	32	140	4224			
9	430001	–	272	–	62	150	3365			
10	430003	–	269	–	34	120	3295			
11	430005	–	292	–	172	120	4151			
12	430007	–	352	–	169	140	4251			
13	430009	–	328	–	187	110	4050			
14	430011	–	501	–	379	100	4569			
15	430013	–	286	–	533	120	5523			
16	430015	–	192	–	259	120	6240			
	430017	–	240	–	163	130	6419			
18	430019	–	232	–	150	150	6465			
19	430021	–	229	–	175	120	6352			
20	430023	–	242	–	150	130	6420			
21	430025	–	250	–	188	130	6447			
22	430027	–	267	–	149	120	6325			
23	430029	–	232	–	109	140	6169			
24	430031	–	45	–	64	90	6490			
25	430033	–	90	–	98	85	6727			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	20 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430035	–	246	–	66	110	6740			
2	430037	–	255	–	119	120	6247			
3	430039	–	173	–	55	140	6212			
4	430041	–	197	–	90	130	6233			
5	430043	–	248	–	69	120	6365			
6	430045	–	212	–	95	130	6420			
7	430047	–	167	–	66	140	5938			
8	430049	–	176	–	85	130	6131			
9	430051	–	149	–	69	130	6145			
10	430053	–	266	–	109	180	5806			
11	430055	–	481	–	87	150	5083			
12	430057	–	578	–	208	160	5562			
13	430059	–	496	–	749	170	5942			
14	430061	–	455	–	927	210	6243			
15	430063	–	316	–	957	190	6469			
16	430065	–	666	–	417	140	5398			
	430067	–	729	–	308	170	4766			
18	430069	–	395	–	369	160	5014			
19	430071	–	663	–	28	230	3946			
20	430073	–	430	–	88	170	7566			
21	430075	–	409	–	119	190	7255			
22	430077	–	315	–	88	130	6670			
23	430079	–	383	–	50	160	6262			
24	430081	–	393	–	66	140	5386			
25	430083	–	356	–	74	180	7704			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	21 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430085	–	361	–	109	160	6720			
2	430087	–	338	–	73	180	7072			
3	430089	–	234	–	77	85	4890			
4	430091	–	297	–	35	130	6101			
5	430093	–	410	–	50	160	4867			
6	430095	–	325	–	36	140	4092			
7	430097	–	388	–	107	180	4288			
8	430099	–	315	–	90	130	2537			
9	430101	–	182	–	231	150	4699			
10	430113	–	447	–	35	110	3614			
11	430117	–	533	–	62	180	5072			
12	430119	–	910	–	15	160	4249			
13	430121	–	676	–	246	140	2979			
14	430123	–	226	–	404	190	5337			
15	430127	–	428	–	75	120	4858			
16	430129	–	288	–	57	100	6675			
	430131	–	672	–	71	120	4684			
18	430133	–	608	–	60	110	5005			
19	430135	–	617	–	81	110	5445			
20	430137	–	324	–	15	110	4117			
21	430139	–	444	–	91	100	5346			
22	430141	–	148	–	63	130	6568			
23	430143	–	75	–	196	130	6691			
24	430145	–	102	–	173	140	6962			
25	430147	–	74	–	154	110	6451			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	22 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430149	–	175	–	106	140	6607			
2	430151	–	114	–	145	120	6562			
3	430153	–	386	–	224	180	7831			
4	430155	–	441	–	217	140	6281			
5	430157	–	733	–	73	140	5941			
6	430159	–	828	–	86	160	4577			
7	430161	–	477	–	50	140	4431			
8	430163	–	585	–	247	120	5178			
9	430165	–	469	–	214	100	6155			
10	430166	–	533	–	965	190	7352			
11	430170	–	431	–	434	130	6949			
12	430172	–	876	–	647	170	6474			
13	430174	–	736	–	601	180	7380			
14	430180	–	141	–	249	85	5514			
15	430182	–	146	–	194	100	5560			
16	430184	–	187	–	199	80	5489			
	430186	–	134	–	328	100	5199			
18	430188	–	130	–	310	95	5140			
19	430190	–	139	–	375	130	6290			
20	430192	–	157	–	505	140	7081			
21	430194	–	162	–	455	130	6657			
22	430198	–	240	–	465	110	6359			
23	430200	–	140	–	482	140	6405			
24	430202	–	187	–	447	150	7134			
25	430204	–	315	–	380	120	5912			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	23 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430206	–	119	–	323	90	5596			
2	430208	–	394	–	348	110	5181			
3	430210	–	297	–	410	110	5409			
4	430212	–	378	–	736	120	6075			
5	430214	–	519	–	789	190	5832			
6	430216	–	532	–	695	120	5870			
7	430218	–	346	–	512	140	5865			
8	430220	–	391	–	612	160	6244			
9	430222	–	296	–	278	200	6331			
10	430224	–	375	–	263	120	5653			
11	430226 #5DD	–	682	–	54	230	3984			
12	430234	–	482	–	234	120	5243			
13	430236	–	157	–	275	110	5709			
14	430238	–	152	–	289	95	5469			
15	430240	–	147	–	195	80	5090			
16	430242	–	407	–	255	150	6204			
	430246	–	716	–	231	120	5035			
18	430248	–	680	–	181	95	5385			
19	430250	–	822	–	106	100	4758			
20	430252	–	867	–	175	100	4050			
21	430254	–	2453	–	67	110	6050			
22	430256	–	311	–	304	160	5754			
23	430262	–	1184	–	114	150	6343			
24	430266	–	1490	–	81	150	5370			
25	430268	–	499	–	93	130	8293			

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	24 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430270	–	526	–	115	140	7921			
2	430272	–	559	–	130	150	6452			
3	430274	–	587	–	95	110	6441			
4	430276	–	1355	–	87	140	6284			
5	430312	<0.008	1400	–	35	220	2027			
6	430314	<0.008	949	–	28	230	2644			
7	430316	<0.008	851	–	65	220	3466			
8	430318	0.013	1771	–	45	220	3072			
9	430320	0.496	–	12.45	64	110	2695			
10	430322	<0.008	736	–	34	240	4075			
11	430324	0.120	–	12.73	52	70	1757			
12	430326	0.100	–	5.22	10	85	2902			
13	430328	0.237	–	2.83	54	130	3513			
14	430330	0.052	5503	–	6	160	2586			
15	430332	0.037	6100	–	44	120	2446			
16	430334	0.030	594	–	11	100	2297			
	430336	0.057	891	–	111	95	2822			
18	430338	0.042	913	–	7	110	3177			
19	430340	18	630	–	139	65	2260			
20	430342	0.061	981	–	8	95	2506			
21	430344	<0.008	1415	–	29	150	3760			
22	430346	0.012	1078	–	8	140	3565			
23	430348	0.013	671	–	47	110	2726			
24	430350	<0.008	1249	–	13	210	2209			
25	430352	<0.008	1039	–	59	120	4545			

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	25 OF 27

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430354	<0.008	1053	–	18	120	3734			
2	430356	<0.008	835	–	188	120	2682			
3	430358	0.010	498	–	274	120	3347			
4	430360	<0.008	227	–	838	110	4495			
5	430362	<0.008	297	–	1171	140	5295			
6	430364	<0.008	326	–	858	120	5282			
7	430366	<0.008	1046	–	118	150	5118			
8	430368	<0.008	1136	–	221	170	4064			
9	430370	<0.008	820	–	112	150	4355			
10	430372	<0.008	486	–	102	110	5004			
11	430374	<0.008	232	–	167	160	6102			
12	430376	–	294	–	124	120	6061			
13	430378	–	197	–	100	110	5133			
14	430380	–	185	–	202	140	6586			
15	430382	–	201	–	129	150	6750			
16	430384	–	306	–	103	160	6613			
	430386	–	234	–	96	80	5109			
18	430388	–	180	–	199	160	7074			
19	430390	–	115	–	94	130	5684			
20	430392	–	79	–	105	120	6350			
21	430394	–	130	–	101	130	5402			
22	430396	–	159	–	106	150	6563			
23	430398	–	140	–	159	130	7267			
24	430400	–	181	–	61	70	5079			
25	430402	–	82	–	168	110	6927			

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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400

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05698	09/11/88	4820	26 OF

TUBE No.	SAMPLE No.	Au	Ba	Ba	Cr	Zr	Ti			
1	430404	–	100	–	136	160	7087			
2	430406	–	106	–	144	150	6464			
3	430408	–	203	–	121	160	5623			
4	430410	–	324	–	85	140	6528			
5	430412	–	194	–	121	140	6671			
6	430414	–	494	–	47	90	5109			
7	430416	–	56	–	98	100	6069			
8	430418	–	158	–	84	150	5387			
9	430420	–	325	–	32	190	4683			
10	430422	–	267	–	84	170	5825			
11	430424	–	294	–	67	170	5809			
12	430426	–	343	–	49	140	5040			
13	430430	–	302	–	58	80	5113			
14	430432	–	317	–	83	130	6805			
15	430434	–	129	–	95	130	6865			
16	430436	–	183	–	96	120	6152			
	430438	–	85	–	65	90	6186			
18	430440	–	138	–	102	110	6907			
19	430442	–	122	–	93	160	8860			
20	430444	–	122	–	75	120	7406			
21	430446	–	83	–	81	160	7517			
22	430448	–	103	–	91	110	7268			
23	430450	–	277	–	121	110	7063			
24	430452	–	120	–	83	120	6823			
25	430454	–	74	–	121	140	6783			

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649378

APPENDIX 22.

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649379

ABERFOYLE RESOURCES LIMITED

EXPLORATION LICENCE 106/87

MACKINTOSH

Tasmania

Technical Report

I-ZONE UTEM PROGRAM

DECEMBER 1988

Prepared by:

J J Read
Geophysicist

Distribution

1. Aberfoyle Resources Limited, Burnie
2. Aberfoyle Resources Limited, Hawthorn

Issued by:

J Silic
Chief Geophysicist

291

649380

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2. Introduction

3. Aberfoyle UTEM Program

4. Interpretation of the I-Zone UTEM

5. Conclusions and Recommendations

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PLATES

Plate 1: I-Zone Loop 1 UTEM Data

Plate 2: I-Zone Follow-up UTEM Loop Positions Loop 2

1. ABSTRACT

A UTEM survey was conducted at I-Zone on the Mackintosh exploration licence during December 1988. 3.5 line/km of 50 m spaced single Hz component data was collected. This data revealed a conductive feature exists from 4500E to 4800E, on all lines from 5800N to 6600N. Due to powerline interference the data collected did not allow diagnostic features of the conductive zone to be determined. An additional 800 m x 1 km loop is recommended to further define the anomaly by collecting 25 m spaced UTEM data. Recommendations regarding the next stage of investigation of this feature will then be made.

2. INTRODUCTION

The Mackintosh EL has had a significant proportion of the prospective Que-Hellyer volcanics covered with UTEM prior to 1988. I-Zone, situated 1 km south west of the Que River Mine, was one section of the prospective volcanics, that had not been covered with UTEM. This non UTEM covered region consisted of a 1.2 km x 0.8 km area situated in close proximity to a HEC powerline corridor and extending 300 m into Hellyer Gorge. In order to complete the UTEM coverage south of Que River, a small one loop program was conducted at I-Zone.

Access to the I-Zone area is gained via a formed dirt track running off the Murchison Highway near Mt Charter, that then runs north east along the HEC powerlines towards Que River. All grid lines covered by this survey transect this track.

The topography of the area varies from undulating rain forest to steep heavily wooded slopes that extend into Hellyer Gorge.

3. ABERFOYLE UTEM PROGRAM

The I-Zone program to complete the UTEM coverage south of Que River, was designed to collect 6.0 line/km of UTEM data, along five lines from 5800N to 6600N. 1.2 line/km of data was to be collected from each line, with 300 m of data collected inside loop 1 and 900 m outside the loop. In loop data was aimed at detecting flat lying targets with the out of loop data aimed at moderately to steeply dipping targets.

Substantial modification of the initial program was required after a far greater degree of powerline noise than anticipated was detected. It was not possible to collect data for 200 m either side of the powerline corridoor. Consequently, no in loop data was collected and the region from 4100E-3800E, 5800N-6600N remains untested by UTEM.

Only 3.5 line/km of 50 m spaced single Hz component data was collected. This data was collected using a single UTEM receiver, in four production days at an average daily rate of 0.875 line kilometres. The per kilometre cost of the data was $1842.

The slow production rates and consequent high per kilometre cost of the data, was entirely due to the interfering effects of the HEC transmission lines. In an effort to decrease the powerline interference, long and repeated stacks for each stations reading were required. Routinely three readings were taken per station with these readings combined to produce the final Hz value. Even with the long reading times employed (either 8K or 16K stacks), the data quality was poor, severely hampering interpretation.

4. INTERPRETATION OF THE I-ZONE UTEM

Due to the poor quality of the UTEM data, interpretation concentrated on identifying features that showed coherent line to line characteristics. If a coherency could be observed then some confidence could be placed in interpreting real EM effects.

The interpretation of the I-Zone UTEM data is shown in plate Mac 221. A conductive zone is evident on all lines from 5800N to 6600N occurring between 4500E and 4800E. On lines 5800N, 6000N and 6200N an early time response due to a weakly conductive lithological unit or differential weathering trough, overprints the conductive feature. The UTEM anomaly is best developed on line 6000N where the conductive response persists in time until UTEM channel 3, although this may also be due to the noise in the data. Qualitatively, this would normally indicate the anomaly is due to a "good" conductor.

Because of the poor quality of the data, few diagnostic features of the postulated conductive zone can be determined.

The powerline interference caused the secondary Hz field to not decay monotonically in time. In many instances later time channels exhibit larger amplitudes than earlier channels. Because of this erratic behaviour the decay constant of the anomaly could not be determined. Consequently whether the anomaly is current channelling or inductive in nature, could not be determined.

5. CONCLUSIONS AND RECOMMENDATIONS

The I-Zone UTEM survey, despite having data strongly polluted by powerline noise, has located a conductive feature, occurring between 4500E-4800E and existing on all lines surveyed. This feature has been poorly defined by this survey and follow up work is required to determine the conductors lateral position, depth to top, down-dip extent and thickness conductivity product. Detailing of the anomaly at 25 m data point spacings, with a loop situated to the east of the conductive zone is recommended. This loop is illustrated in plate Mac 222. All lines should be read as close to the powerlines as possible.

Following the collection of the loop two I-Zone data a complete re-assessment of the conductive feature will be undertaken. Recommendations stemming from this assessment will be reported in a separate technical report.

649385

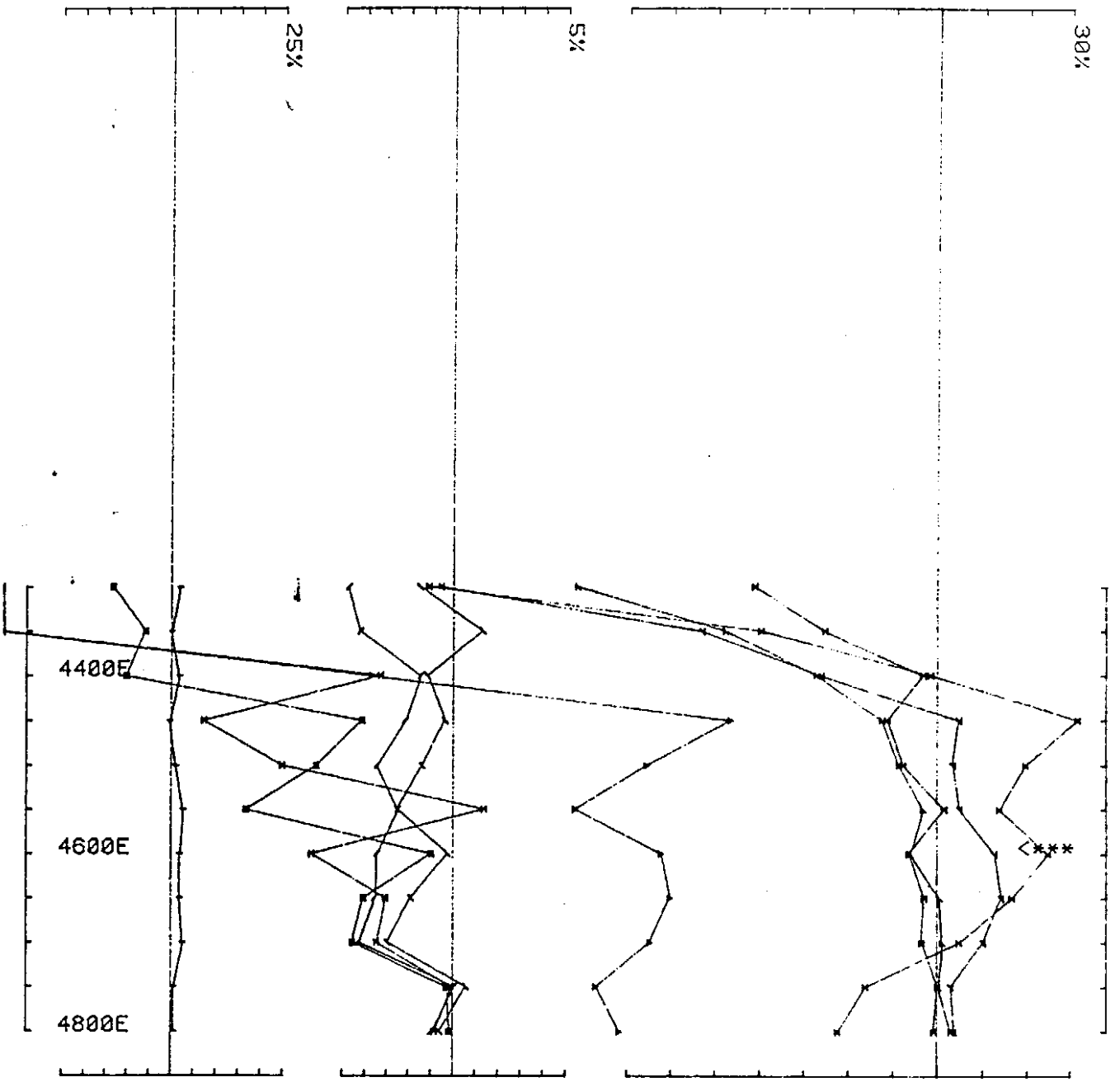
296

Appendix 1

I-ZONE LOOP 1 UTEM DATA

297

649386



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

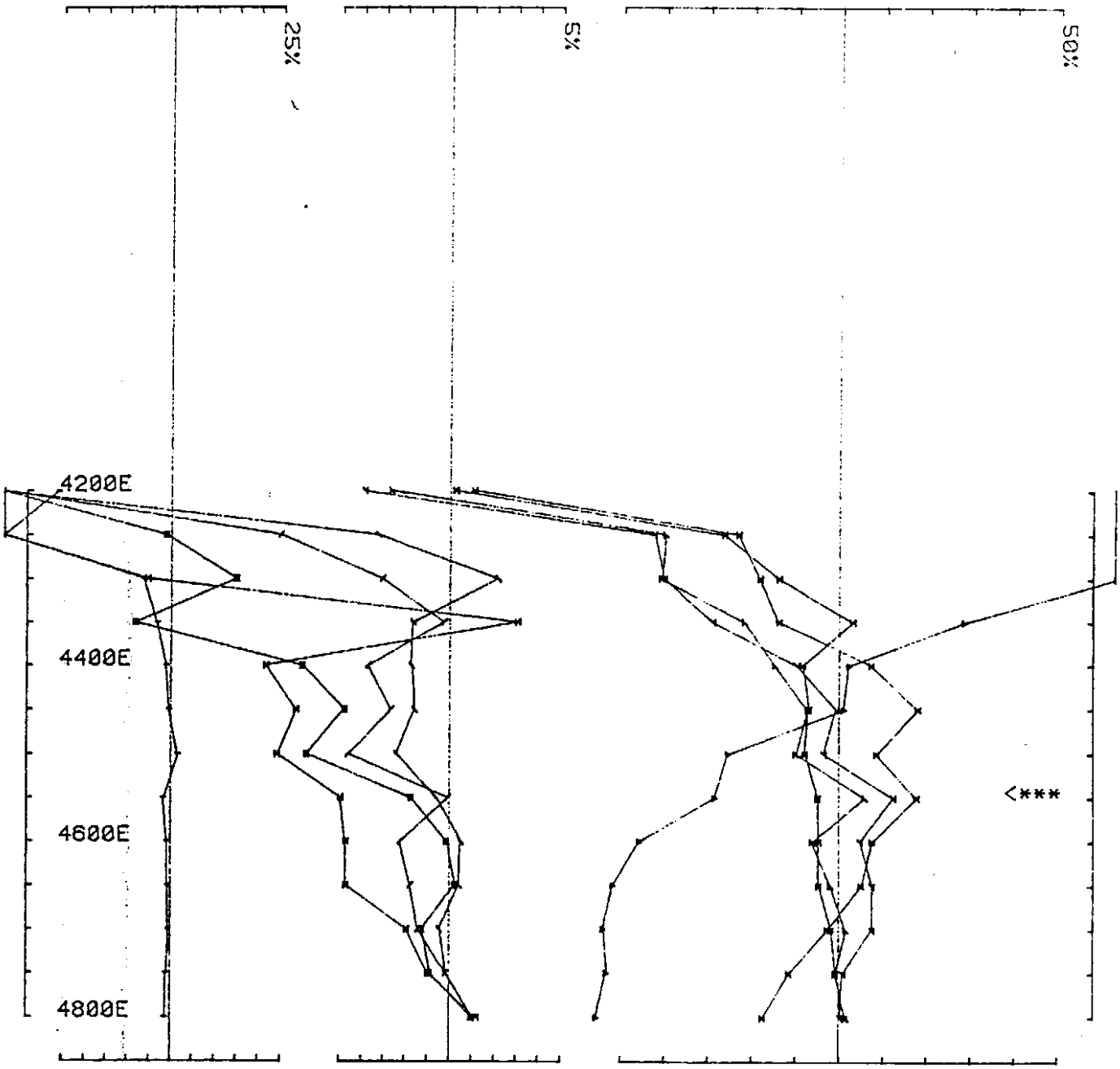
loop dimensions
800x800m

loop no 1
line 6600N
component Hz
secondary field
Ch 1 point norm.
07/12/88

5 cm

298

649387



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

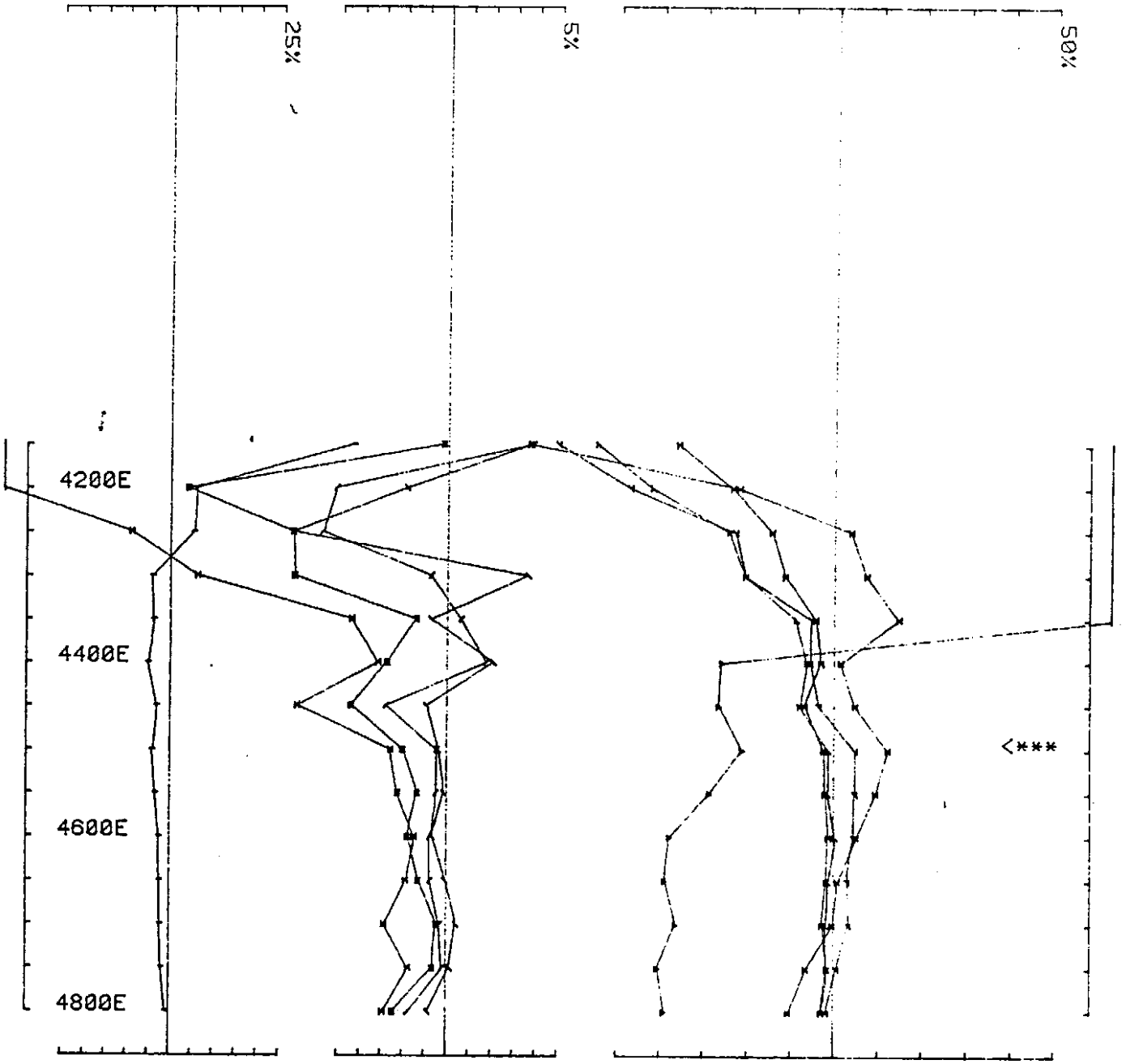
loop dimensions
800x800m

loop no 1
line 6400N
component Hz
secondary field
ch 1 point norm.
07/12/88

5 cm

299

649388



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

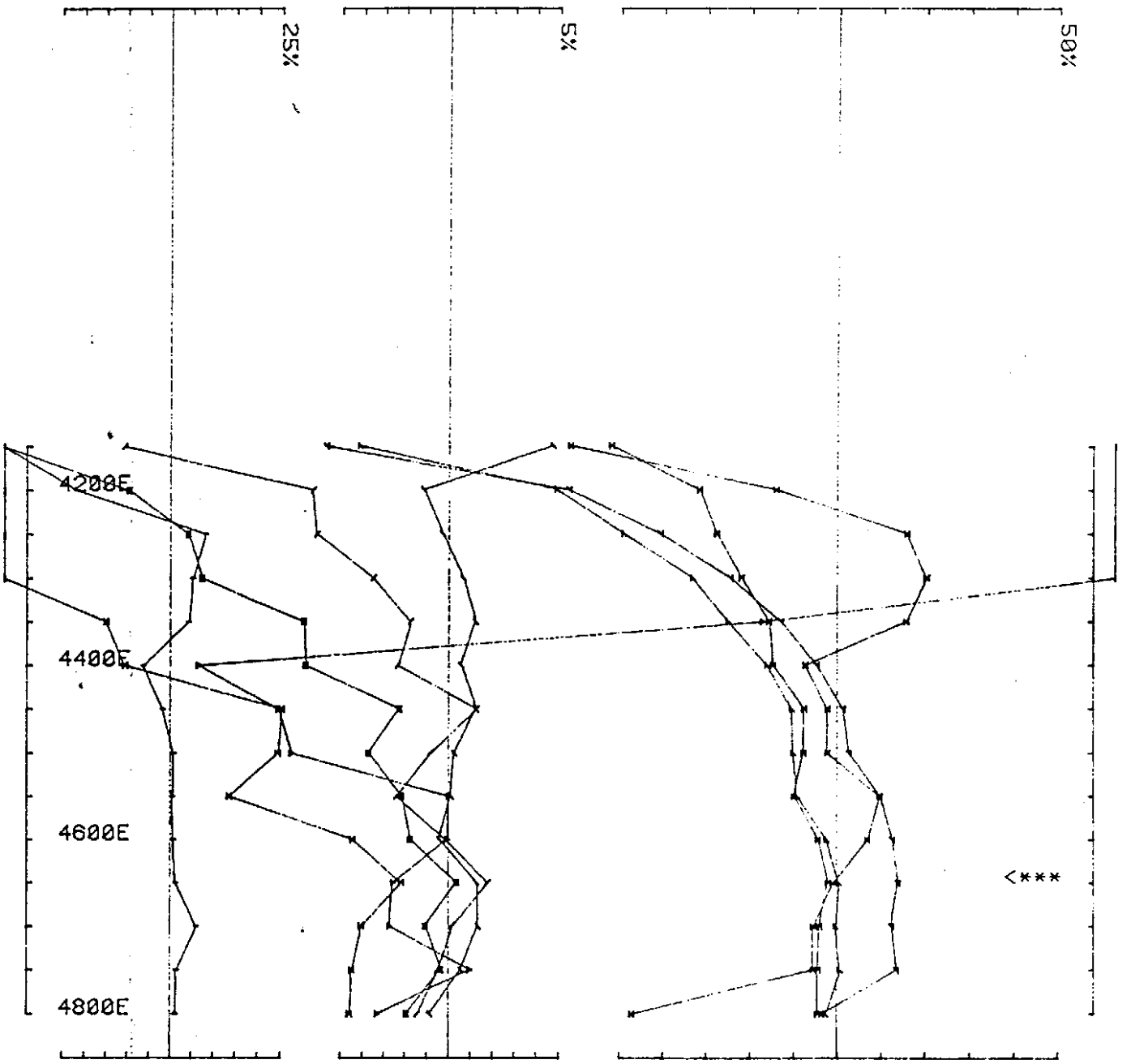
loop dimensions
600x800m

loop no 1
line 6200N
component Hz
secondary field
Ch 1 point norm.
03/12/88

5 cm

300

649389

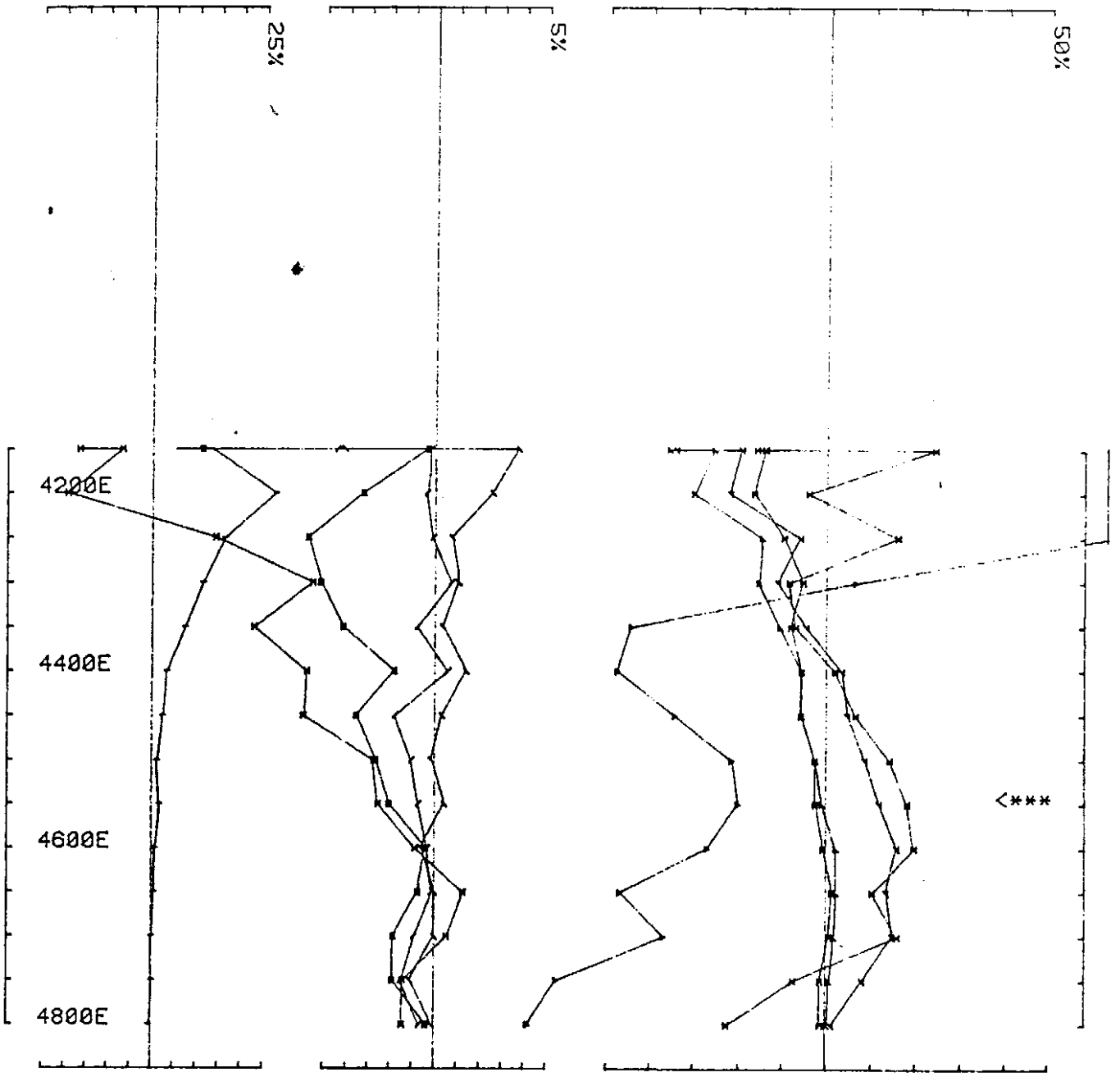


LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

loop dimensions
600x800m

loop no 1
line 6000N
component Hz
secondary field
Ch 1 point norm.
30/11/88

5 cm



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

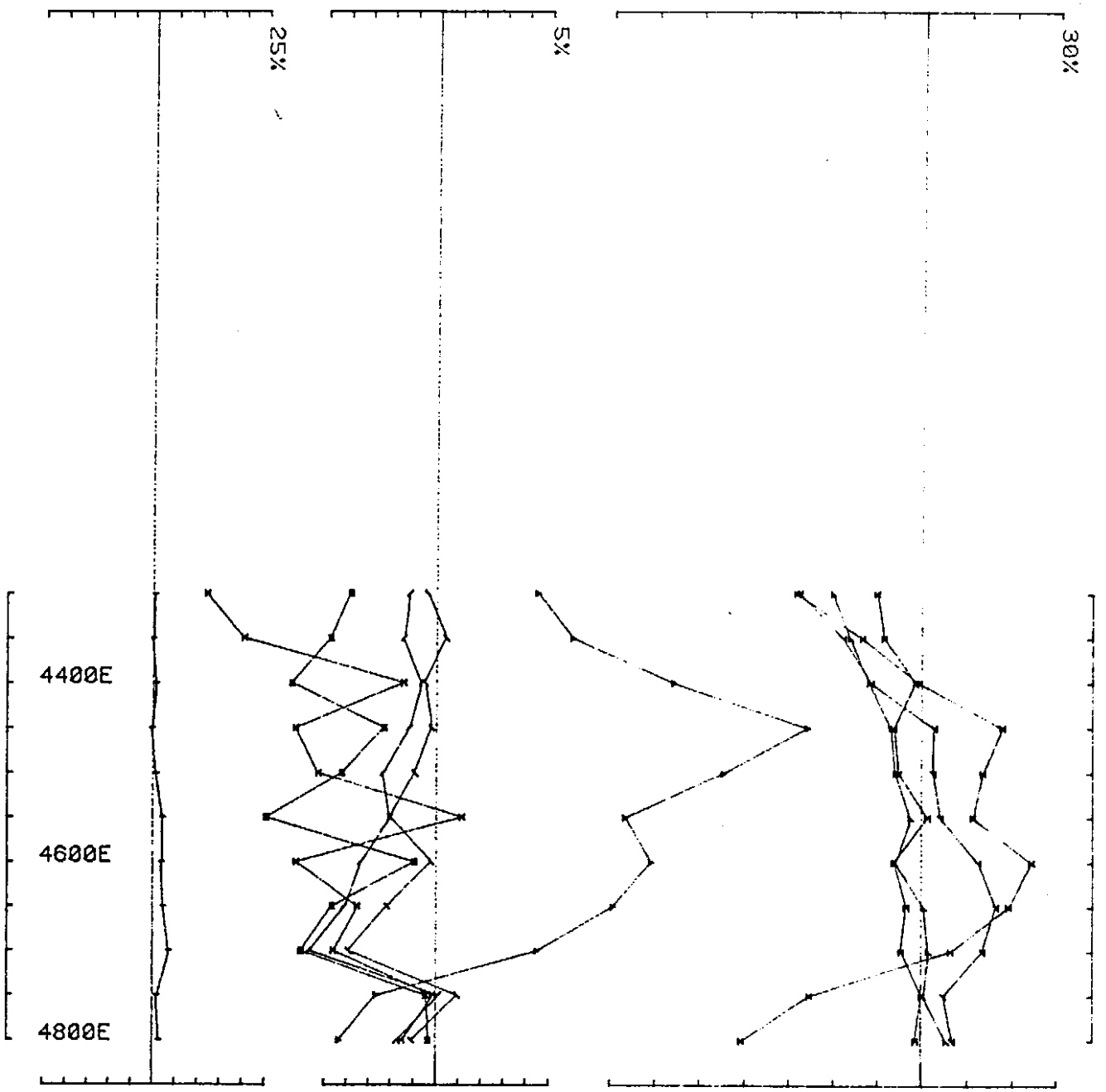
loop dimensions
800x800m

loop no 1
line 5800N
component Hz
secondary field
Ch 1 point norm.
29/11/88

5 cm

302

649391



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

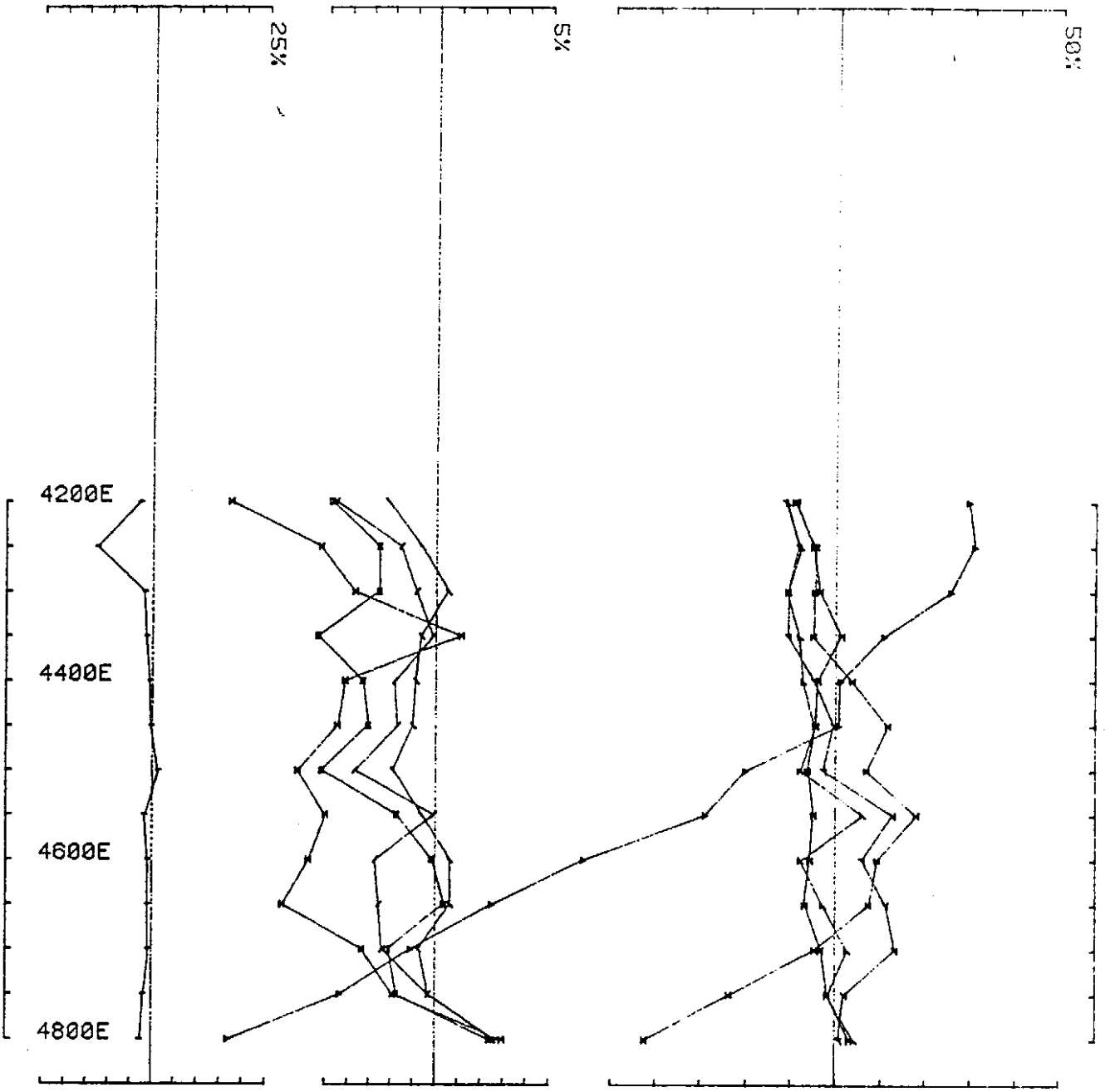
loop dimensions
800x800m

loop no 1
line 6600N
component Hz
secondary field
Ch1 contin norm
07/12/88

5 cm

303

649392



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

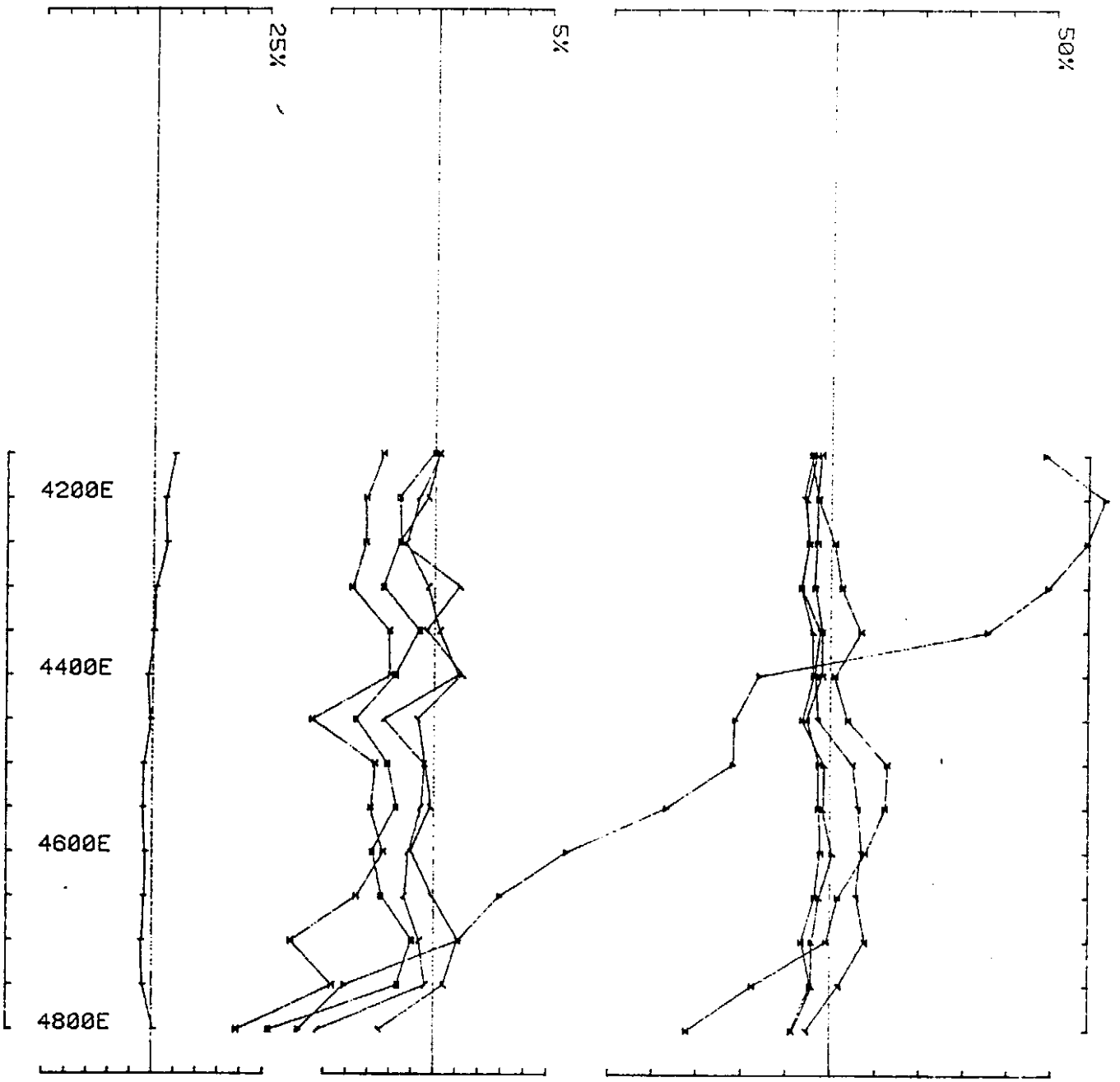
loop dimensions
800x800m

loop no 1
line 6400N
component Hz
secondary field
Ch1 contin norm
07/12/88

5 cm

304

649393



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

loop dimensions
800x800m

loop no 1
line 6200N
component Hz
secondary field
Ch1 contin norm
03/12/88

5 cm

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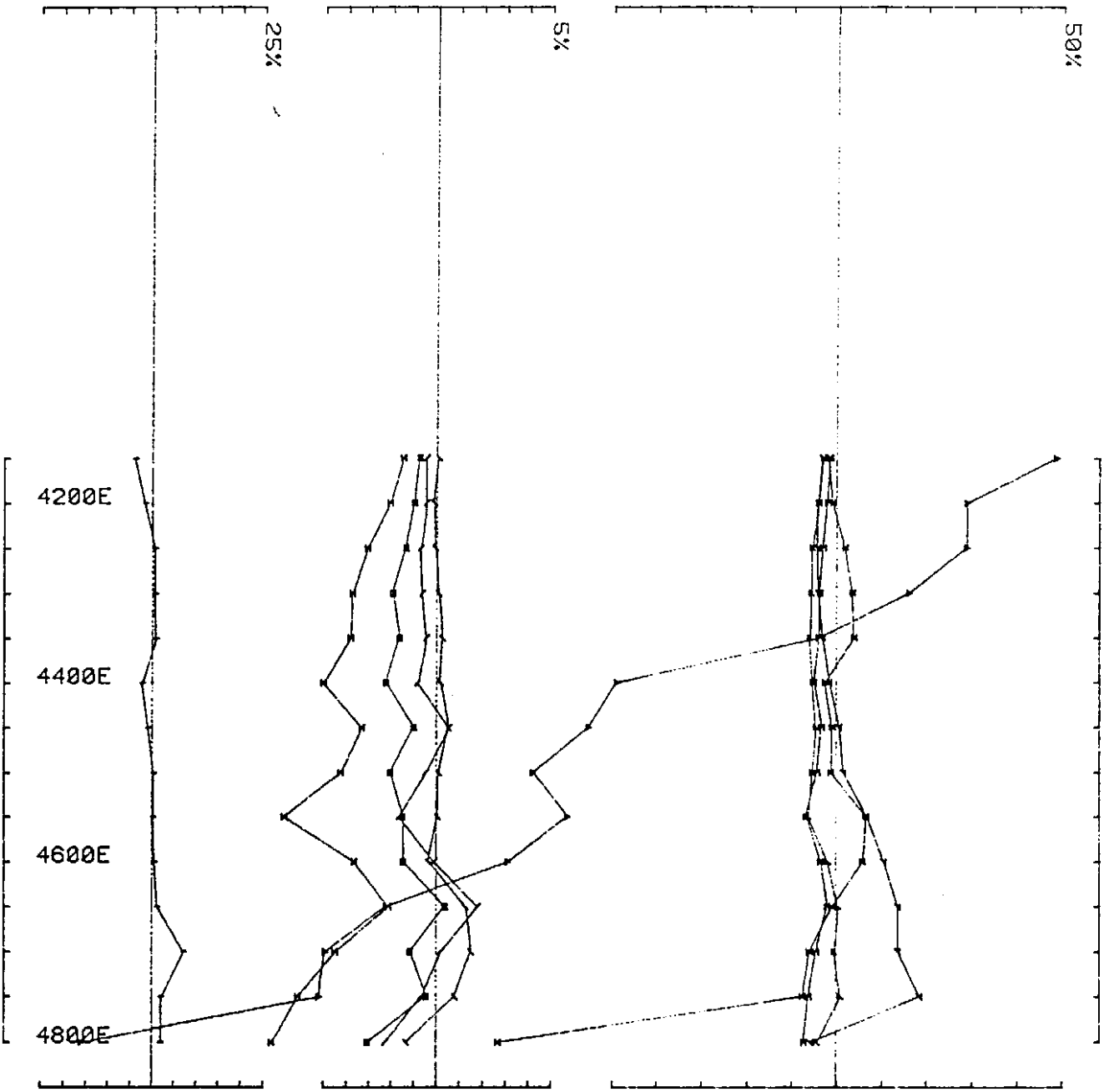
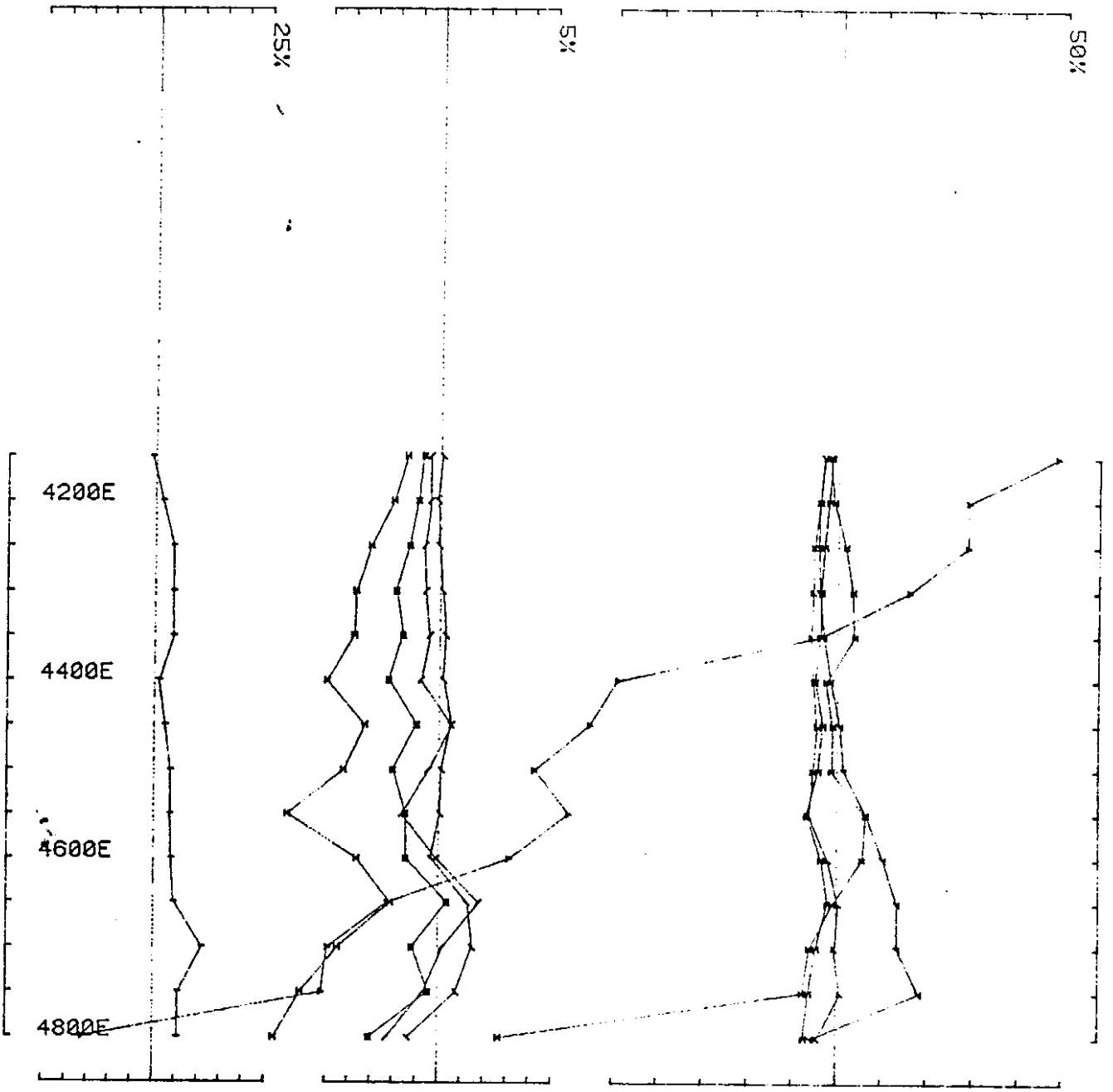


LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

loop dimensions
600x800m

loop no 1
line 6000N
component Hz
secondary field
Chl contin norm
30/11/88

5 cm



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

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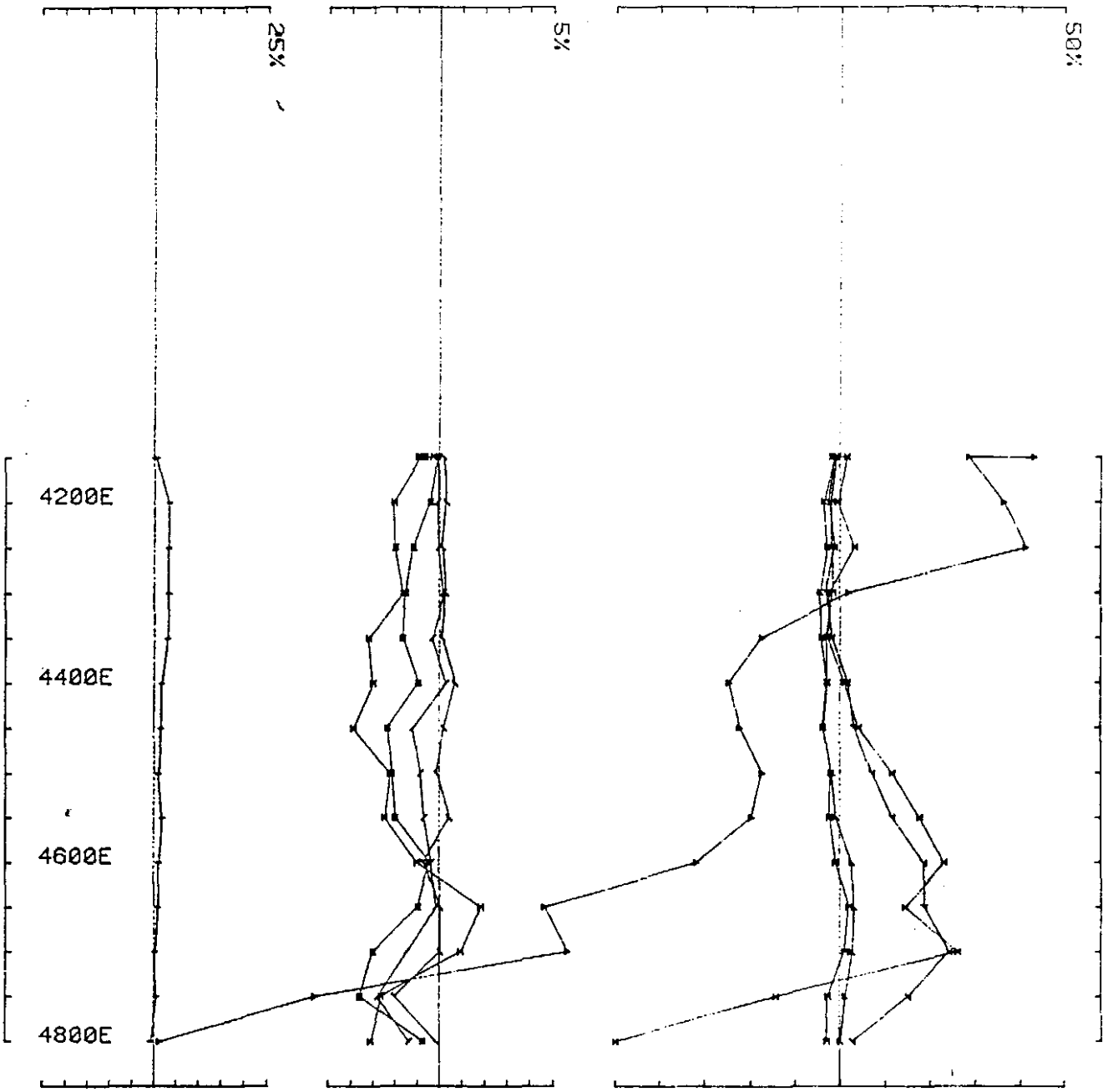
loop no 1
line 6000N
component Hz
secondary field
Ch contin norm.
30/11/88

5 cm

649396



LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

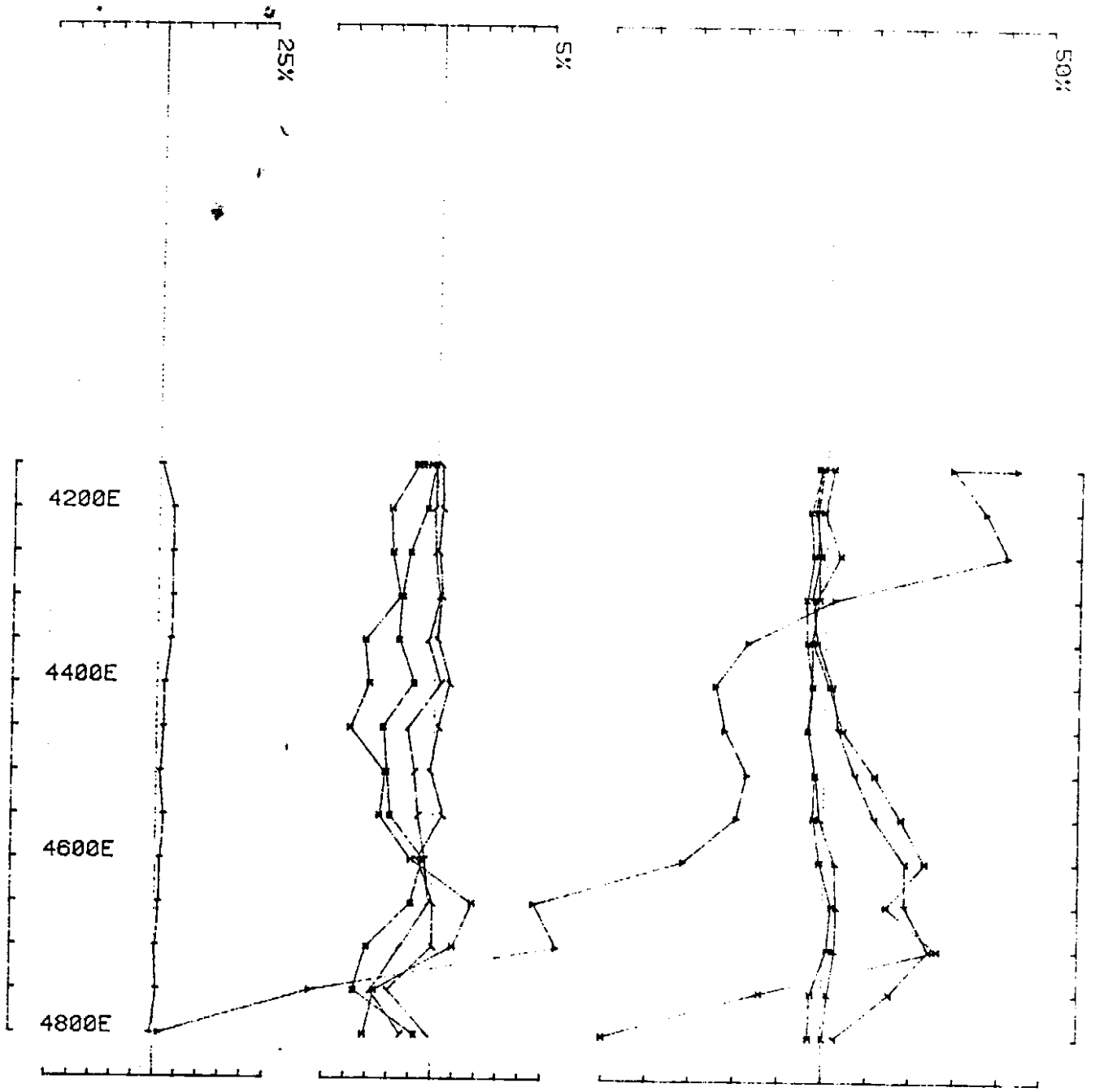
loop dimensions
600x800m

loop no 1
line 5800N
component Hz
secondary field
Ch1 contin norm
29/11/88

5 cm

308

649397



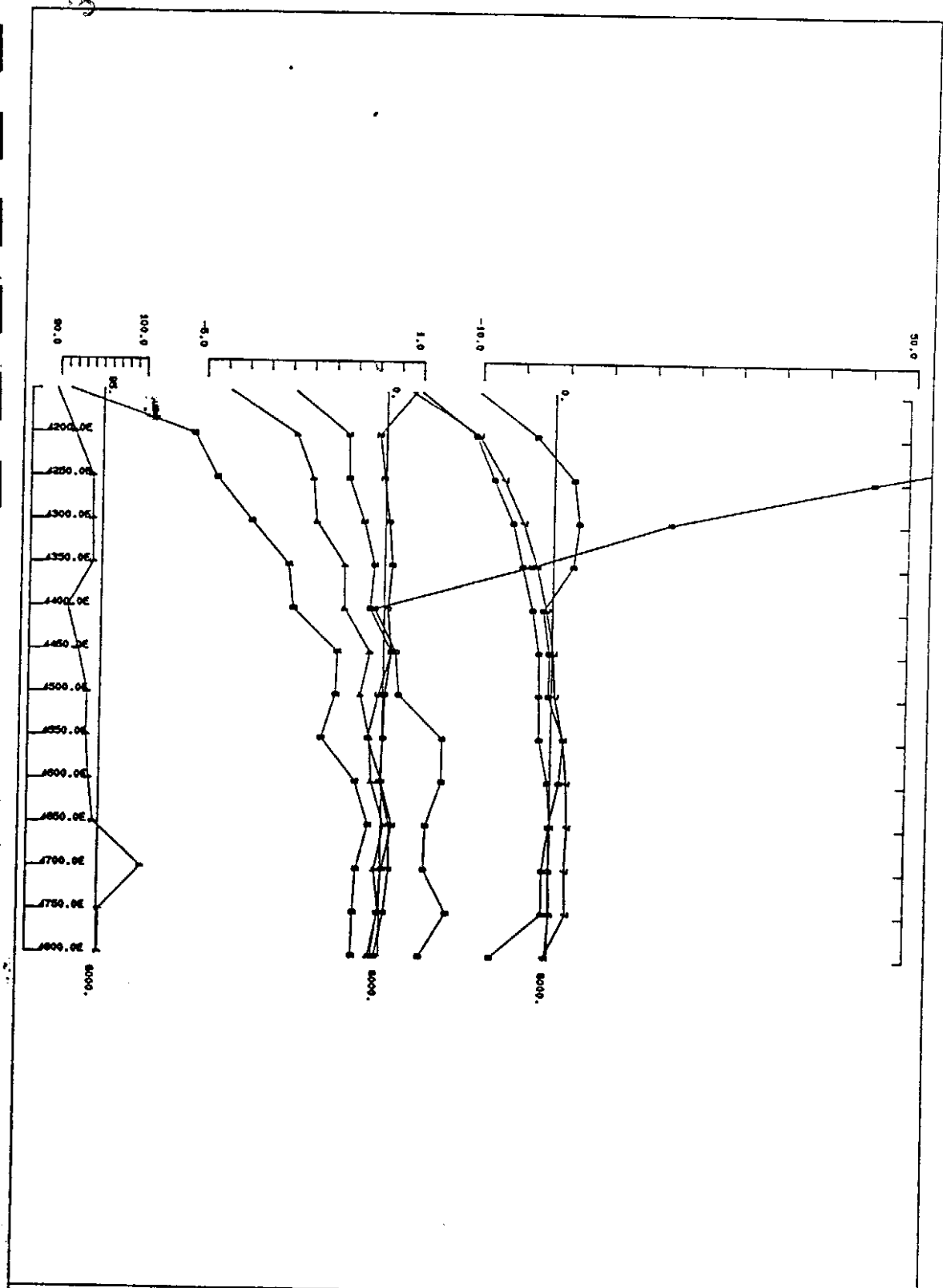
LAMONTAGNE GEOPHYSICS LTD job 8861
client ABERFOYLE RESOURCES LTD
area MACKINTOSH
UTEM SURVEY at base freq (hz) 26.230

loop dimensions
800x800m

loop no 1
line 5800N
component Hz
secondary field
Chl contin norm.
29/11/88

5 cm

649398

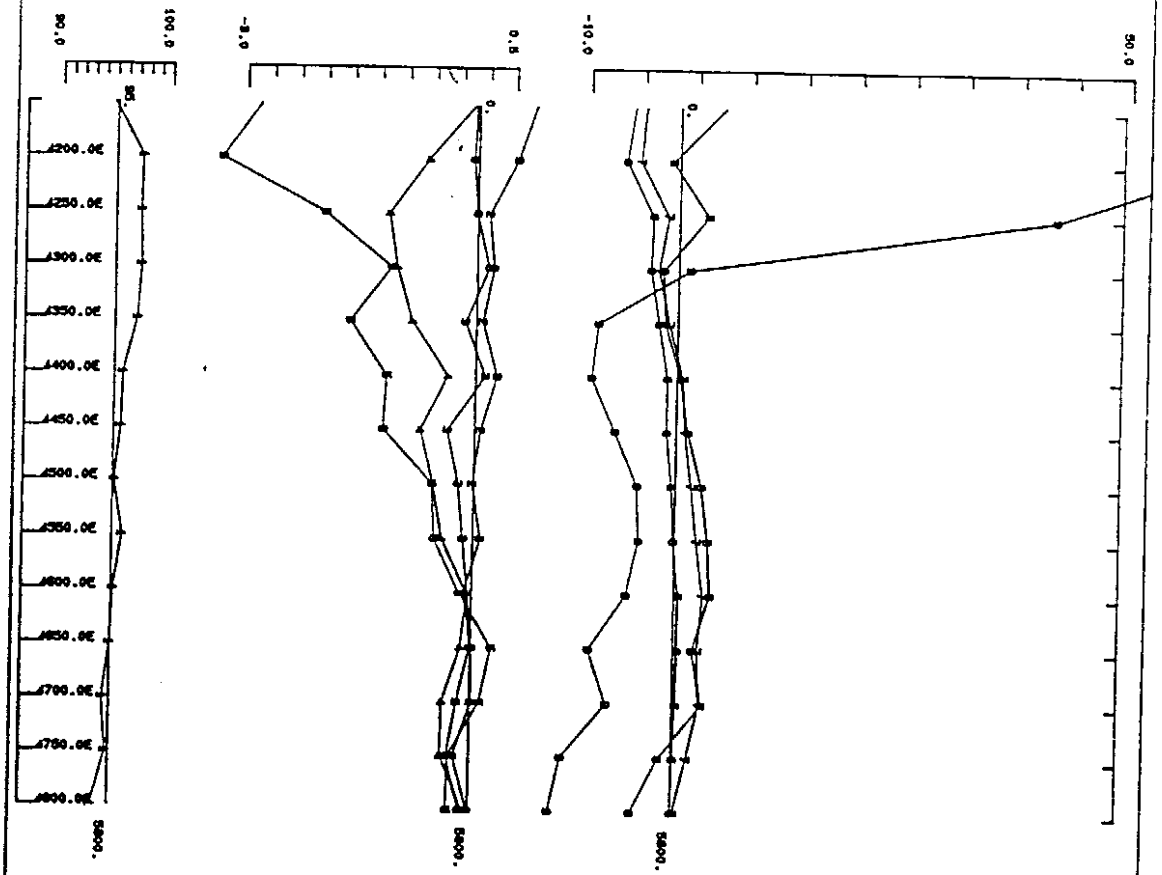


Mackintosh I-Zone
Loop 1
Line 6000N
component Hz
Secondary field
Channel 1
Point norm at 6000N 4300E
Option 4
19/12/88

5 cm

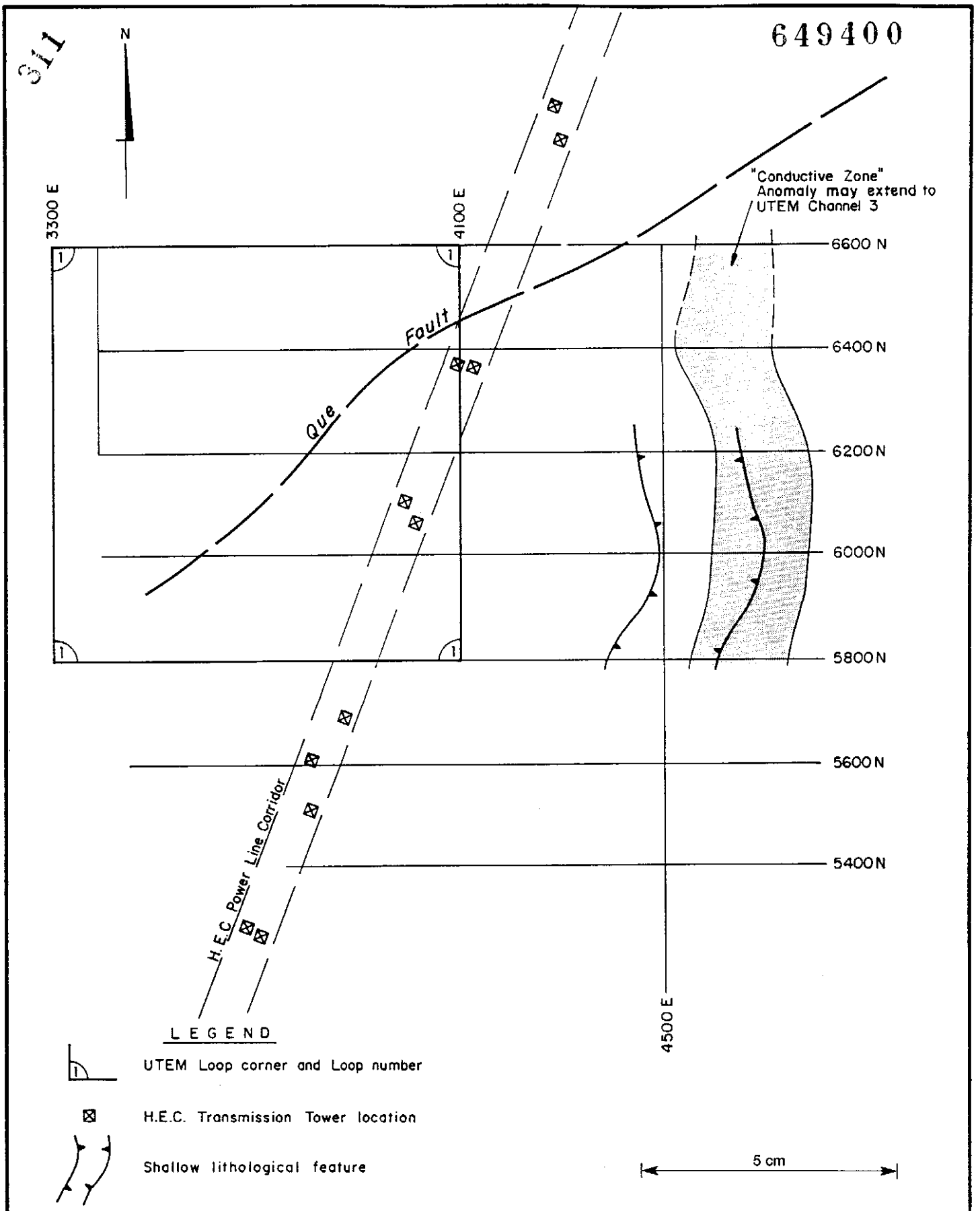
649399

310



Mackintosh I-Zone
Loop 1
Line 5800N
component Hz
Secondary field
Channel 1
Point norm at 5000N 4300E
Option 4
19/12/88

5 cm

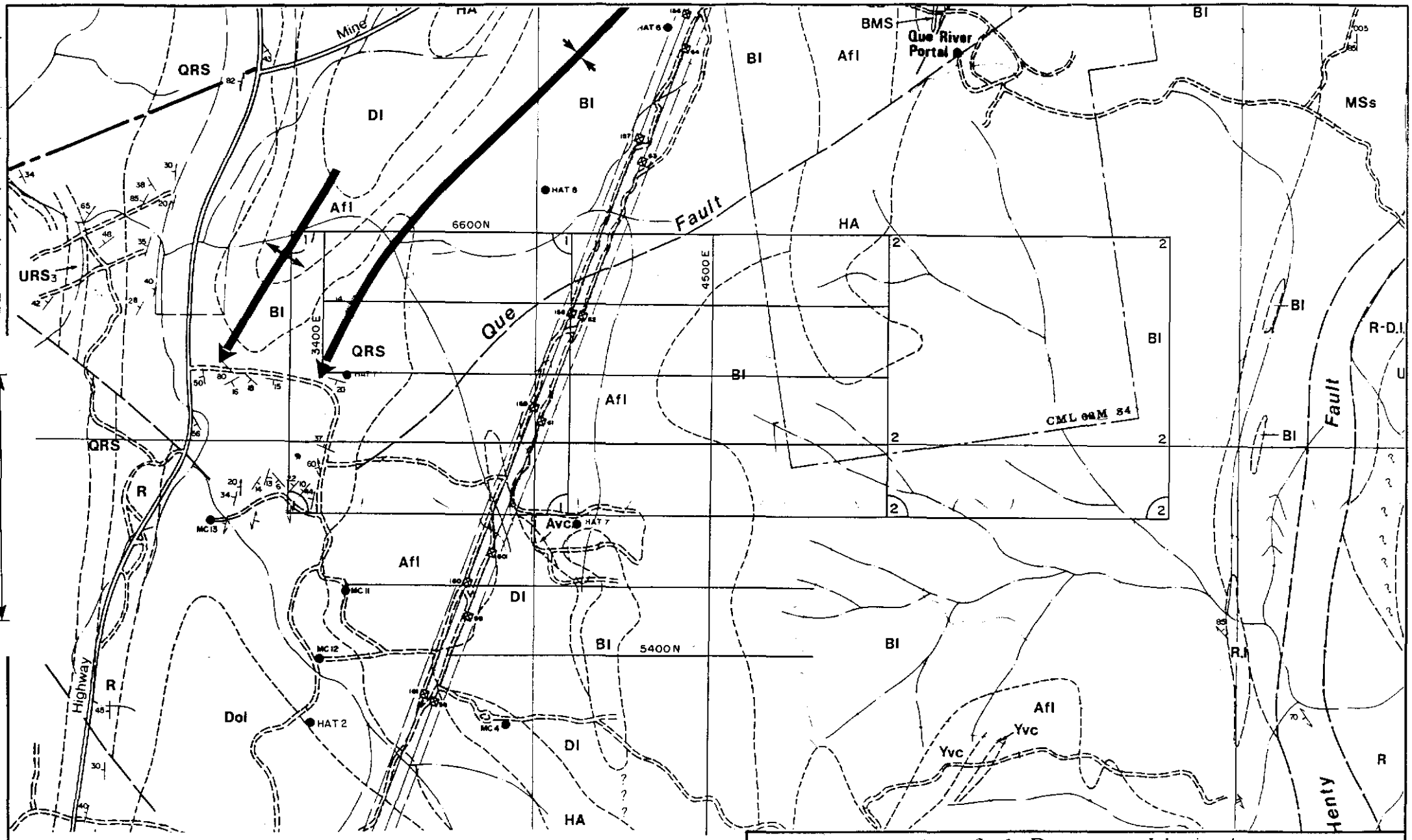


Aberfoyle Resources Limited

EXPLORATION DIVISION

PLATE 1

REVISIONS				MACKINTOSH E.L.	Compiled : JJR
Init.	Date	Init.	Date	I - ZONE UTEM INTERPRETATION	Drawn : JJR
				LOOP ONE	Traced : Geo Drafting
					Checked : JS
Location Code :				Scale : 1 : 10 000 / Date : January 1989	Plate No. : MAC 221


Mine
QRS
DI
BI
HA
Afl
BMS
Que River Portal
MSs
HAT 6
HAT 5
Fault
6600N
4500E
3400E
URS3
Que
CML 88M 84
R
MC 13
HAT 7
Avc
MC 11
MC 12
5400N
Highway
Dol
HAT 2
MC 4
Yvc
R-D.I.
Henty
5 cm
N
0
500
metres
UTEM loop corner and loop number
Aberfoyle Resources Limited
EXPLORATION DIVISION
PLATE 2
REVISIONS
Init Date Init Date
Location Code
NORTH WEST TASMANIA
MACKINTOSH EL 106/87
I-Zone Follow-Up UTEM Loop Position
LOOP TWO
Scale 1:10 000
Date January, 1989
Compiled JJR
Drawn JJR
Traced GLC
Checked
Plate No MAC 222
649401

APPENDIX 24.

649403

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. MC1

DATE 3-5-88

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
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2	55	11.0 - 21.0	10					
3	56	21.0 - 31.0	10					
4	57	31.0 - 41.0	10					
5	58	41.0 - 51.0	10					
6	59	51.0 - 61.0	10					
7	427960	61.0 - 71.0	10					
8	61	71.0 - 81.0	10					
9	62	81.0 - 91.0	10					
10	63	91.0 - 101.0	10					
11	64	101.0 - 111.0	10					
12	65	111.0 - 121.0	10					
13	66	121.0 - 131.0	10					
14	67	131.0 - 141.0	10					
15	68	ST	* STD 3	J				
16	69	141.0 - 151.0	10					
17	427970	151.0 - 161.0	10					
18	71	161.0 - 171.0	10					
19	72	171.0 - 181.0	10					
20	73	181.0 - 191.0	10					
21	427974	191.0 - 195.5	4.5.					
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

649404

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05482

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3805	

DATE RECEIVED	RESULTS REQUIRED
30/05/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	23/06/88	1	21

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
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	427954/74	CG							Ba,Cr,Zr,Ti/401,Au,AuChk/309		
	427954/74	CG	Prep: 013,016						Zn,Ag/104		
	427954/74	CG							Ba/406		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC-1
Core Grind

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649405

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05482	23/06/88	3805	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Zn	Ag	Ag	Au	AuChk	Ba
1	1-11 427954	25	90	65	–	<0.5	–	0.063	–	1200
2	11-21 427955	50	140	50	–	1.0	–	0.166	–	2800
3	21-31 427956	50	105	80	–	1.5	–	0.239	–	3250
4	31-41 427957	110	85	120	–	<0.5	–	0.231	–	1300
5	41-51 427958	130	70	135	–	<0.5	–	0.218	–	1900
6	51-61 427959	100	145	200	–	1.5	–	0.218	–	>4000
7	61-71 427960	125	50	155	–	1.5	–	0.358	–	>4000
8	71-81 427961	170	250	1600	–	<0.5	–	0.772	–	>4000
9	81-91 427962	155	85	1450	–	<0.5	–	0.998	–	>4000
10	91-101 427963	275	215	5050	–	2.0	–	1.088	1.120	>4000
11	101-111 427964	165	280	5100	–	2.0	–	0.834	–	>4000
12	111-121 427965	340	695	6750	–	9.0	–	0.970	–	>4000
13	121-131 427966	170	445	–	3600	–	22	1.070	–	>4000
14	131-141 427967	190	170	–	5900	–	21	0.747	–	>4000
15	427968 *STD 3	120	185	2350	–	<0.5	–	0.009	–	1200
16	141-151 427969	40	60	355	–	2.0	–	0.365	–	>4000
17	151-161 427970	50	15	500	–	8.0	–	0.517	–	>4000
18	161-171 427971	95	285	–	2075	–	59	1.177	1.040	>4000
19	171-181 427972	80	275	–	1600	–	54	0.986	–	>4000
20	181-191 427973	35	10	460	–	4.0	–	0.096	–	>4000
21	191-195.5 427974	40	95	160	–	–	29	0.194	–	>4000
22										
23	DETECTION	5	5	5	25	0.5	2	0.008	0.008	10
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	104	101	104	309	309	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649406

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05482	23/06/88	3805	2 OF 2

TUBE No.	SAMPLE No.	Ba	As	Cr	Zr	Ti	~~Zr/Ti~~	Zr CHECKS		
1	427954	–	220	<5	~~120~~	1400		140		
2	427955	–	710	15	~~120~~	2150		150		
3	427956	–	5	<5	~~120~~	2350		150		
4	427957	–	440	15	~~110~~	2150		140		
5	427958	–	250	<5	~~110~~	2350		140		
6	427959	0.82	680	15	~~120~~	2350		150		
7	427960	1.16	500	<5	~~95~~	2100		130		
8	427961	3.74	370	10	~~75~~	1850		120		
9	427962	5.25	260	7	~~75~~	1700		120		
10	427963	10.50	230	8	~~70~~	1300		120		
11	427964	6.40	270	<5	~~85~~	1600		130		
12	427965	7.40	860	6	~~85~~	1350		120		
13	427966	7.13	940	<5	~~100~~	1650		150		
14	427967	6.71	650	5	~~110~~	1700		140		
15	427968	–	20	930	~~45~~	2450		80		
16	427969	1.44	420	10	~~130~~	2650		160		
17	427970	2.41	580	<5	~~150~~	2650		180		
18	427971	9.32	1500	<5	~~75~~	1350		120		
19	427972	8.21	1500	<5	~~100~~	1650		150		
20	427973	1.41	440	7	~~180~~	2700		200		
21	427974	0.99	1000	<5	~~170~~	2500		220		
22										
23	DETECTION	0.01	1	5	5	50				
24	UNITS	%	PPM	PPM	PPM	PPM				
25	METHOD	406	114	401	401	401				

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

406

649407

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 | 52 Murray Road, Welshpool, W.A. 6106 | Telex AA92560

FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05570

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
	RE:5482/501

DATE RECEIVED	RESULTS REQUIRED
04/07/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	14/07/88	1	40

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427954/74	PU							Zr/401		
	427975,427977/94	PU							Ti/401,Au,AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC 1
MC 2
CHECKS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649408

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05570	14/07/88		1 OF 2

TUBE No.	SAMPLE No.	Ti	Zr	Au	AuChk					
1	427954	–	140	–	–					
2	427955	–	150	–	–					
3	427956	–	150	–	–					
4	427957	–	140	–	–					
5	427958	–	140	–	–					
6	427959	–	150	–	–					
7	427960	–	130	–	–					
8	427961	–	120	–	–					
9	427962	–	120	–	–					
10	427963	–	120	–	–					
11	427964	–	130	–	–					
12	427965	–	120	–	–					
13	427966	–	150	–	–					
14	427967	–	140	–	–					
15	427968	–	80	–	–					
16	427969	–	160	–	–					
17	427970	–	180	–	–					
18	427971	–	120	–	–					
19	427972	–	150	–	–					
20	427973	–	200	–	–					
21	427974	–	220	–	–				MC1	
22	427975	5050	–	IS	–				MC2	
23	427977	3800	–	IS	–					
24	427978	3750	–	IS	–					
25	427979	2800	–	<0.008	–					

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649409

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05570	14/07/88		2 OF 2

TUBE No.	SAMPLE No.	Ti	Zr	Au	AuChk					
1	427980	3200	-	0.095	-					
2	427981	2700	-	0.494	0.495					
3	427982	2600	-	0.167	-					
4	427983	3650	-	IS	-					
5	427984	2150	-	0.255	-					
6	427985	1450	-	0.382	-					
7	427986	1650	-	0.522	-					
8	427987	2750	-	0.130	-					
9	427988	2800	-	0.050	-					
10	427989	2700	-	0.168	-					
11	427990	3150	-	0.065	-					
12	427991	2500	-	<0.008	-					
13	427992	2150	-	IS	-					
14	427993	2200	-	<0.008	-					
15	427994	2800	-	IS	-					
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5	0.008	0.008					
24	UNITS	PPM	PPM	PPM	PPM					
25	METHOD	401	401	309	309					

Results in ppm unless otherwise specified
- element present: but concentration too low to measure
- element concentration is below detection limit
- element not determined

AUTHORISED OFFICER

649410

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05615

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
4402	

DATE RECEIVED	RESULTS REQUIRED
27/07/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	16/09/88	1	50

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	428356/405	PU	Prep: 016						Cu,Pb,Zn,Ag/101,As/114,Fe/104		
	428356/405	PU	Prep: 016						Ba,Sb/401		
	428356/405	PU	Prep: 016						Au/309		
	428356/405	PU	Prep: 016						Ag/104		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC-1
CORE CUTTING
81-131m
1m INTERVALS.
MET. TESTING.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649411

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	As	Au	Ba	Fe
1	81-82 428356	115	170	3150	2.5	–	180	1.189	7.49	1.95
2	82-83 428357	135	75	1350	2.5	–	260	0.717	3.74	2.40
3	83-84 428358	340	335	1600	3.0	–	220	1.010	0.87	2.95
4	84-85 428359	20	230	140	1.0	–	120	0.210	0.40	2.40
5	85-86 428360	20	135	170	1.5	–	150	0.185	0.78	2.60
6	86-87 428361	20	20	70	1.0	–	140	0.189	1.61	2.75
7	87-88 428362	155	195	2600	3.5	–	180	0.588	5.39	2.30
8	88-89 428363	355	65	2700	3.5	–	130	0.666	14.10	2.05
9	89-90 428364	210	140	1600	4.0	–	240	0.638	4.38	2.70
10	90-91 428365	345	205	1400	5.0	–	260	0.832	2.89	3.30
11	91-92 428366	245	640	6850	5.5	–	290	0.790	7.82	2.50
12	92-93 428367	670	575	7650	–	13	350	0.879	6.77	2.20
13	93-94 428368	60	40	665	1.5	–	160	0.356	0.81	1.95
14	94-95 428369	120	450	1850	3.0	–	230	0.377	1.09	2.40
15	95-96 428370	140	295	3500	3.5	–	300	0.555	5.02	1.80
16	96-97 428371	260	165	1400	4.0	–	260	0.431	4.31	2.35
17	97-98 428372	415	335	6300	–	10	230	1.960	19.50	2.00
18	98-99 428373	255	225	3700	5.0	–	120	1.400	14.20	1.35
19	99-100 428374	230	870	1700	4.5	–	220	0.678	2.28	1.90
20	100-101 428375	140	405	1400	2.5	–	180	0.459	2.24	1.90
21	101-102 428376	210	740	6450	4.0	–	230	0.645	4.11	2.05
22	102-103 428377	130	315	3300	4.0	–	270	0.489	3.74	1.90
23	103-104 428378	395	405	17500	–	9	290	1.160	17.70	1.60
24	104-105 428379	190	880	4950	5.0	–	320	0.758	4.24	2.65
25	105-106 428380	120	445	1650	5.0	–	280	0.708	3.00	3.20

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649412

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	As	Au	Ba	Fe
1	106-107 428381	35	25	175	2.0	–	180	0.525	2.03	2.65
2	107-108 428382	10	10	125	1.5	–	80	0.237	0.68	2.15
3	108-109 428383	275	495	6700	6.5	–	220	2.100	7.94	2.40
4	109-110 428384	110	515	3500	5.0	–	170	0.552	2.07	2.50
5	110-111 428385	140	930	5750	6.0	–	240	0.730	5.89	2.40
6	111-112 428386	235	850	12500	6.5	–	240	1.173	8.37	1.90
7	112-113 428387	390	755	12000	–	9	400	1.015	8.12	2.80
8	113-114 428388	315	960	4350	6.5	–	320	0.915	4.81	3.45
9	114-115 428389	980	1050	3550	–	10	580	1.150	5.77	6.20
10	115-116 428390	105	455	2450	5.0	–	430	0.672	1.66	3.75
11	116-117 428391	230	2950	3800	9.0	–	390	0.658	0.98	2.75
12	117-118 428392	235	805	2550	–	15	720	0.990	3.66	4.75
13	118-119 428393	100	645	4500	–	14	700	1.129	9.38	6.10
14	119-120 428394	295	635	6150	7.5	–	510	0.921	9.37	3.50
15	120-121 428395	155	330	535	4.5	–	410	0.797	3.48	4.00
16	121-1 428396	85	320	1600	5.0	–	450	0.868	2.09	2.85
17	122-123 428397	205	145	1040	4.0	–	280	0.606	6.70	2.30
18	123-124 428398	170	510	1700	5.5	–	760	1.005	1.55	4.90
19	124-125 428399	135	205	1200	5.0	–	740	0.972	2.46	4.35
20	125-126 428400	185	1050	4100	8.5	–	450	0.778	7.72	3.25
21	126-127 428401	140	580	4550	7.5	–	430	0.742	4.58	3.35
22	127-128 428402	385	890	6850	–	15	490	1.410	9.96	4.75
23	128-129 428403	145	940	3650	–	24	800	1.690	7.53	6.50
24	129-130 428404	75	185	1600	–	11	430	0.678	2.84	3.25
25	130-131 428405	130	440	4550	–	15	350	0.544	6.22	2.60

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649413

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	3 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	As	Au	Ba	Fe
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	2	1	0.008	0.01	0.05
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%
24	METHOD	101	101	101	101	104	114	309	403	104
25										

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649414

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	4 OF 6

TUBE No.	SAMPLE No.	Sb
1	428356	5
2	428357	4
3	428358	8
4	428359	<3
5	428360	3
6	428361	<3
7	428362	5
8	428363	7
9	428364	15
10	428365	20
11	428366	15
12	428367	45
13	428368	<3
14	428369	6
15	428370	9
16	428371	20
17	428372	45
18	428373	10
19	428374	20
20	428375	7
21	428376	15
22	428377	4
23	428378	15
24	428379	15
25	428380	15

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649415

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	5 OF 6

TUBE No.	SAMPLE No.	Sb								
1	428381	<3								
2	428382	<3								
3	428383	15								
4	428384	9								
5	428385	15								
6	428386	7								
7	428387	60								
8	428388	30								
9	428389	100								
10	428390	9								
11	428391	16								
12	428392	110								
13	428393	80								
14	428394	20								
15	428395	15								
16	428396	10								
17	428397	15								
18	428398	25								
19	428399	7								
20	428400	8								
21	428401	15								
22	428402	110								
23	428403	250								
24	428404	10								
25	428405	10								

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649416

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05615	16/09/88	4402	6 OF 6

TUBE No.	SAMPLE No.	Sb								
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	3								
23	UNITS	PPM								
24	METHOD	401								
25										

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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649417

PAGE 1 OF 1

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. MC 2

DATE 3-5-88

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	~~42~~ 79975	0.0 - 3.4	3.4					
2	76	3.4 - 22.4	19					
3	77	22.4 - 33.3	10.9					
4	78	33.3 - 42.2	8.9					
5	79	42.2 - 52.2	10					
6	~~42~~ 79980	52.2 - 62.2	10					
7	81	62.2 - 72.2	10					
8	82	72.2 - 80.0	7.8					
9	83	80.0 - 84.7	4.7					
10	84	84.7 - 94.7	10					
11	85	94.7 - 104.7	10					
12	86	104.7 - 114.7	10					
13	87	114.7 - 124.7	10					
14	88	124.7 - 134.7	10.					
15	89	134.7 - 146.0	11.3					
16	~~42~~ 79990	146.0 - 156.0	10					
17	91	156.0 - 166.0	10					
18	92	ST	* STD3	✓				
19	93	166.0 - 176.0	10					
20	~~42~~ 79994	176.0 - 187.4	11.4					
21								
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30								
31								
32								

649418

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05501

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3813	

DATE RECEIVED	RESULTS REQUIRED
06/06/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	08/07/88	1	20

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427975/94	CG	Prep: 01G,016						Cu,Pb,Zn,Ag/101,As/114		
	427975/94	CG							Ba,Cr,Zr,Ti/401,Au,AuChk/309		
	427975/94	CG	Prep: 01G,016						Zn,Ag/104		
	427975/94	CG							Ba/406		
	427975/94	CG							Ba,Cr,Zr,Ti/201		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC-2
GRINDING.
THIS REPORT
CONTAINS THE
4 ELEMENTS DONE
ON No. 427976 BY ICP
THIS IS THE ONLY DIFFERENCE
WITH EARLIER REPORT

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649419

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05501	08/07/88	3813	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Zn	Ag	Ag	Au	AuChk	Ba
1	427975	105	710	840	–	1.0	–	0.023	0.030	–
2	427976	35	210	770	–	3.0	–	0.017	–	5540
3	427977	35	45	500	–	1.5	–	<0.008	–	–
4	427978	40	195	155	–	4.5	–	0.042	–	–
5	427979	55	55	230	–	6.0	–	<0.008	–	–
6	427980	45	80	380	–	8.5	–	0.099	–	–
7	427981	100	530	–	3025	–	11	0.545	0.590	–
8	427982	90	335	720	–	6.0	–	0.184	–	–
9	427983	35	135	525	–	2.5	–	0.063	–	–
10	427984	145	165	620	–	–	16	0.278	–	–
11	427985	70	210	995	–	–	15	0.411	–	–
12	427986	80	535	–	4200	–	11	0.549	–	–
13	427987	35	40	6975	–	4.5	–	0.159	–	–
14	427988	40	60	1650	–	3.0	–	0.048	–	–
15	427989	45	110	540	–	6.5	–	0.200	–	–
16	427990	45	30	470	–	2.5	–	0.074	–	–
17	427991	60	45	205	–	0.5	–	0.015	–	–
18	427992	125	200	2350	–	1.0	–	0.014	–	–
19	427993	15	80	150	–	1.0	–	0.010	–	–
20	427994	15	30	200	–	1.0	–	0.066	–	–
21										
22										
23	DETECTION	5	5	5	25	0.5	2	0.008	0.008	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	104	101	104	309	309	201

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05501	08/07/88	3813	2 OF 2

TUBE No.	SAMPLE No.	Ba	Ba	As	Cr	Cr	Zr	Zr	Ti	Ti
1	427975	2000	–	66	–	15	–	240	–	5250
2	427976	15	15	59	58	15	174	15	2480	15
3	427977	3650	–	200	–	9	–	200	–	3800
4	427978	>5000	0.50	440	–	10	–	220	–	3850
5	427979	3550	–	620	–	10	–	200	–	3900
6	427980	>5000	1.72	270	–	10	–	220	–	3250
7	427981	>5000	5.25	260	–	9	–	170	–	2700
8	427982	>5000	1.01	290	–	25	–	230	–	2350
9	427983	>5000	2.83	240	–	7	–	230	–	3750
10	427984	>5000	4.65	320	–	15	–	140	–	2500
11	427985	>5000	11.83	610	–	10	–	110	–	1450
12	427986	>5000	9.72	930	–	9	–	110	–	1600
13	427987	>5000	1.42	290	–	5	–	170	–	2850
14	427988	>5000	0.56	360	–	9	–	160	–	2900
15	427989	>5000	2.36	600	–	6	–	140	–	2750
16	427990	4450	–	260	–	110	–	160	–	3300
17	427991	1850	–	180	–	530	–	190	–	2600
18	427992	1150	–	17	–	810	–	75	–	2000
19	427993	2300	–	77	–	<5	–	230	–	2200
20	427994	1450	–	27	–	<5	–	260	–	2830
21										
22										
23	DETECTION	10	0.01	1	10	5	5	5	10	50
24	UNITS	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	401	406	114	201	401	201	401	201	401

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

LICENCE: CORE GRIND

PROJECT: MC-3

649421

SAMPLE NUMBER	DEPTH FROM	DEPTH TO	INTERVAL LENGTH
427201	12.0	22.0	10 m
" 202	22.0	27.50	5.5 m
" 203	27.5	37.50	10.0
" 204	37.5	47.50	10.0
" 205	47.5	52.90	5.4
" 206	52.9	62.90	10.0
" 207	62.9	72.90	10.0
" 208	72.9	82.90	10.0
" 209	82.9	92.90	10.0
427210	92.9	102.90	10.0
" 11	102.9	112.90	10.0
" 12	112.9	122.90	10.0
" 13	122.9	130.50	7.60
" 14	130.5	140.50	10.0
" 15	140.5	150.50	10.0
" 16	150.5	155.50	5.0
" 17	155.5	160.50	5.0
" 18	160.5	165.50	5.0
" 19	165.5	170.00	4.5
" 20	170.0	173.10	3.1
" 21	173.1	178.10	5.0
" 22	178.1	183.10	5.0
" 23	183.1	188.10	5.0
" 24	188.1	193.10	5.0
" 25	193.1	198.10	5.0
" 26	198.1	203.10	5.0
" 27	203.1	208.10	5.0
" 28	208.1	213.10	5.0
" 29	213.1	218.10	5.0

SAMPLE NUMBER	DEPTH FROM	DEPTH TO	INTERVAL
427230	218.10	223.1	5.0
" 31	223.1	228.1	5.0
" 32	228.1	233.1	5.0
" 33	233.1	238.1	5.0
" 34	238.1	243.1	5.0
" 35	243.1	248.1	5.0
" 36	248.1	253.1	5.0
" 37	253.1	258.1	5.0
" 38	258.1	264.4 EOH	6.3

649422

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05251

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3037	

DATE RECEIVED	RESULTS REQUIRED
14/03/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	11/04/88	1	38

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	427201/38	CG	Prep: 013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	427201/38	CG							Ti,Cr,Zr,Ba/401		
	427201/38	CG							Au/309		
	427201/38	CG	Prep: 013,016						Pb,Zn,Ag/104		
	427201/38	CG							AuChk/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC-3
Core Grinding

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649423

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05251	11/04/88	3037	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Au	AuChk
1	12-22 427201	55	65	–	380	–	2.0	–	<0.008	<0.008
2	22-27.5 427202	50	335	–	85	–	1.5	–	0.012	–
3	27.5-37.5 427203	55	385	–	75	–	3.5	–	0.011	–
4	37.5-47.5 427204	55	30	–	95	–	1.5	–	0.013	–
5	47.5-52.9 427205	70	<5	–	105	–	–	13	<0.008	–
6	52.9-62.9 427206	65	<5	–	820	–	5.0	–	0.128	–
7	62.9-72.9 427207	45	<5	–	265	–	3.5	–	0.017	–
8	72.9-82.9 427208	85	<5	–	1200	–	–	25	0.159	–
9	82.9-92.9 427209	115	<5	–	2800	–	9.0	–	0.200	–
10	92.9-102.9 427210	280	110	–	2200	–	–	12	0.422	–
11	102.9-112.9 427211	145	10	–	920	–	7.0	–	0.248	–
12	112.9-122.9 427212	125	<5	–	1600	–	6.5	–	0.184	–
13	122.9-130.5 427213	125	<5	–	140	–	4.5	–	0.172	–
14	130.5-140.5 427214	140	5	–	900	–	6.0	–	0.277	–
15	140.5-150.5 427215	105	<5	–	100	–	3.5	–	0.288	–
16	150.5-155.5 427216	160	<5	–	290	–	9.0	–	0.483	–
	155.5-160.5 427217	245	<5	–	650	–	–	20	0.395	–
18	160.5-165.5 427218	190	<5	–	1300	–	9.0	–	0.263	–
19	165.5-170 427219	500	165	–	2950	–	7.0	–	0.194	–
20	170-173.1 427220	425	5	–	2200	–	8.5	–	0.150	–
21	173.1-178.1 427221	615	<5	–	4750	–	–	35	0.508	–
22	178.1-183.1 427222	435	<5	–	3650	–	3.5	–	0.762	0.734
23	183.1-188.1 427223	200	<5	–	405	–	4.5	–	0.838	–
24	188.1-193.1 427224	350	<5	–	640	–	2.0	–	0.575	–
25	193.1-198.1 427225	300	<5	–	430	–	4.0	–	0.451	–

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

423

649424

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05251	11/04/88	3037	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Au	AuChk
1	198·1-203·1 427226	220	<5	–	2300	–	9.5	–	0.500	–
2	203·1-208·1 427227	185	<5	–	2550	–	–	10	0.600	–
3	208·1-213·1 427228	230	–	0.60	–	1.30	–	33	0.547	–
4	213·1-218·1 427229	200	<5	–	5150	–	–	9	0.186	–
5	218·1-223·1 427230	355	<5	–	4600	–	–	11	0.639	0.634
6	223·1-228·1 427231	1400	–	1.50	–	2.35	–	20	0.831	–
7	228·1-233·1 427232	580	–	1.00	–	1.70	–	9	0.983	0.773
8	233·1-238·1 427233	400	350	–	6900	–	–	11	0.617	–
9	238·1-243·1 427234	270	<5	–	400	–	6.0	–	0.614	–
10	243·1-248·1 427235	1000	<5	–	620	–	7.0	–	0.802	–
11	248·1-253·1 427236	175	<5	–	1350	–	3.0	–	0.449	–
12	253·1-258·1 427237	250	<5	–	2650	–	6.5	–	0.503	–
13	258·1-264·4 427238	265	<5	–	1700	–	7.0	–	0.785	–
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	0.05	5	0.05	0.5	2	0.008	0.008
24	UNITS	PPM	PPM	%	PPM	%	PPM	PPM	PPM	PPM
25	METHOD	101	101	104	101	104	101	104	309	309

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649425

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05251	11/04/88	3037	3 OF 4

TUBE No.	SAMPLE No.	Ba	Ba	As	Cr	Ni	Zr	Ti	Zr/Ti	
1	427201	7300	–	76	9	10	210	3600	0.058	
2	427202	7500	–	130	<5	<5	260	4200	0.062	
3	427203	8000	–	110	<5	<5	260	4450	0.058	
4	427204	3750	–	400	9	<5	240	3950	0.061	
5	427205	3850	–	910	<5	<5	210	3450	0.061	
6	427206	–	0.87	290	7	5	230	2750	0.084	
7	427207	–	1.47	280	<5	<5	200	1900	0.106	
8	427208	–	6.45	400	<5	5	160	1250	0.128	
9	427209	–	3.10	390	<5	5	160	1350	0.119	
10	427210	–	1.40	610	7	5	150	1450	0.103	
11	427211	–	1.71	610	<5	5	150	1450	0.103	
12	427212	–	5.20	260	<5	5	160	1300	0.123	
13	427213	–	1.17	290	<5	10	160	1600	0.1	
14	427214	–	3.96	390	<5	10	170	1450	0.117	
15	427215	–	0.88	480	<5	5	180	1700	0.106	
16	427216	–	2.86	1300	15	15	150	1400	0.107	
17	427217	–	3.99	1100	<5	15	150	910	0.165	
18	427218	–	4.32	480	10	10	170	1100	0.155	
19	427219	–	2.56	130	<5	50	180	1200	0.15	
20	427220	–	6.41	120	10	40	150	780	0.192	
21	427221	–	7.60	240	<5	45	160	670	0.24	
22	427222	–	9.69	290	<5	20	120	530	0.226	
23	427223	–	1.15	480	<5	15	120	1050	0.114	
24	427224	–	1.26	190	15	25	120	970	0.124	
25	427225	–	1.12	190	<5	20	140	1100	0.127	

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

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425

649426

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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05251	11/04/88	3037	4 OF 4

TUBE No.	SAMPLE No.	Ba	Ba	As	Cr	Ni	Zr	Ti	Zr/Ti	
1	427226	–	5.55	320	10	15	120	790	0.152	
2	427227	–	6.94	390	<5	10	150	1450	0.103	
3	427228	–	11.56	270	<5	10	120	1150	0.104	
4	427229	–	6.59	450	<5	5	120	1150	0.104	
5	427230	–	7.60	510	<5	10	130	1450	0.09	
6	427231	–	7.27	820	<5	15	140	1250	0.112	
7	427232	–	11.10	470	<5	25	110	940	0.117	
8	427233	–	2.10	350	<5	20	140	2000	0.07	
9	427234	7150	–	720	20	15	140	2200	0.064	
10	427235	–	1.02	260	6	10	130	2050	0.063	
11	427236	–	3.68	380	<5	10	140	2100	0.067	
12	427237	–	2.62	270	<5	10	140	1850	0.076	
13	427238	–	5.22	320	<5	5	120	1550	0.077	
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	10	0.01	1	5	5	5	50		
24	UNITS	PPM	%	PPM	PPM	PPM	PPM	PPM		
25	METHOD	401	403	114	401	101	401	401		

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649427

LICENCE:

PROJECT: ML-3 CORE CUTTING.

COORD	NUMBER	DEPTH	COLOUR
	427916	208.1	209.1
	427917	209.1	210.1
	918	210.1	211.1
	919	211.1	212.1
	920	212.1	213.1
	921	228.1	229.1
	922	229.1	230.1
	923	230.1	231.1
	924	231.1	232.1
	925	232.1	233.1

COORD	NUMBER	DEPTH	COLOUR

649428

CLASSIC COMLABS LTD

Analytical Laboratories (INC. IN W.A.)

34 Buckingham Drive, Wangara Estate, Wanneroo, Western Australia 6065
Telephone: (09) 409 8898; Telex: Clasab 95452; Fax: (09) 409 6317

19 April 1988

Aberfoyle Resources Limited
P O Box 952
BURNIE TASMANIA 7320

Report - 8PE2529

YOUR REFERENCE:	3055
IDENTIFICATION:	As listed
WORK REQUIRED:	As
DATE RECEIVED:	28 March 1988
NOTE:	Final Report

Manager - WA Division: H R Firns

649429

[redacted] CLASSIC COMLABS LTD

Analysis code A1/2 | Report AC 8PE2529 | Page G1

Order No. 3055 | Results in ppm

Sample		Cu		Pb		Zn		Ag	
427916	208.1 –	48		760		1220		5	
427917		130		1800		4460		9	
427918	213.1	76	180	2280	3042	2880	8220	8	23.2
427919		460		8850		2.94%		86	
427920		185		1520		3140		8	
427921		155		4840		8100		5	
427922	228.1 –	115		5320		6950		3	
427923	233.1	185	305	4450	7268	1.33%	1.17%	5	6.2
427924		540		9330		1.55%		10	
427925		530		1.24%		1.48%		8	
Detn limit		(2)		(5)		(2)		(1)	

649430

[redacted] CLASSIC COMLABS LTD

Analysis code A1/1 Report AC 8PE2529 Page G1

Order No. 3055 Results in ppm

Sample	Fe	
427916	2.27%	
427917	2.66%	
427918	2.41%	2·21 %
427919	1.82%	
427920	1.90%	
427921	1.92%	
427922	1.40%	
427923	2.97%	2·31 %
427924	2.80%	
427925	2.48%	
Detn limit	(5)	

649431

CLASSIC COMLABS LTD

#30

Analysis code FA1 Report AC 8PE2529 Page F1

Order No. 3055 Results in ppm

Sample	Au	
427916	0.16	
427917	0.20	
427918	0.30	0.36
427919	0.68	
427920	0.48	
427921	0.48	
427922	0.52	
427923	0.64	0.58
427924	0.60	
427925	0.66	
Detn limit	(0.01)	

[redacted] CLASSIC COMLABS LTD

649431

431

Analysis code X3 | Report AC 8PE2529 | Page X1

Order No. 3055 | Results in ppm

Sample	As	
427916	280	
427917	255	256
427918	220	
427919	270	
427920	255	
427921	200	
427922	165	
427923	415	347
427924	585	
427925	370	
Detn limit	(2)	

LICENCE:
PROJECT: CORE GRIND MC-4

649433

432

SAMPLE NUMBER	FROM	TO	
427239	0.00	10.00	10.0
" 40	10.0	20.00	10.0
" 41	20.0	30.00	10.0
" 42	30.0	40.00	10.0
" 43	40.0	50.00	10.0
" 44	50.0	60.00	10.0
" 45	60.0	70.00	10.0
" 46	70.0	80.00	10.0
" 47	80.0	90.00	10.0
" 48	90.0	100.00	10.0
" 49	100.0	110.00	10.0
" 50	110.0	120.00	10.0
" 51	120.0	130.00	10.0
" 52	130.0	140.00	10.0
" 53	140.0	150.00	10.0
" 54	150.0	160.00	10.0
" 55	160.0	170.00	10.0
" 56	170.0	180.00	10.0
" 57	180.0	190.00	10.0
" 58	190.0	E.O.H. 202.10	12.10

649434

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560

ANALYTICAL REPORT No. 23.3.08.05252

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
3038	

DATE RECEIVED	RESULTS REQUIRED
14/03/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	28/03/88	1	20

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	27239/58	CG	Prep: 013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	427239/58	CG							Ti,Cr,Zr,Ba/401		
	427239/58	CG							Au/309		

RESULTS TO

R. de Bomford
Aberfoyle Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MC-4
CORE GRINDS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649435

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05252	28/03/88	3038	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Ni
1	427239 0-10	50	<5	55	0.5	0.037	9600	200	5	5
2	427240 10-20	230	<5	175	1.5	0.039	7350	150	8	15
3	427241 20-30	335	45	140	2.5	0.123	6450	210	<5	10
4	427242 30-40	90	60	60	2.5	0.685	5000	170	10	5
5	427243 40-50	40	30	55	<0.5	0.073	2650	34	<5	5
6	427244 50-60	80	175	125	1.5	0.060	2600	46	5	<5
7	427245 60-70	30	<5	205	1.5	<0.008	1500	20	<5	<5
8	427246 70-80	35	<5	145	<0.5	<0.008	1250	15	~~[illegible]~~ 6	5
9	427247 80-90	35	<5	125	1.0	0.019	1900	25	<5	<5
10	427248 90-100	40	<5	110	<0.5	<0.008	1550	16	<5	<5
11	427249 100-110	40	<5	105	1.0	0.119	2200	41	<5	5
12	427250 110-120	30	<5	90	1.0	0.014	1350	21	10	5
13	427251 120-130	30	250	475	1.5	0.010	800	19	<5	<5
14	427252 130-140	35	<5	105	1.0	<0.008	1000	15	10	5
15	427253 140-150	35	10	170	<0.5	<0.008	1350	18	<5	5
16	427254 150-160	60	<5	110	1.0	0.009	1100	7	10	15
(	427255 160-170	40	<5	320	1.0	<0.008	1050	13	<5	10
18	427256 170-180	90	<5	155	0.5	0.451	1750	33	15	15
19	427257 180-190	65	1100	2850	1.5	0.038	1700	12	<5	15
20	427258 190-202.1	50	<5	275	<0.5	<0.008	2250	15	6	5
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	101

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
< = element concentration is below detection limit
— = element not determined

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649436

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05252	28/03/88	3038	2 OF 2

TUBE No.	SAMPLE No.	Zr	Ti	Zr/Ti						
1	427239	220	2050	0.107						
2	427240	200	1650	0.121						
3	427241	170	1400	0.121						
4	427242	180	1550	0.116						
5	427243	190	1700	0.112						
6	427244	180	1600	0.113						
7	427245	190	1750	0.109						
8	427246	180	1650	0.109						
9	427247	170	1550	0.11						
10	427248	170	1500	0.113						
11	427249	160	1450	0.11						
12	427250	160	1500	0.107						
13	427251	170	1550	0.11						
14	427252	170	1500	0.113						
15	427253	170	1500	0.113						
16	427254	160	1550	0.103						
	427255	160	1550	0.103						
18	427256	160	1500	0.107						
19	427257	170	1500	0.113						
20	427258	170	1550	0.11						
21										
22										
23	DETECTION	5	50							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

APPENDIX 25.

649438

PRELIMINARY METALLURGICAL TESTING OF MOUNT CHARTER PROSPECT - SEPTEMBER 1988

DISTRIBUTION:

G. D. RICHMOND
J. R. GLEN
D. B. WALLACE

PREPARED BY: J. R. GLEN

ISSUED BY: G. D. RICHMOND

DATE: OCTOBER 1988

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APPENDIX 2 Flot Tests

APPENDIX 3 Fander's Mineralogy Report

APPENDIX 4 Cyanide Method

APPENDIX 5 Heavy Liquid Data

APPENDIX 6 Heavy Liquid Yield Analysis

1. SUMMARY

Exploration at Mt. Charter, some 3 km south of Que River, has located a possible low grade, high tonneage gold and base metal resource. A fifty metre section was prepared for indicative gold and base metal recovery by flotation and cyanidation methods. Further work included grind, heavy liquid and mineralogy.

Flotation and cyanidation techniques are reasonably successful in base metal and gold recovery. Some 80% and 50% gold recoveries were achieved using simple flotation and cyanide methods. The gold is strongly associated with sulphides as locked, cyanide available, and occluded, non-available, particles. Sulphide liberation from gangue commences at 100 microns and is substantially complete at some 30 microns. A strong association between gold and arsenic is evident in flotation tests. A bias toward higher gold deportments to sinks fractions would indicate a less than intimate gold/sulphide association and the presence of minor free gold. Fine grinding followed by cyanidation will indicate if further occluded gold can be recovered.

2. INTRODUCTION

Exploratory drilling at Mount Charter, some 3 km south of the Que River deposit has identified a possible low grade, high tonneage gold resource. The resource contains minor base metals in disseminated sulphides, hosted in sericite silica altered volcanics. Preliminary determination of gold metallurgy and gold associations with other minerals was required.

A fifty metre section (MC1 81-131m) of exploratory core was composited and processed for indicative gold and base metal recovery. The section tested contained 0.8 g/t Au, 9.0 g/t Ag, 225 ppm Cu, 1800 ppm Pb, 3500 ppm Zn, 330 ppm As, 3.25% Fe and 5.7% Ba. Flotation of sulphides and batch cyanidation methods, together with grind, heavy liquid and mineralogical data has been undertaken.

3. METHODS

Chart 1 indicates the preparation and testwork flowsheet.

3.1 Standard Grinds

Three 2 kg lots of crushed composite were ground under the laboratory standard conditions of 66.7% solids.

Feed and product sizings for the grinds at 10, 20 and 30 minutes are in Appendix 1.

3.2 Flotation

The standard procedure for preparation and flotation of Hellyer sulphides was adapted to :

Preparation : 2.0 kg feed stock ground 30 minutes with standard rod charge.

Flotation : A 5 litre cell impelled at 700 r.p.m.

Reagents : Staged additions of $CuSO_4$, PIAX and MIBC as detailed in Appendix 1. Lime was used for pH adjustment.

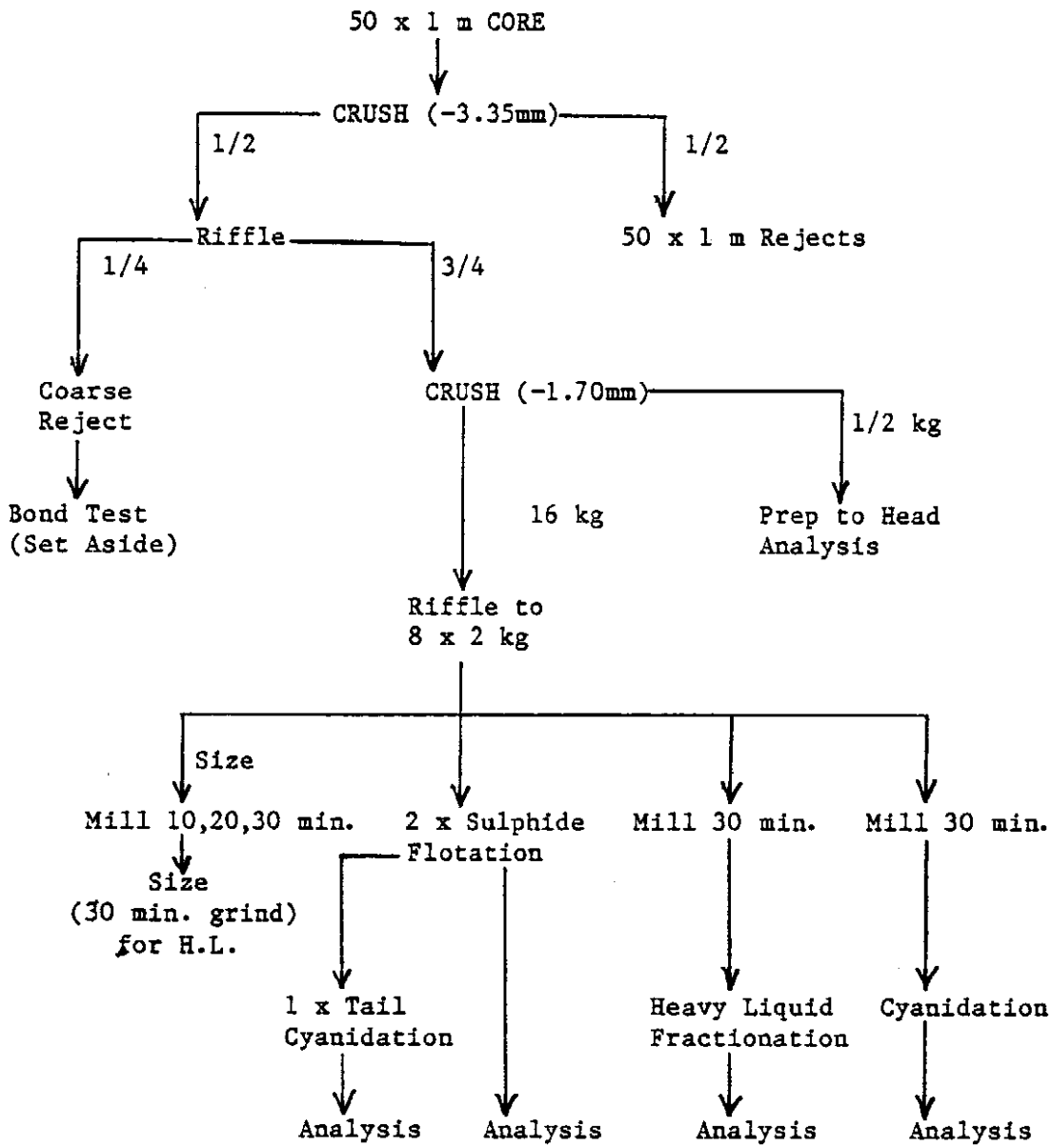
3.3 Heavy Liquid Separation

Sized fractions were separated in T.B.E. (s.g. = 2.96) and prepared by routine procedures. Fractions were despatched for XRF (Ba), wet chem. (As), AAS (base metals) and Fire/AAS (Au). Individual sinks splits were also despatched to C.M.S. for mineralogy, Mr. Fander's report is attached as Appendix 3.

3.4 Cyanidation

Cyanidation tests were undertaken in agitated vessels, over 24 hours, as detailed in Appendix 4. Normal pH and available cyanide checks were included in the program.

CHART 1


50 x 1 m CORE
CRUSH (-3.35mm)
1/2
1/2
Riffle
50 x 1 m Rejects
1/4
3/4
Coarse Reject
CRUSH (-1.70mm)
1/2 kg
Bond Test (Set Aside)
16 kg
Prep to Head Analysis
Riffle to 8 x 2 kg
Size
Mill 10,20,30 min.
2 x Sulphide Flotation
Mill 30 min.
Mill 30 min.
Size (30 min. grind) for H.L.
1 x Tail Cyanidation
Heavy Liquid Fractionation
Cyanidation
Analysis
Analysis
Analysis
Analysis

4. RESULTS

4.1 Head Analysis

TABLE 1 : Head Analysis : Assays and Calculated Values

Source	Cu ppm	Pb ppm	Zn ppm	Fe %	As ppm	Ba %	Ag ppm	Au ppm
Core Average	210	500	3700	2.88	330		6.3	0.815
Crushed Head	225	1800	3500	3.25	330	5.70	9.0	0.796
Flot. Head	260	1850	3700	3.14	350		7.0	0.781
H.L. Head	205	1650	3700	3.09		5.38	7.0	0.921
Cyanidation								0.810

4.2 Standard Grinds

Table 2 details these results :

TABLE 2 : Standard Grinds Data

Grind time (min.)	0	10	20	30
Product P_{80} (microns)	830	350	165	95
Product -38 (% Wt)	22	27	36	46

4.3 Flotation

TABLE 3 : Test 1 Assays and Distributions

Products	Wt %	Cu ppm	Pb ppm	Zn ppm	Fe %	Ag ppm	Au ppm	As ppm
				Assays				
Conc. 1	4.37	3,125	25,500	45,000	30.80	84	(10.51)	4,700
Conc. 2	1.81	1,250	9,000	42,500	21.55	48	5.940	2,900
Conc. 3	1.47	675	4,150	15,000	10.65	22	2.760	740
Tail	92.35	100	550	800	1.35	(2.3)	0.189	100
Calc Head	100.00	260	1,850	3,700	3.14	(7.0)	0.782	360
Comb. Conc.	7.65	2,210	17,500	38,600	24.74	64	7.94	3,510

Product	Wt	Cu	Pb	Zn	Fe	Ag	Au	As
				Distributions				
Conc. 1	4.37	52.3	60.6	53.3	42.9	52.4	58.8	56.9
Conc. 2	1.81	8.6	8.8	20.7	12.4	12.3	13.7	14.5
Conc. 3	1.47	3.8	3.3	6.0	5.0	4.6	5.2	3.0
Tail	92.35	35.3	27.6	20.0	39.7	30.6	22.3	25.6
Calc Head	100.00				100.0			
Comb. Conc.	7.65	64.7	72.4	80.0	60.3	69.4	77.7	74.4

TABLE 4 : Test 2 Assays and Distributions

Products	Wt %	Cu ppm	Pb ppm	Zn ppm	Fe %	Ag ppm	Au ppm	As ppm
				Assays				
Conc. 1	5.48	2,600	19,600	32,200	30.04	65	9.87	4,300
Conc. 2	2.04	875	6,300	37,300	12.48	21	4.10	1,700
Conc. 3	1.70	725	3,700	21,300	7.57	14	1.80	1,000
Tail	90.78	(95)	325	675	1.45	(2.0)	0.139	60
Calc Head	100.00	260	1,550	3,500	3.35	6.0	0.781	340
Comb. Conc.	9.22	1,870	13,700	31,300	22.01	46	7.11	3,100

Products	Wt	Cu	Pb	Zn	Fe	Ag	Au	As
				Distributions				
Conc. 1	5.48	55.0	68.8	50.4	49.2	58.9	69.2	68.9
Conc. 2	2.04	6.9	8.2	21.7	7.6	7.1	10.7	10.2
Conc. 3	1.70	4.8	4.0	10.3	3.9	3.9	3.9	5.0
Tail	90.78	33.3	18.9	17.5	39.3	30.1	16.2	15.9
Calc Head	100.00				100.0			
Comb. Conc.	9.22	66.7	81.1	82.5	60.7	69.9	83.8	84.1

4.4 Cyanidation

TABLE 5 : Cyanidation Stocks

Test	Stock
1	Ground Feed
2	Ground Feed
3	Ground Feed
4	Flotation Test 1 Tailing

TABLE 6 : Cyanidation Assays and Recovery

Test	Liquor Au ppm*	Final Vol. (ml)	Residue Au ppm	Calc Head Au ppm	Assay Head Au ppm	Recovery Au (%)
1	0.231	985	0.450	0.904	0.781	50.2
2	0.210	975	0.413	0.823	0.840	49.8
3	0.205	980	0.455	0.857	0.840	46.9
4	0.060	990	0.095	0.214	0.189	55.6

4.5 Heavy Liquid Fractionation

Full analysis data is detailed in Appendix 5. Fractionation was undertaken on material ground for 30 minutes. Table 7 summarises the results :

TABLE 7 : Heavy Liquid Data

	Distribution (%)								
Product	Wt	Cu	Pb	Zn	Fe	Ba	Ag	Au	As
Total Sinks	7.14	37.1	16.4	35.6	35.9	34.2	31.3	44.1	34.6
Total Floats	50.72	6.2	16.1	13.9	17.8	8.7	14.5	13.7	13.4
Fines (-38)	44.14	56.7	67.5	50.5	46.3	57.1	54.2	42.2	52.0
Total					100.0				

5. DISCUSSION

1. Head analyses substantially agree with core averages apart from lead, where a large difference is apparent.

2. Flotation results indicate good amenability to sulphide separation into a gold rich dominantly pyritic concentrate. Base metal values were upgraded as follows :

Value	Concentrate Grade % (ppm)	Concentrate Recovery (%)	Upgrade Ratio
Pb	1.56	71.7	9.2
Zn	3.50	81.2	9.7
Ag	(55)	69.7	8.3
Cu	(2040)	65.7	7.8
As	(3300)	79.3	9.4
Au	(7.53)	80.8	9.6
Fe	23.38	60.5	7.2

The flotation technique was quite simple, and, at the grind of 30 minutes (P_{80} = 95 microns), indicates good liberation of sulphides from gangue at comparatively coarse size.

Some incremental improvements in recovery of base metals may be gained with flotation optimisation.

Graphical analysis (Appendix 2) of recoveries indicate a very strong association between gold and arsenic. The "parallel" curves for copper and silver would indicate their association as tetrahedrite, confirmed in Mr. Fander's report (Appendix 3).

3. Cyanidation results indicate reasonable amenability to gold uptake with an average gold recovery of 49% to liquor from ground feed stock. Separation by flotation into pyritic concentrate and tailing (with 22.3% and 25.6% of gold and arsenic to tail) and subsequent leaching of tail yielding some 56% to liquor. This would indicate an almost identical result if the arsenic : gold ratio is taken into account.

Any further cyanidation work should be initiated with optimisation of grind size and liquor pH.

4. Heavy liquid analyses by size indicate substantial liberation of sulphides at the selected grind (P_{80} = 95 microns).

Graphical yield analysis (Appendix 6) indicates >80% liberation from gangue for each value at the following sizes :

Value	Size (microns)
Cu	100
Au	85
As	60
Zn	40
Pb	25

The arsenic/gold relationship is not as strong indicating that gold association is not "solid solution" and that further gold liberation to cyanide at finer sizes is possible.

5. Gold occurrence can be summarised as :

Free or locked with sulphides : 50%
Occluded in sulphides : 50%

Flotation deportments would indicate a stronger association between gold and arsenic than other sulphides.

Finer grinding followed by cyanidation should indicate the further availability of occluded gold.

6. CONCLUSIONS

1. The material tested demonstrated good liberation of sulphides at relatively coarse grind with substantial sulphide liberation commencing at 100 microns.

2. Base metal, arsenopyrite and gold recovery were in the 75-80% range under simple grind/flotation conditions. Flotation optimisation should enhance these values.

3. A strong association between gold and arsenic is apparent, especially in flotation.

4. Cyanidation tests indicate gold to be partially refractory with a 50% recovery to liquor. Heavy liquid analysis indicates that finer grinding should liberate occluded gold to some extent.

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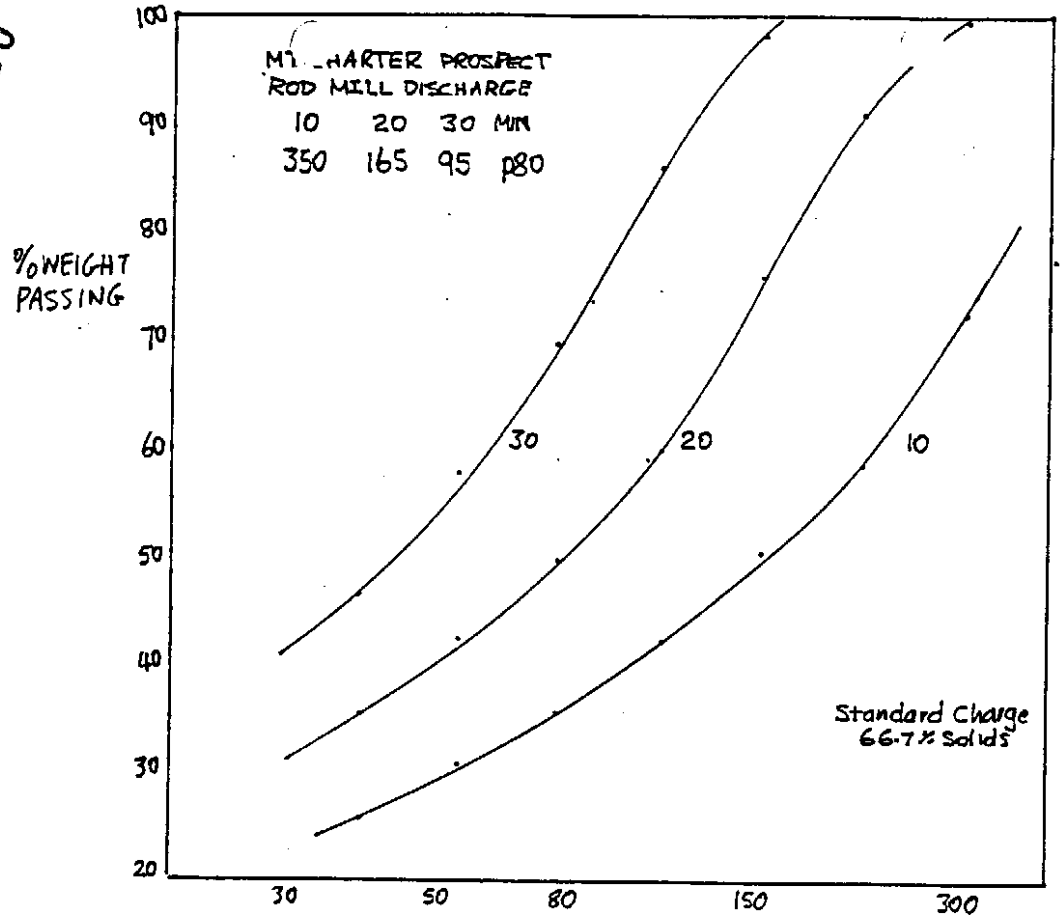
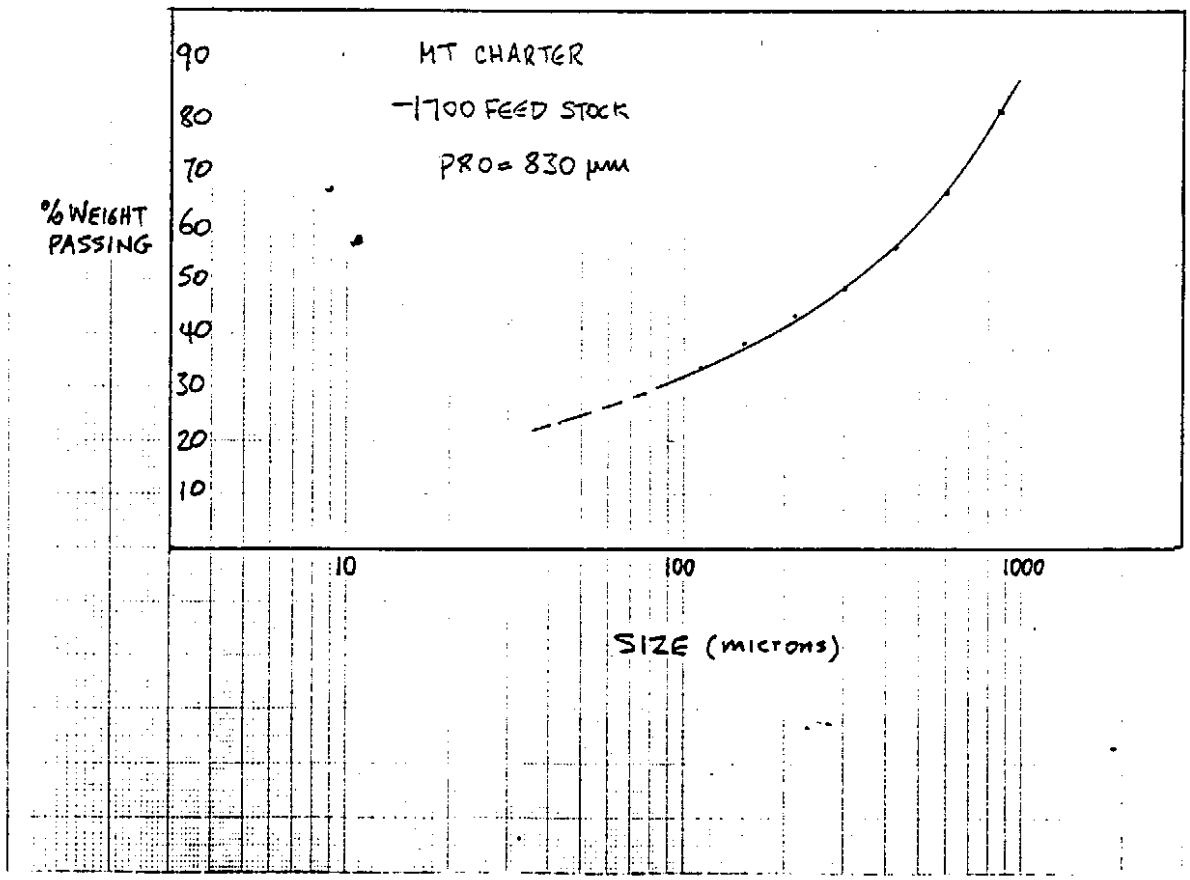
APPENDIX 1

GRINDING GRAPHS

649451


MT CHARTER PROSPECT
ROD MILL DISCHARGE
10 20 30 MM
350 165 95 p80
% WEIGHT PASSING
100
90
80
70
60
50
40
30
20
30
20
10
Standard Charge
66.7% Solids
30
50
80
150
300


MT CHARTER
-1700 FEED STOCK
P80 = 830 µm
% WEIGHT PASSING
90
80
70
60
50
40
30
20
10
10
100
1000
SIZE (microns)

649452

APPENDIX 2

FLOT TESTS

APPENDIX 2 : Flotation Test Conditions

Stage	Time (min.)	pH	Lime (gram)	$CuSO_4$ ml (5.0%)	PIAX ml (0.5%)	MIBC ml (0.5%)
Test 1						
Grind	30	7.4				
Condition	5	7.5	1.5	2.0	5.0	4.0
Conc. 1	5					
Condition	2	7.5		2.0	5.0	2.0
Conc. 2	2	7.6	0.8			
Condition	2	7.5		2.0	5.0	3.0
Conc. 3	9			2.0	5.0	
Consumption (kg/t)			1.15	0.20	0.05	0.02
Test 2						
Grind	30	7.5				
Condition	10	9.0	4.2	2.5	8.0	4.0
Conc. 1	5					
Condition	2	9.0		2.5	8.0	2.0
Conc. 2	5					
Condition	2	9.5		2.0	8.0	1.0
Conc. 3	20			2.0	8.0	1.0
Consumption (kg/t)			2.1	0.225	0.08	0.02

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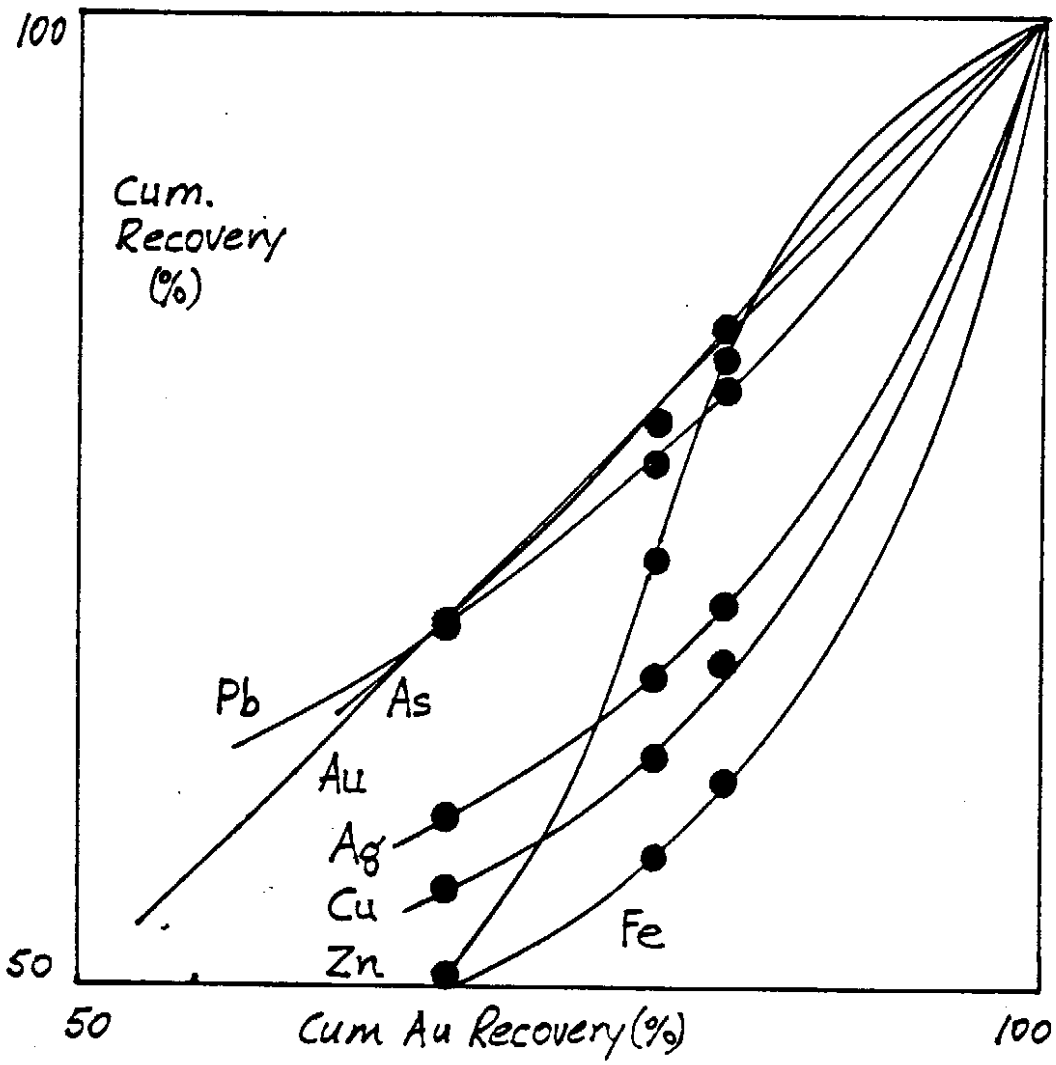
Appendix 2

Flotation Test 2: Cumulative Recoveries



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649455

APPENDIX 3

FANDER'S MINERALOGY REPORT

649456

APPENDIX 3

455

Central Mineralogical Services

39 Beulah Road, Norwood, South Australia 5067
Telephone (08) 42 5659 Fax (08) 363 1820
International: Telephone + 618 42 5659 Fax + 618 363 1820

Mr. G.D. Richmond
Chief Metallurgist
Aberfoyle Resources Ltd.
Technical Services Division
P.O. Box 952
BURNIE / TAS. 7320

23rd September, 1988

REPORT CMS 88/9/4

YOUR REFERENCE:	Order No. 3946
DATE RECEIVED:	1st September, 1988
SAMPLE NOS.:	837 - 840
SUBMITTED BY:	G.D. Richmond
WORK REQUESTED:	Mineralogy

H.W. Fander, M. Sc.

REPORT CMS 88/9/4

Samples 837 - 840

Four size fractions of a heavy mineral concentrate were received for mineralogical examination. Polished sections and grain-mounts were prepared in order to determine all opaque and non-opaque constituents; grain-counts were carried out for semi-quantitative determination of the mineral components.

+106 um (P.S. 60744)

This consists of about 32 % barite, as free grains, and 42 % sulphides, with 26 % silicate/sulphide composites which consist mainly of quartz and/or sericite containing small sulphide inclusions.

The dominant sulphide is pyrite, with very minor very pale sphalerite, and a trace of galena as free grains and very small (< 20 um) inclusions in sphalerite.

+75 um (P.S. 60745)

This consists of about 39 % barite, as free grains, with 58 % sulphides and 30 % light silicates (quartz, sericite) whose presence is due to entrainment. All components are essentially free.

The sulphides are dominantly pyrite, with very minor sphalerite, traces of galena and tetrahedrite; all are essentially free.

+53 um (P.S. 60746)

This consists of about 45 % barite, as free grains, with 52 % sulphides, and 3 % quartz and sericite.

The dominant sulphide is pyrite; there appears to be a slight increase in galena, as might be expected in finer sizes. There is a very minor amount of sphalerite, and a trace of tetrahedrite.

+38 um (P.S. 60747)

This consists of about 43 % barite, as free grains, with 52 % sulphides, and 5 % quartz and sericite (aggregates). All grains are free. Pyrite is the dominant sulphide, with very minor sphalerite and galena.

H.W. Fander, M. Sc.

N.B.: The grain-counts were not corrected for S.G. and, strictly, are volume percentages; however, the S.G.s of the two main constituents (barite, pyrite) differ by only a very small amount, within the inherent errors of the method used, and thus the figures are close to weight percentages.

APPENDIX 4

CYANIDE METHOD

APPENDIX 4 : Cyanidation Method

Cyanidations were undertaken by the following method :

Change : 500 gram (ground stock)
Lixivant : 1000 ml, 0.10% NaCN
pH : 11-11.5, adjusted with lime
Vessel : 1.8 litre agitated pachuca
Agitation : Single blade, 180 rpm, 24 hours
CN Availability : $AgNO_3$ titration

Test Data

Test	Start pH	Lime (gram)	Liquor pH	Final pH	Available CN (%) Start	Finish
1	9.75	1.0	11.35	11.21	0.10	-
2	9.40	1.2	11.30	10.60	0.10	0.068
3	9.30	1.2	11.20	10.50	0.10	0.072
4	9.61	1.2	11.40	11.40	0.10	-

649460

APPENDIX 5

HEAVY LIQUID DATA

ABERFOYLE RESOURCES LIMITED – TECHNICAL SERVICES DIVISION

TEST/SURVEY No. MT CHARTER HEAVY LIQUID SEP
DESCRIPTION SG =2.96
DATE 30.8.88

METAL DISTRIBUTION

PRODUCT NAME	WEIGHT (grams)	%	Cu ppm	Dist	Pb ppm	Dist	Zn ppm	Dist	Fe %	Dist	Ag ppm	Dist	Au ppm	Dist
+106 SINK	1.12	1.12	775	4.25	3600	2.44	20500	6.26	16.65	6.01	31.00	4.96	5.22	6.30
FLOAT	16.05	16.05	25	1.96	525	5.09	950	4.16	1.15	5.98	2.00	4.59	0.35	6.09
+75 SINK	1.76	1.76	1025	8.83	2650	2.82	20500	9.83	16.65	9.47	33.00	8.30	6.73	12.83
FLOAT	14.59	14.59	25	1.79	575	5.07	1050	4.17	1.05	4.95	2.00	4.17	0.21	3.37
+53 SINK	2.33	2.33	1150	13.12	3750	5.28	17000	10.79	15.15	11.41	31.00	10.32	5.67	14.35
FLOAT	12.07	12.07	25	1.48	500	3.65	1000	3.29	1.05	4.11	2.00	3.44	0.19	2.50
+38 SINK	1.93	1.93	1150	10.87	5050	5.89	16500	8.68	14.45	9.02	28.00	7.72	5.08	10.65
FLOAT	8.01	8.01	25	0.98	475	2.30	1050	2.29	1.05	2.72	2.00	2.29	0.19	1.63
-38 HEAD	42.14	42.14	275	56.73	2650	67.47	4400	50.53	3.40	46.33	9.00	54.21	0.92	42.28
TOTAL (CALCULATED)	100.00	100.00	204.28	100.00	1655.06	100.00	3669.59	100.00	3.09	100.00	7.00	100.00	0.92	100.00
MEASURED HEAD			225.00		1800.00		3500.00		3.25		9.00		0.80	

APPENDIX 5

649461

ABERFOYLE RESOURCES LIMITED - TECHNICAL SERVICES DIVISION

TEST/SURVEY No. MT CHARTER HEAVY LIQUID SEP
DESCRIPTION SG =2.96
DATE 30.8.88

METAL DISTRIBUTION

PRODUCT NAME	WEIGHT (grams)	%	Ba %	Dist	As ppm	Dist	Dist	Dist
+106 SINK	1.12	1.12	20.30	4.22	1500	4.93		
FLOAT	16.05	16.05	0.80	2.38	100	4.71		
+75 SINK	1.76	1.76	25.00	8.17	1600	8.27		
FLOAT	14.59	14.59	0.90	2.43	95	4.07		
+53 SINK	2.33	2.33	27.90	12.07	1400	9.58		
FLOAT	12.07	12.07	1.00	2.25	80	2.83		
+38 SINK	1.93	1.93	27.10	9.71	2100	11.90		
FLOAT	8.01	8.01	1.10	1.63	75	1.76		
-38 HEAD	42.14	42.14	7.30	57.13	420	51.95		
TOTAL (CALCULATED)	100.00	100.00	5.38	100.00	341	100.00		
MEASURED HEAD			7.20		330			

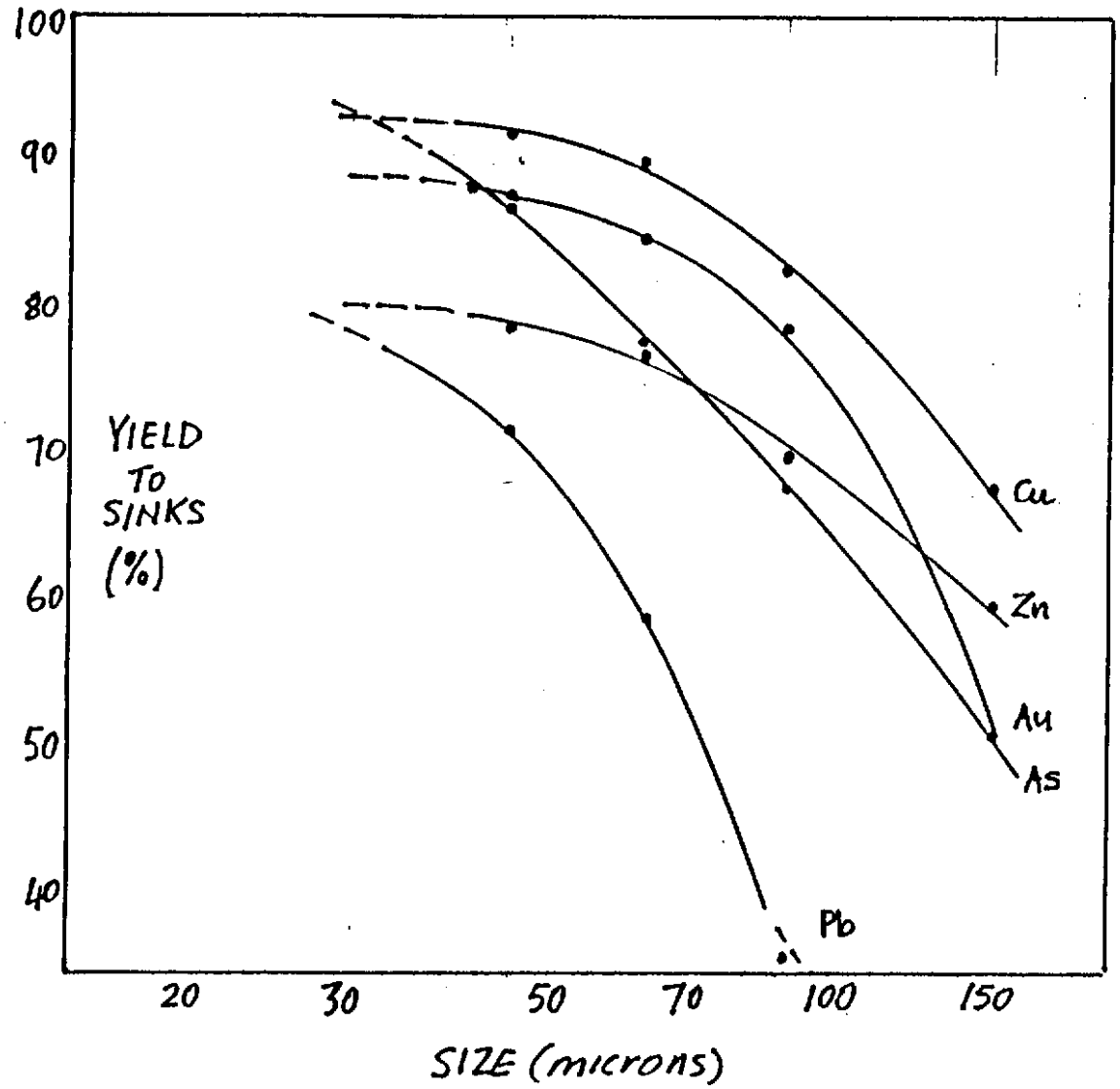
462

649463

APPENDIX 6

HEAVY LIQUID YIELD ANALYSIS

HEAVY LIQUID YIELD ANALYSIS



649464

649465

APPENDIX 26.

649466

(16)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.06001

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5616	

DATE RECEIVED	RESULTS REQUIRED
08/02/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	09/03/89	1	41

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	515155/195	CO	Prep: 016						Cu,Pb,Zn,Ag/101,As/114		
	515155/195	CO							Ba/401,Au,AuChk/309		
	515155/195	CO	Prep: 016						Pb,Ag/104		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

Mt. Charter
Costeans.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	calorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

649467

466

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06001	09/03/89	5616	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	Au	Ba	As
1	515155	20	50	–	110	11.5	–	0.241	8.30	70
2	515156	40	230	–	105	3.0	–	0.103	0.90	88
3	515157	60	855	–	145	7.5	–	0.635	10.00	390
4	515158	20	60	–	960	176.0	–	2.110	49.80	920
5	515159	355	80	–	3450	41.0	–	3.310	45.20	990
6	515160	160	50	–	840	65.5	–	1.950	36.60	670
7	515161	125	280	–	540	84.5	–	1.580	41.10	1550
8	515162	45	305	–	600	7.0	–	0.440	4.10	470
9	515163	30	230	–	450	4.5	–	0.307	2.50	120
10	515164	60	410	–	830	5.5	–	0.606	3.20	510
11	515165	30	280	–	710	9.0	–	0.457	17.70	360
12	515166	70	265	–	2750	–	133	1.010	36.70	820
13	515167	80	290	–	140	66.0	–	1.225	26.90	3900
14	515168	235	–	0.85	185	–	23	0.741	22.20	5850
15	515169	185	–	0.96	1300	–	45	1.470	30.20	5100
16	515170	45	30	–	670	18.5	–	0.509	54.00	390
17	515171	160	510	–	215	68.5	–	1.600	32.40	2050
18	515172	150	620	–	295	66.0	–	1.730	17.70	2500
19	515173	40	215	–	780	48.0	–	0.545	27.50	840
20	515174	110	1200	–	175	35.5	–	1.120	34.80	3750
21	515175	150	330	–	195	58.5	–	3.370	43.00	2250
22	515176	145	465	–	1400	39.0	–	1.100	46.70	500
23	515177	430	505	–	3800	77.5	–	3.800	43.90	930
24	515178	170	190	–	690	–	150	2.010	36.30	2450
25	515179	240	225	–	240	–	135	2.280	19.10	2250

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649468

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.06001	09/03/89	5616	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ag	Au	Ba	As
1	515180	130	560	-	1400	17.5	-	1.340	10.00	420
2	515181	205	185	-	490	46.0	-	0.911	34.30	540
3	515182	90	725	-	295	74.0	-	2.910	45.00	600
4	515183	170	620	-	115	52.0	-	1.440	44.30	1800
5	515184	215	-	0.12	75	-	49	2.000	28.20	2050
6	515185	90	815	-	165	1.5	-	0.080	0.40	180
7	515186	65	475	-	135	<0.5	-	0.042	1.40	130
8	515187	55	500	-	120	<0.5	-	0.071	0.40	170
9	515188	50	295	-	75	3.0	-	0.441	22.00	220
10	515189	55	330	-	95	0.5	-	0.039	0.80	240
11	515190	60	270	-	95	<0.5	-	0.055	0.60	200
12	515191	85	640	-	150	11.0	-	0.557	10.00	940
13	515192	85	455	-	145	24.5	-	2.000	13.40	460
14	515193	65	350	-	125	1.0	-	0.030	0.40	190
15	515194	150	470	-	95	5.5	-	0.082	13.00	930
16	515195	50	170	-	50	23.4	-	1.370	38.60	210
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	0.05	5	0.5	2	0.008	0.01	1
24	UNITS	PPM	PPM	%	PPM	PPM	PPM	PPM	%	PPM
25	METHOD	101	101	104	101	101	104	309	403	114

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
< = element concentration is below detection limit
-- = element not determined

AUTHORISED OFFICER

649469

(18)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.05992

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

ORDER No.	PROJECT
5613	

DATE RECEIVED	RESULTS REQUIRED
03/02/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	08/02/89	1	20

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	265811/830	PU							Au/309		

RESULTS TO

Aberfolye Resources Exp. Division
P.O. Box 952
Burnie
Tasmania 7320

RESULTS TO

REMARKS

MACK E.L.
MT. CHARTER
COSTEANS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorbtion	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
tissue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

469

649470

ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05992	08/02/89	5613	1 OF 1

TUBE No.	SAMPLE No.	Au								
1	265611	0.126								
2	265612	0.119								
3	265613	0.544								
4	265614	0.688								
5	265615	0.681								
6	265616	1.080								
7	265617	1.010								
8	265618	0.795								
9	265619	0.657								
10	265620	0.307								
11	265621	0.193								
12	265622	0.197								
13	265623	0.048								
14	265624	0.116								
15	265625	0.181								
16	265626	0.097								
17	265627	0.069								
18	265628	0.146								
19	265629	0.274								
20	265630	0.201								
21										
22										
23	DETECTION	0.008								
24	LIMITS	PPM								
25	METHOD	30F								

Results in ppm unless otherwise specified
T = element present: but concentration too low to measure
X = element concentration is below detection limit
— = element not determined

AUTHORISED OFFICER

649471

89-2948 V3

MINES
File Ref. EL 106/87
26 APR 1989
Doc. Ref.
Action Officer | Initials
LETTER
21. 4 '89
REFERS
Resubmit to | Date

OPEN FILE

LAKE MACKINTOSH, EXPLORATION LICENCE 106/87

TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

FEBRUARY 1988 TO FEBRUARY 1989

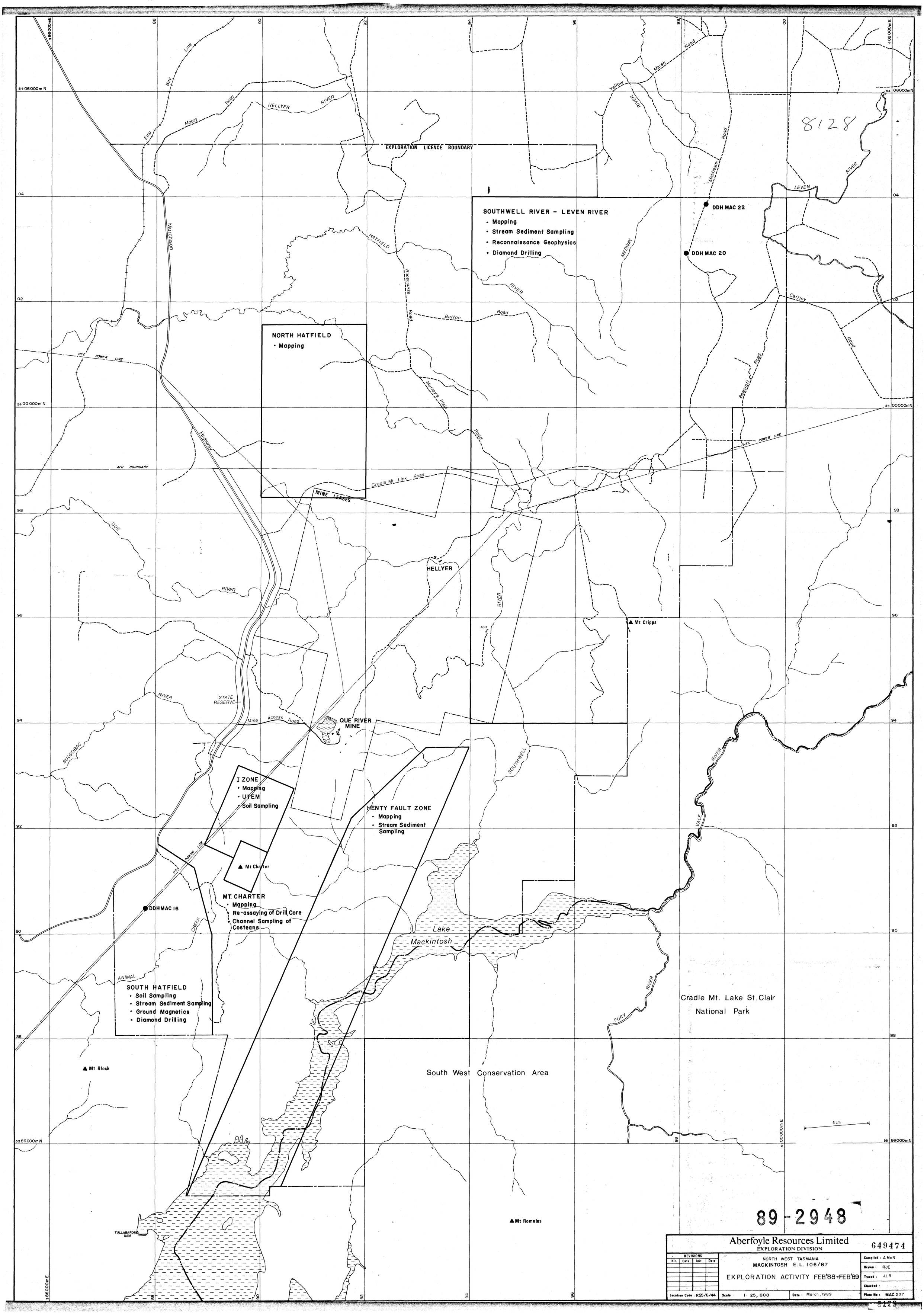
MICROFILMED

PLATES MAC237 - MAC89/A1

89-2948 V3/4

PLATES

Plate	Scale	Title
MAC237	1:25,000	Exploration activity, February 1988-February 1989.
MAC114	N/S	Surface geological mapping legend.
MAC115	N/S	Geological legend, 1:1000 scale DDH sections.
MAC161 A	1:10,000	Interpretive geology
MAC161 B	1:10,000	Interpretive geology
MAC161 C	1:10,000	Interpretive geology
MAC89 BB	1:2,500	Outcrop geology
MAC89 CC	1:2,500	Outcrop geology
MAC89 EE	1:2,500	Outcrop geology
MAC89 FF	1:2,500	Outcrop geology
MAC89 KK	1:2,500	Outcrop geology
MAC89 MM	1:2,500	Outcrop geology
MAC89 SS	1:2,500	Outcrop geology
MAC89 ZZ	1:2,500	Outcrop geology
MAC89 3	1:2,500	Outcrop geology
MAC89 4	1:2,500	Outcrop geology
MAC89 5	1:2,500	Outcrop geology
MAC89 6	1:2,500	Outcrop geology
MAC89 7	1:2,500	Outcrop geology
MAC89 14	1:2,500	Outcrop geology
MAC89 15	1:2,500	Outcrop geology
MAC89 A1	1:2,500	Outcrop geology
MAC89 A2	1:2,500	Outcrop geology
MAC193 A	1:10,000	Outcrop geology
MAC193 B	1:10,000	Outcrop geology
MAC193 F	1:10,000	Outcrop geology
MAC203 A	1:10,000	Stream Sediment Sample Locations
MAC203 B	1:10,000	Stream Sediment Sample Locations
MAC203 C	1:10,000	Stream Sediment Sample Locations
MAC203 D	1:10,000	Stream Sediment Sample Locations
MAC203 F	1:10,000	Stream Sediment Sample Locations
MAC204 A	1:10,000	Stream Sediment Samples - Assay Results
MAC204 B	1:10,000	Stream Sediment Samples - Assay Results
MAC204 C	1:10,000	Stream Sediment Samples - Assay Results
MAC204 D	1:10,000	Stream Sediment Samples - Assay Results
MAC204 F	1:10,000	Stream Sediment Samples - Assay Results
MAC209	1:10,000	Medway River Area - Rock Chip geochemistry
MAC200	1:1,000	Section 3000N DDH MAC-16
MAC200 A	1:1,000	DDH MAC-16 - Core Grind Geochemistry
MAC223	1:1,000	Section 13450N DDH MAC-20
MAC223 A	1:1,000	DDH MAC-20 - Core Grind Geochemistry
MAC225	1:1,000	Section 19400N DDH MAC-22
MAC225 A	1:1,000	DDH MAC-22 - Core Grind Geochemistry
HT37d	1:250	Costean 4550N/4400E.
MAC232	As shown	VLF Survey - Southwell River area.
MAC233	As shown	VLF Survey - Medway River area.
MAC234	1:1,000	Mt. Charter - Massive barite - rock chips.
MAC235	1:10,000	South Hatfield - Ground magnetic profiles.


EXPLORATION LICENCE BOUNDARY
SOUTHWELL RIVER - LEVEN RIVER
• Mapping
• Stream Sediment Sampling
• Reconnaissance Geophysics
• Diamond Drilling
DDH MAC 22
DDH MAC 20
NORTH HATFIELD
• Mapping
MINE LEASES
HELLYER
QUE RIVER MINE
STATE RESERVE
I ZONE
• Mapping
• UTEM
• Soil Sampling
HENTY FAULT ZONE
• Mapping
• Stream Sediment Sampling
Mt Charter
MT. CHARTER
• Mapping
• Re-assaying of Drill Core
• Channel Sampling of Costeans
DDH MAC 16
SOUTH HATFIELD
• Soil Sampling
• Stream Sediment Sampling
• Ground Magnetics
• Diamond Drilling
Mt Cripps
Mt Block
Mt Romulus
Lake Mackintosh
TULLABARDINE DAM
Cradle Mt. Lake St.Clair National Park
South West Conservation Area
HEC POWER LINE
AFH BOUNDARY
Cradle Mt Link Road
Mine Access Road
Murchison Highway
Emu Bay Line
Moory Road
HELLYER RIVER
HATFIELD
Racecourse Road
Button Road
Murray's Plain Road
Yellow Marsh Road
Middlesex Road
LEVEN RIVER
Cattley Road
Beecroft Road
MEDWAY
SOUTHWELL
VALE RIVER
FURY RIVER
QUE RIVER
BULGOBAC
ANIMAL CREEK
ADIT
5 cm
89-2948
Aberfoyle Resources Limited
EXPLORATION DIVISION
649474
REVISIONS
Init. Date Init. Date
NORTH WEST TASMANIA
MACKINTOSH E.L. 106/87
EXPLORATION ACTIVITY FEB'88-FEB'89
Location Code : K55/6/44
Scale : 1: 25, 000
Date : March, 1989
Compiled : A McN
Drawn : RJE
Traced : JLR
Checked :
Plate No : MAC 237

FACT GEOLOGICAL MAPPING LEGEND MAC 79,110 PLAN SERIES

(NOTE: COMPLETE LIST OF ABBREVIATIONS IS STORED ON HP-1000 FILE ABBRV:HL:14)

LITHOLOGY COMPOSITION

R	Rhyolite
D	Dacite
A	Andesite
B	Basalt
Y	Polymict
Ss	Sandstone
Sh	Shale
Slt	Siltstone
Ba	Barite
Py	Pyrite
BMS	Base Metal Sulphide
Ch	Chert
TB	Tertiary Basalt
JDo	Jurrasic Dolerite
OCg	Ordovician Conglomerate

LITHOLOGY TEXTURE / FORM

l	lava
lb	lava breccia
pl	pillow lava
av	ash volcaniclastic
flv	fine lapilli volcaniclastic
mlv	medium " "
clv	coarse " "
bv	breccia "
xv	crystal "
ves	vesicular
por	porphyritic
eux	eutaxitic
fbn	flowbanded
gnlr	granular
ibd	interbedded
md	matrix dominant
gl	glassy
mas	massive
lm	laminated
fp	feldspar phyric
rnd	rounded
pep	peperitic

VOLCANICLASTIC SIZE RANGE

> 2mm	ash
2-8	fine lapilli
8-32	medium lapilli
32-64	coarse lapilli
> 64	breccia

ALTERATION COMPOSITION

Co	Carbonate
Cl	Chlorite
Kf	K-feldspar
Fu	Fuchsite
Py	Pyrite
Se	Sericite
Si	Silica

ALTERATION TEXTURE / FORM

per	pervasive
dis	disseminated
pat	patchy
spt	spotty
sfr	selected fragments
stw	stockwork
stc	structure controlled
vn	vein
mtx	matrix

ALTERATION INTENSITY WEATHERING INTENSITY

1	trace
2	weak
3	moderate
4	strong
5	extreme

COLOUR

br	brown
bk	black
gy	grey
gn	green
or	orange
pk	pink
wh	white
yw	yellow
bl	blue

FAULT TERMS

cav	cavernous
lch	leached
slk	slickenside
rhd	rehealed
rbb	rubble
shd	sheared

GENERAL TERMS

tr	trace
lgt	light
dk	dark
brt	bright
ox	oxidised
fg	fine grained
mg	medium grained
cg	coarse grained

ABBREVIATED DESCRIPTION FORMAT

LITHOLOGY:

LITHOLOGY — WEATHERING — ALTERATION

colour. composition. form. texture / intensity / composition. intensity. form. texture

example gy - gn. YA. flv / Ox 3 / Fu.3. dis

(interpretive comment can be added in brackets ( ))

FAULT:

WIDTH (cms) / MINERALOGY. TEXTURE

example F 20 / Cl. cav.

VEIN:

WIDTH (cms) / MINERALOGY. TEXTURE

example V 5 / Q. Py.cav

INTERPRETIVE GEOLOGICAL MAPPING LEGEND MAC89,111 PLAN SERIES

VOLCANICS

R.l, R.lb	26	Rhyolite lava, lava breccia
R.av, R.lv, R.bv, R.xv	25	Rhyolite volcaniclastic
YR.av, YR.lv, YR.bv	65	Rhyolitic Polymict volcaniclastic
D.l, D.l.b	63	Dacite lava, lava breccia
D.av, D.lv, D.bv, D.xv	54	Dacite volcaniclastic
YD.av, YD.lv, YD.bv	56	Dacitic Polymict volcaniclastic
A.fp.l, A.fp.lb	48	Andesite feldsparphyric lava, lava breccia
A.l, A.lb	41	Andesite lava, lava breccia
A.av, A.lv, A.bv, A.xv	44	Andesite volcaniclastic
YA.av, YA.lv, YA.bv	40	Andesitic Polymict volcaniclastic
B.l, B.lv	45	Basalt lava, lava breccia
B.pl	50	Basalt pillow lava
B.av, B.lv, B.bv, B.xv	49	Basalt volcaniclastic
YB.av, YB.lv, YB.bv	42	Basaltic Polymict volcaniclastic
Y.av, Y.lv, Y.bv	58	Polymict rock
av	52	Ash volcaniclastics (composition not determined)

SEDIMENTS

Ss, Gw	71	Sandstone, micaceous Greywacke
Sh	68	Shale, black (carbonaceous, pyritic)
Slt	69	Siltstone, tuffaceous Siltstone

SULPHIDES, SULPHATES

BMS	21	Base Metal Sulphide rock
MPy	29	Massive pyrite rock
GSP	23	Glassy silica, colloform pyrite rock
Ba	22	Barite

POST CAMBRIAN ROCKS

TB	8	Tertiary Basalt
JD	32	Jurassic Dolerite
OCg	20	Ordovician Siliciclastics

ALTERATION ROCK TYPES

HA	6	Highly altered rock
Qll	18	Quellite
Q-lv, Q-bv	17	Quellite fragmental

PARTIAL STRATIGRAPHIC COLUMN

TB	8	TERTIARY BASALT
JD	32	JURASSIC DOLERITE
OCG	20	ORDOVICIAN SILICICLASTICS
URS	65	UPPER RHYOLITIC SEQUENCE
QRS	68	QUE RIVER SHALE
MGW	71	MT. CHARTER MICACEOUS GREYWACKE
HBS	45	HELLYER BASALT SEQUENCE
HVS / SWB	56	HANGINGWALL VOLCANICLASTIC SEQUENCE / SWITCHBACK VOLCANICLASTIC SEQUENCE
HMS	21	HELLYER MINERALISED SEQUENCE
FPS	48	ANDESITE FELDSPAR PHYRIC SEQUENCE

ALTERATION SYMBOLS

Overprint on "HA" symbol (Combinations can be used)

Carbonate, Chlorite, Fuchsite, Sericite, Illite, Feldspar, Pyrite, Silica

SYMBOLS MAC79,110 AND MAC89,111 SERIES

(SYMBOLS AS SHOWN IN ABEX "STANDARDS FOR GEOLOGICAL DRAWINGS", JAN. 1983)

LINE TH'NESS / LEROY LETTER SIZE (LENGTH AS SHOWN)		
·35		Outcrop boundary
·35		Float
·35		Contact known
·35		Contact interpreted
·35	?—	Contact inferred
·35		Facies change
·35		Unconformity
·25		Anticline, syncline with plunge and trend
·25		Minor fold with plunge and trend
·25/50	20 350	Bedding, strike, dip
·25/50	20 350	Foliation, strike, dip
·25/50	20 350	Joint, strike, dip
·5/50,100	F q 200 70	Fault, definite, strike, dip, mineralogy
·5/100	F—?—	Fault, inferred
·35		Shear zone
·35/60	A.lv	DDH collar and trace, top 20m geology shown
·25		Grid line, stadia surveyed
·25		Grid line, tape and compass survey
·25		Grid line, nominal position
/60	P 355012	Petrology sample location
·35		Track, unsurveyed
·35		Road (unsealed) or track, surveyed
·7		Major road
·35		Costean
·25		Creek
·35		Mining Lease boundary
·5		Exploration Licence boundary
/60	•13	Peg with number, tape and compass surveyed
/60	⊗HT17	Peg with number, stadia surveyed
·25		Alteration boundary

649475

89-2948

Aberfoyle Exploration Pty Ltd

REVISIONS			
Init.	Date	Init.	Date
GLC	12·85		
GLC	1·86		

NORTH WEST TASMANIA

MACKINTOSH E.L.2/70, HATFIELD E.L.15/73

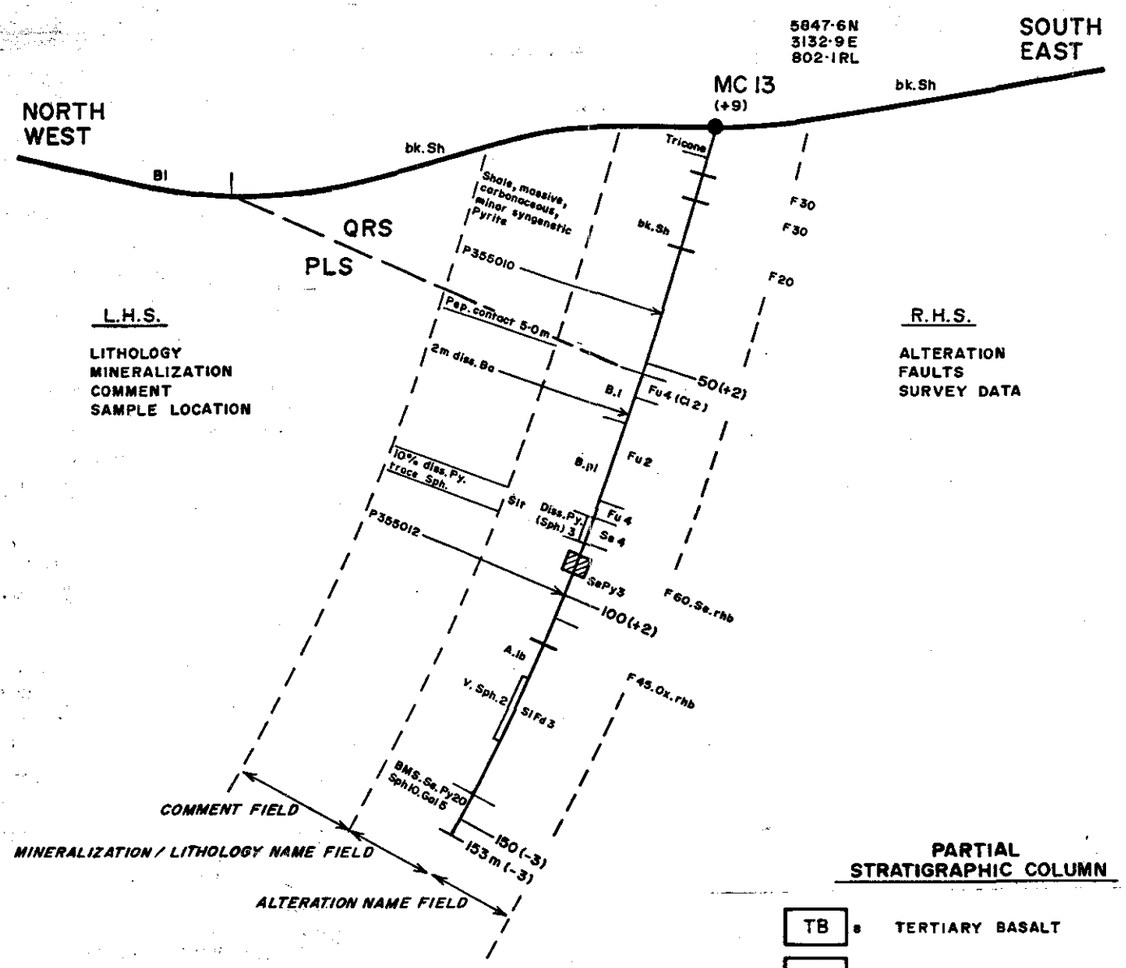
SURFACE GEOLOGICAL MAPPING LEGEND

Compiled:	AMH
Drawn:	AMH
Traced:	GLC
Checked:	AMH
Plate No:	MAC 114

Location Code: K55/6/44 — Scale: ——— — Date: November, 1985

8130

RMO 554



MC 13 (+9)	DDH number, DDH collar distance behind (+), in front (-) of section *(-35/100,60)*
5847·6 N 3132·9 E 802·1 RL	Survey pick-up of collar *(/60)*
50(+2)	Downhole fiducial, 50m interval for 1:1000 section *(-25/60)*
	Lithology, alteration boundary - DDH and surface *(-18/)*
	DDH to surface correlation *(-35/)*
B.pl	Lithology abbreviation classification, colour on adjoining table *(/50)*
QRS	Stratigraphic classification *(/100)*
Fu4 (Cl2)	Alteration composition, intensity. Subordinate alteration type in brackets *(/50)*
F60.Se.rhb	Fault zone, angle to core axis, gouge composition *(-35/50)*
F45.Ox.rhb	Fault, angle to core axis, gouge composition *(-35/50)*
Diss.Py. (Sph) 3	Low grade mineralization disseminated, composition, intensity. Minor sulphides in brackets *(-18/50)*
V.Sph. (Py) 2	Low grade mineralization vein, composition, intensity. Minor sulphides in brackets *(-18/50)*
P 355010	Petrology sample location, specify other sample type eg. Pb isotope *(/50)*
BMS.Se.Py20. Sph.10.Gal.5	High grade mineralization, composition, visual estimate *(/50)*

ALL LINEWORK AND LETTERING SHOWN AT ACTUAL SIZE
(LINE THICKNESS / LEROY LETTER SIZE)

NOTE : GEOPHYSICAL AND GEOCHEMICAL DATA ARE SHOWN ON OVERLAYS

PARTIAL STRATIGRAPHIC COLUMN

TB	8	TERTIARY BASALT
JD	32	JURASSIC DOLERITE
OCG	20	ORDOVICIAN SILICICLASTICS
URS	65	UPPER RHYOLITIC SEQUENCE
QRS	68	QUE RIVER SHALE
MGW	71	MT. CHARTER MICACEOUS GREYWACKE
HBS	45	HELLYER BASALT SEQUENCE
HVS / SWB	56	HANGINGWALL VOLCANICLASTIC SEQUENCE / SWITCHBACK VOLCANICLASTIC SEQUENCE
HMS	21	HELLYER MINERALISED SEQUENCE
FPS	48	ANDESITE FELDSPAR PHYRIC SEQUENCE

VOLCANICS

R.l R.lb	26	Rhyolite lava, lava breccia
R.av R.lv R.bv R.xv	25	Rhyolite volcaniclastic
YR.av YR.lv YR.bv	68	Rhyolitic Polymict volcaniclastic
D.l D.l.b	63	Dacite lava, lava breccia
D.av D.lv D.bv D.xv	54	Dacite volcaniclastic
YD.av YD.lv YD.bv	56	Dacitic Polymict volcaniclastic
A.fp.l A.fp.lb	48	Andesite feldsparphyric lava, lava breccia
A.l A.lb	41	Andesite lava, lava breccia
A.av A.lv A.bv A.xv	44	Andesite volcaniclastic
YA.av YA.lv YA.bv	40	Andesitic Polymict volcaniclastic
B.l B.lv	45	Basalt lava, lava breccia
B.pl	50	Basalt pillow lava
B.av B.lv B.bv B.xv	49	Basalt volcaniclastic
YB.av YB.lv YB.bv	42	Basaltic Polymict volcaniclastic
Y.av Y.lv Y.bv	58	Polymict rock
av	52	Ash volcaniclastics (composition not determined)

SEDIMENTS

Ss Gw	71	Sandstone, micaceous Greywacke
Sh	68	Shale, black (carbonaceous, pyritic)
Slt	69	Siltstone, tuffaceous Siltstone

SULPHIDES, SULPHATES

BMS	21	Base Metal Sulphide rock
MPy	29	Massive pyrite rock
GS P	23	Glassy silica, colloform pyrite rock
Ba	22	Barite

POST CAMBRIAN ROCKS

TB	8	Tertiary Basalt
JD	32	Jurassic Dolerite
OCg	20	Ordovician Siliciclastics

ALTERATION ROCK TYPES

HA	6	Highly altered rock
Qtl	18	Quartzite
Q-lv Q-bv	17	Quartzite fragmental

ALTERATION

Si	2	Silica	SeCl	30	Sericite Chlorite
SiFd	13	Silica Feldspar	SePy	39	Sericite Pyrite
SiFdCl	14	Silica Feldspar Chlorite	Se	38	Sericite
Cl	47	Chlorite	Fu	46	Fuchsite
ClCo	41	Chlorite Carbonate	Il	19	Illite

INTENSITY SCALE

1	Trace
2	Weak
3	Moderate
4	Strong
5	Extreme

649476

Aberfoyle Exploration Pty Ltd

REVISIONS			
Init	Date	Init.	Date
GLC	12·85		

NORTH WEST TASMANIA

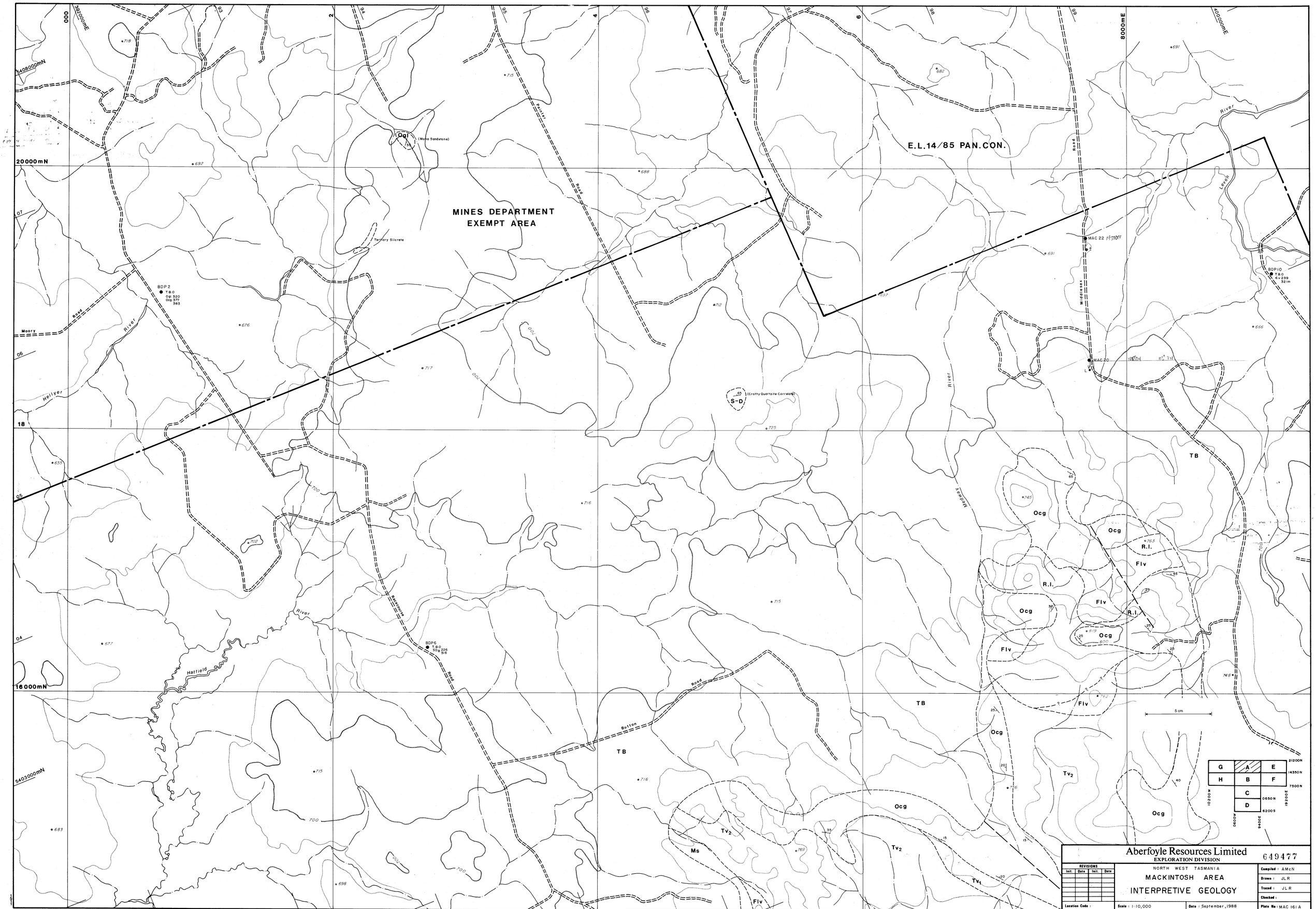
MACKINTOSH E.L.2/70, HATFIELD E.L.15/73

GEOLOGICAL LEGEND
1:1000 SCALE DDH SECTIONS

Location Code: K55/6/44 | Scale: ——— | Date: November, 1985

Compiled: AMH
Drawn: AMH
Traced: GLC
Checked: AMH
Plate No: MAC 115

8131 RMO 554



Aberfoyle Resources Limited
EXPLORATION DIVISION
649477

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA
MACKINTOSH AREA
INTERPRETIVE GEOLOGY

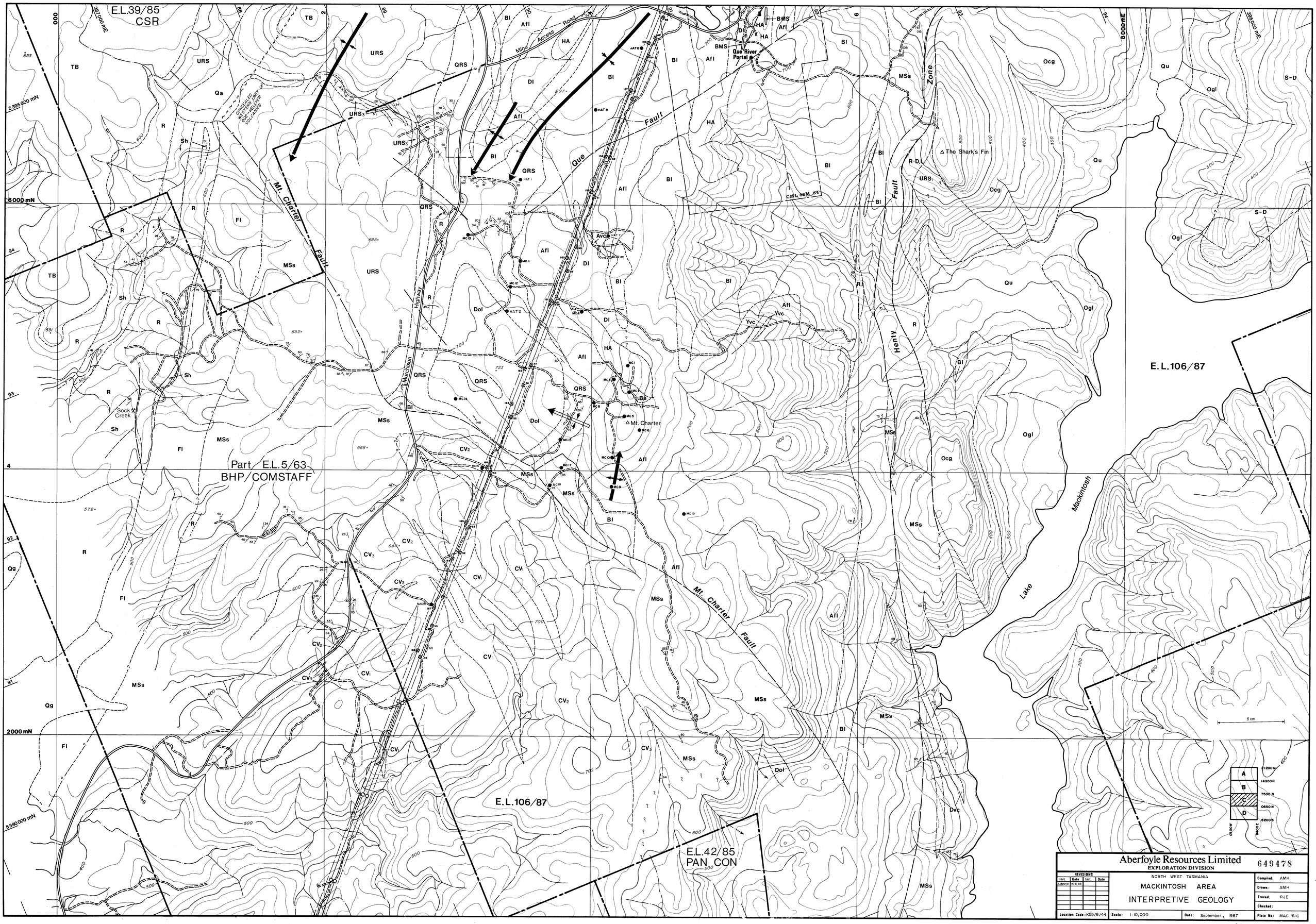
Location Code :
Scale : 1:10,000
Date : September, 1988

Compiled : AMcN
Drawn : JLR
Traced : JLR
Checked :
Plate No : MAC 161 A

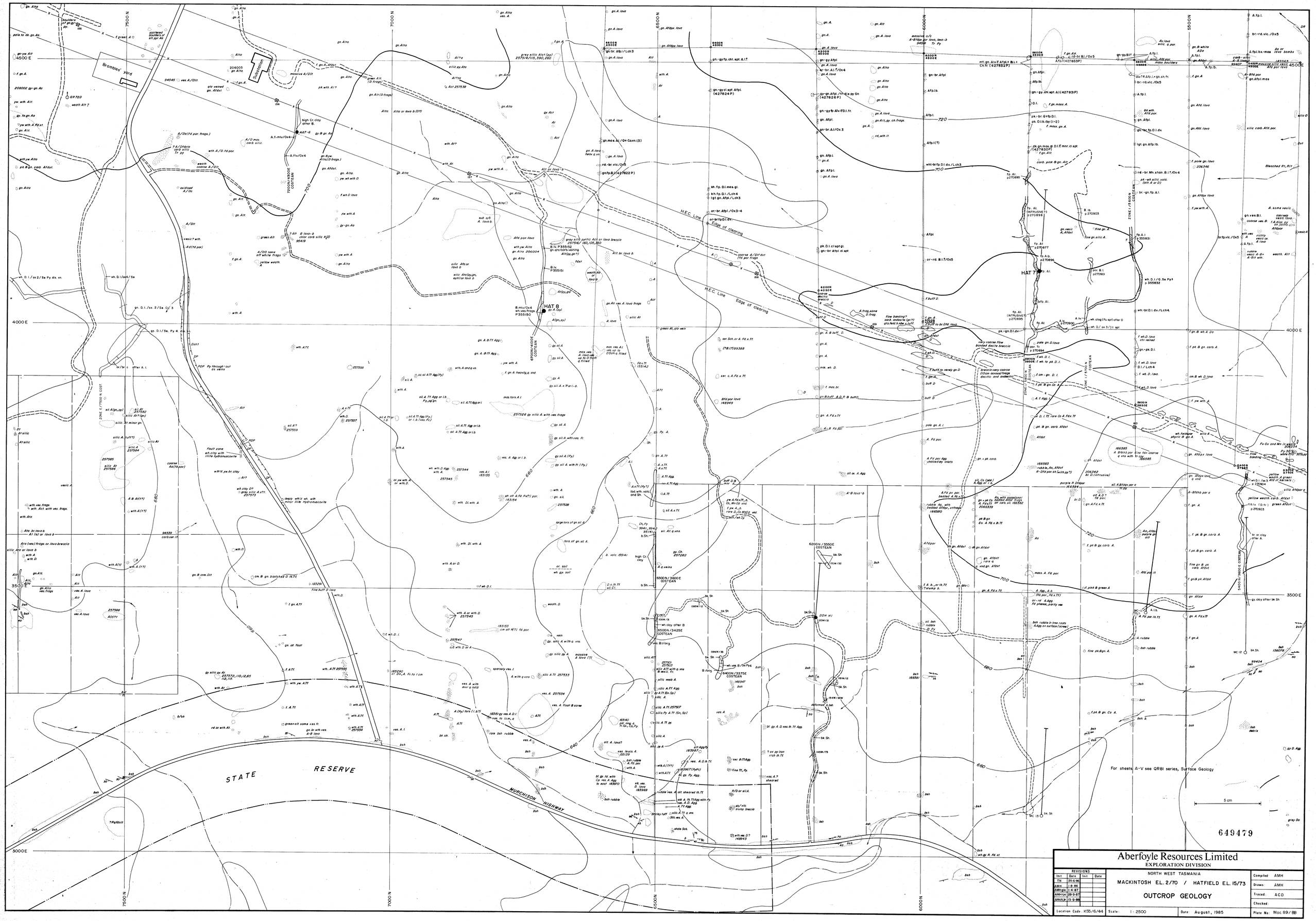
8132

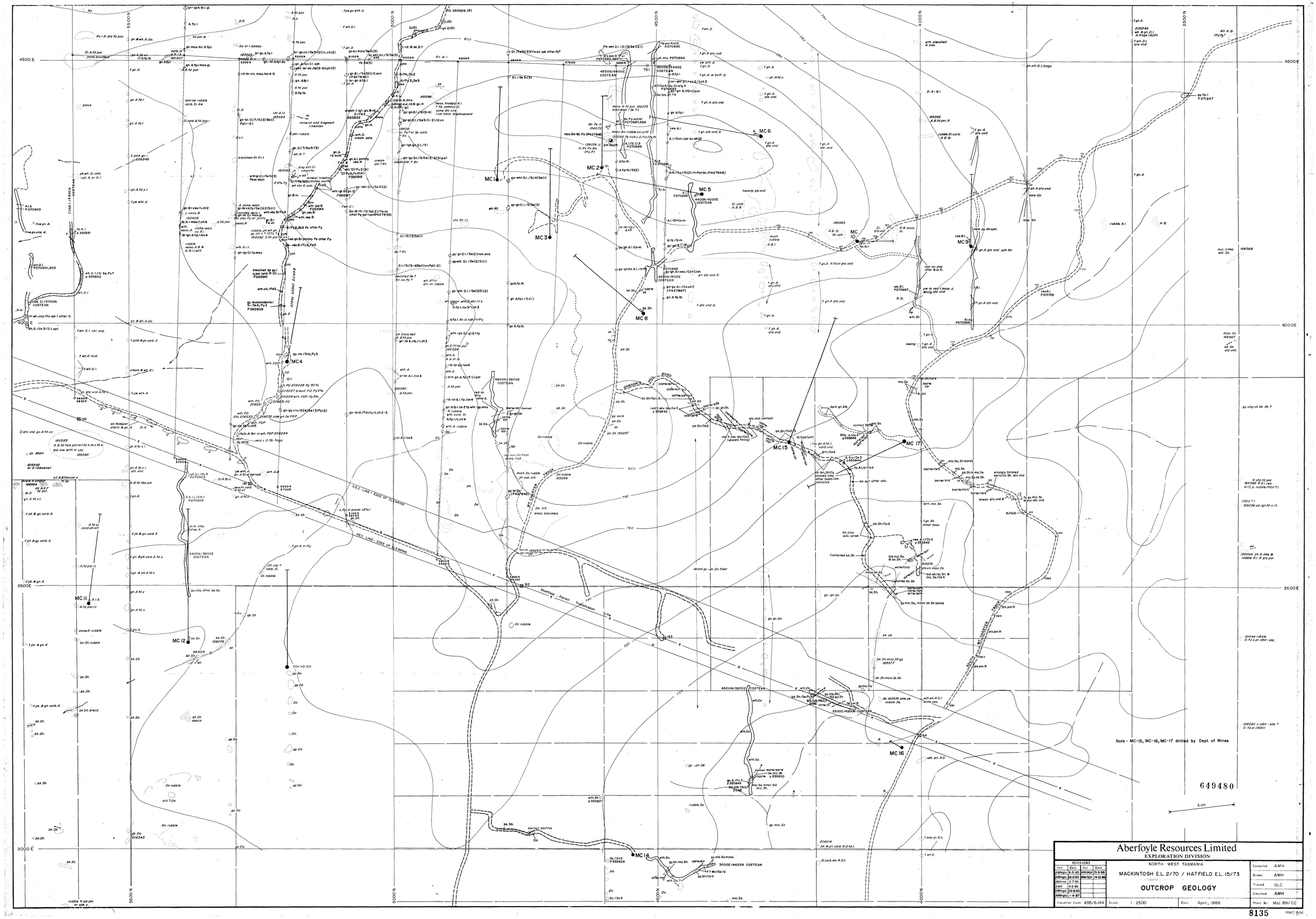
E.L. 106/87
E.L.39/85
CSR
A.F.H. Boundary
Cradle Mountain Link Road
Murchison Highway
Hellyer Portal
Que River Mine
Decline Fault
Que Fault
Southwell River
Mt. Cripps Fault
CML 68M/84
CML 28M/86
14 000 mN
8 000 mN
389 000 mE
390 000 mE
5401 000 mN
5396 000 mN
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
NORTH WEST TASMANIA
MACKINTOSH AREA
INTERPRETIVE GEOLOGY
REVISIONS
Location Code: K55/6/44
Scale: 1 : 10,000
Date: September, 1987
Compiled: AMH
Drawn: AMH
Traced: RJE
Checked:
Plate No: MAC 161 B

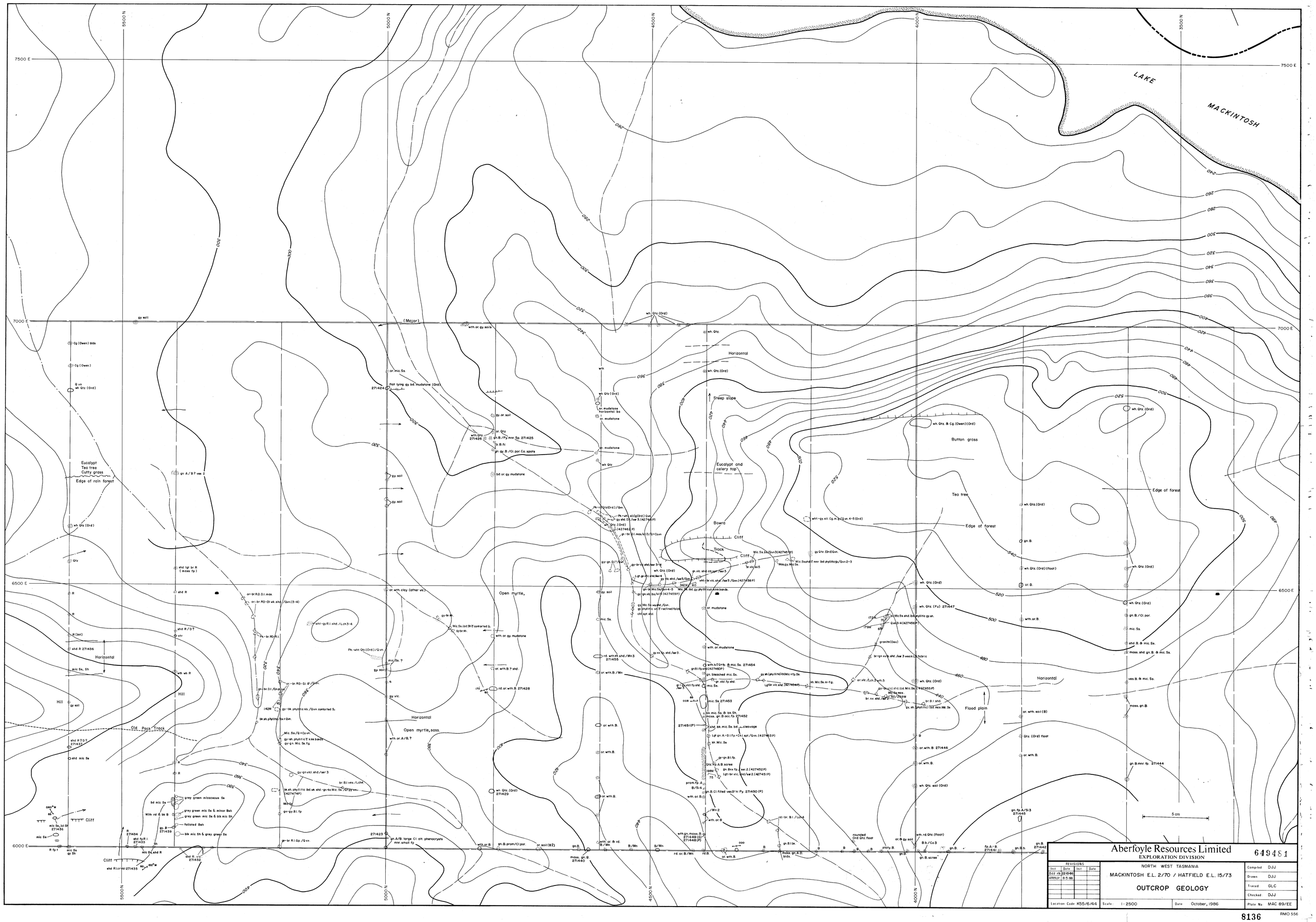
8133


E.L.39/85
CSR
Part E.L.5/63
BHP/COMSTAFF
E.L.106/87
E.L.42/85
PAN CON
Mt. Charter Fault
Que Fault
Henty Fault Zone
Mt. Charter
Que River Portal
Mine Access Road
Murchison Highway
Sock Creek
The Shark's Fin
Mackintosh Lake
CONCEALED WESTERN LIMIT OF RIFT HELLER VOLCANICS
6000 mN
5395000 mN
5390000 mN
2000 mN
397000 mE
398000 mE
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649478
NORTH WEST TASMANIA
MACKINTOSH AREA
INTERPRETIVE GEOLOGY
REVISIONS
Compiled: AMH
Drawn: AMH
Traced: RJE
Checked:
Location Code: K55/6/44
Scale: 1:10,000
Date: September, 1987
Plate No: MAC 161C

8129


Brambles' yard
Substation
HAT 6
HAT 7
HAT 8
H.E.C. Line
Edge of clearing
STATE RESERVE
MURCHISON HIGHWAY
Fault zone
For sheets A-V see QRBI series, Surface Geology
5 cm
649479
Aberfoyle Resources Limited
EXPLORATION DIVISION
NORTH WEST TASMANIA
MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73
OUTCROP GEOLOGY
REVISIONS
Location Code: K55/6/44
Scale: 1:2500
Date: August, 1985
Compiled: AMH
Drawn: AMH
Traced: ACD
Checked:
Plate No: Moc 89/88
8134


Aberfoyle Resources Limited
EXPLORATION DIVISION
NORTH WEST TASMANIA
MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73
OUTCROP GEOLOGY
Compiled AMH
Drawn AMH
Traced GLC
Checked AMH
Scale 1:2500
Date April, 1986
Plate No Moc 89/CC
Location Code K55/6,44
REVISIONS
Note: MC-15, MC-16, MC-17 drilled by Dept. of Mines
649480
5 cm
8135
RMC 556



Aberfoyle Resources Limited
EXPLORATION DIVISION

649481

REVISIONS			
Init	Date	Init	Date
DJJ	22-10-86		
AMN/JV	8-5-86		

NORTH WEST TASMANIA

MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73

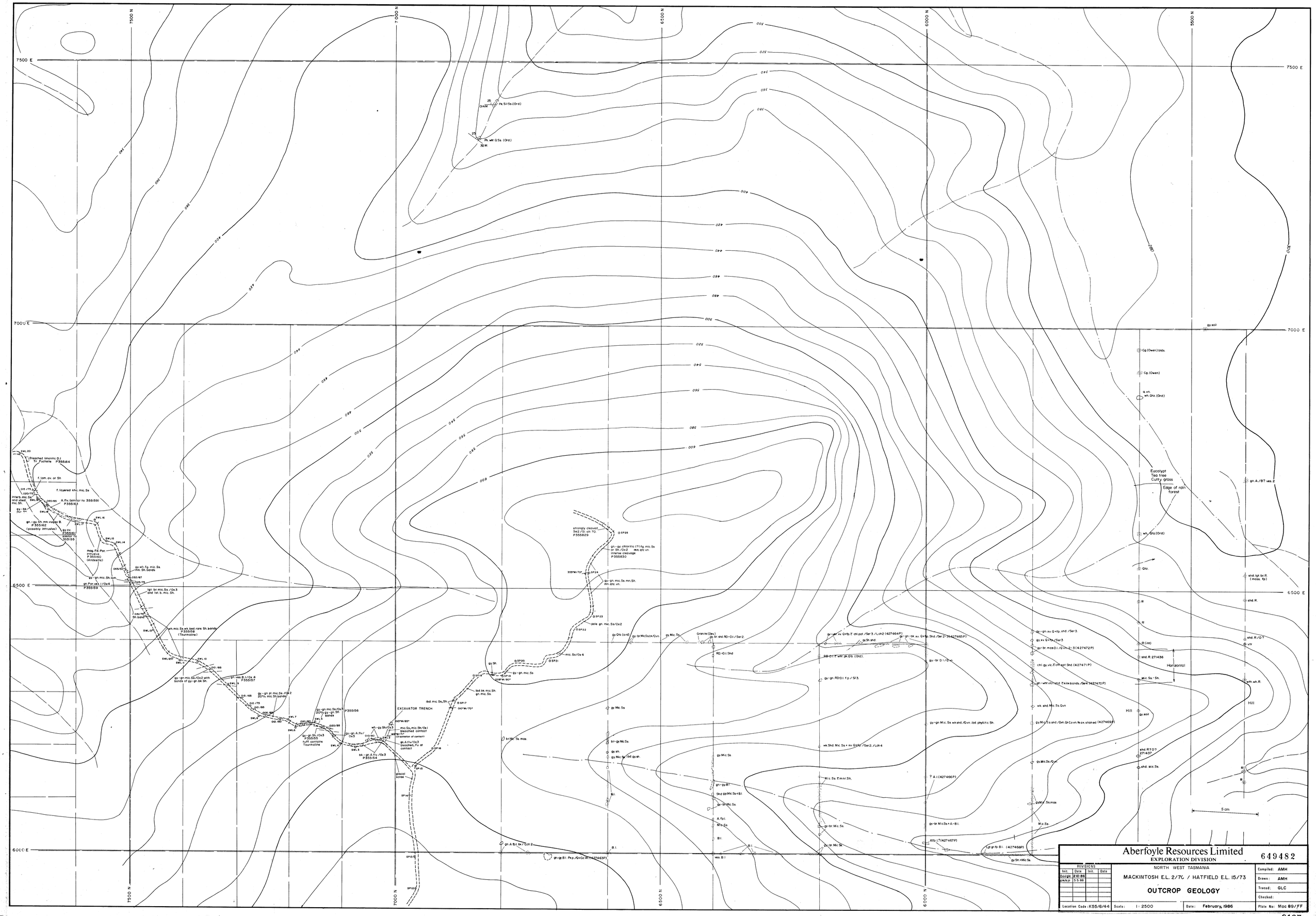
OUTCROP GEOLOGY

Location Code K55/6/44 | Scale: 1:2500 | Date October, 1986

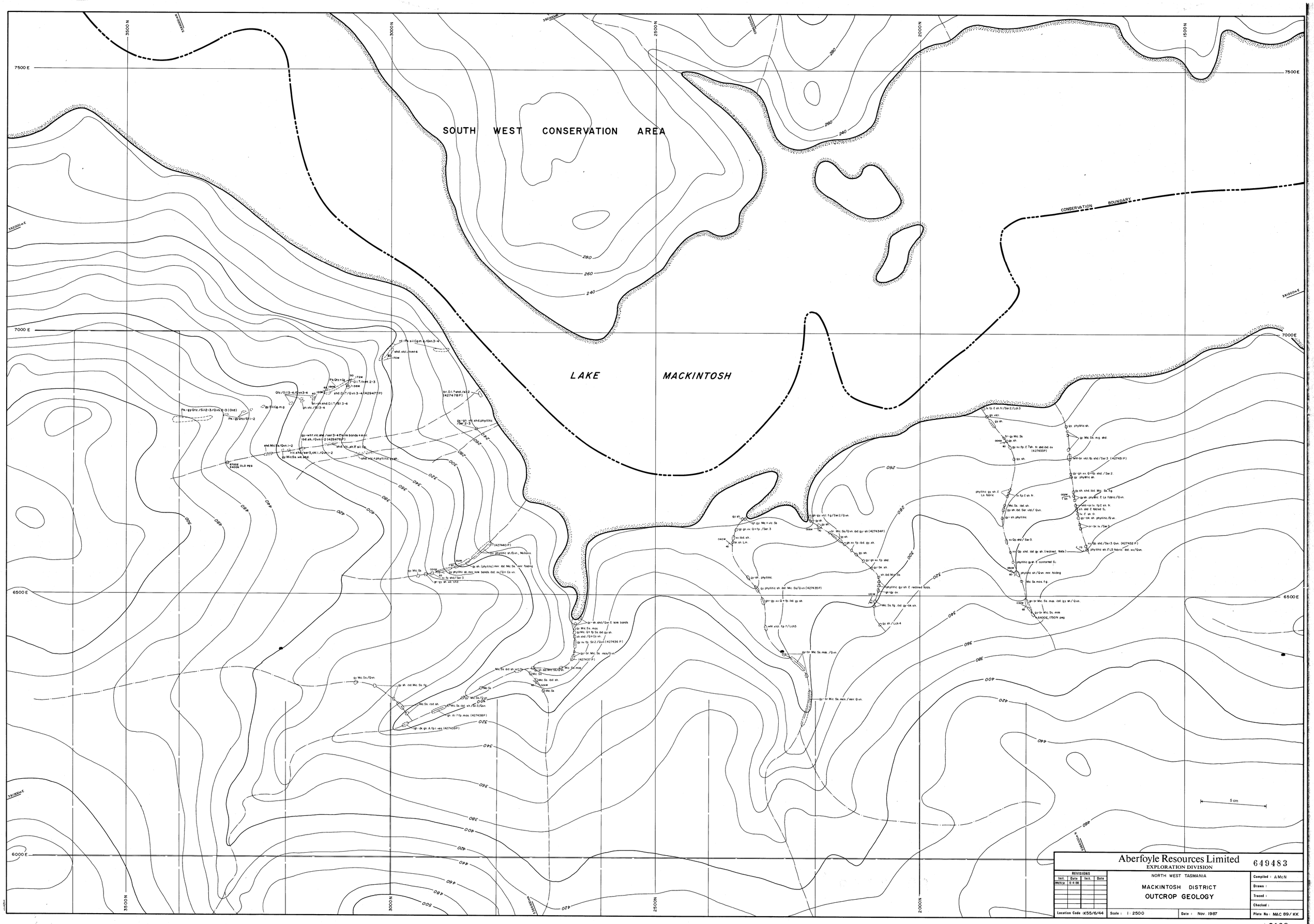
Compiled	DJJ
Drawn	DJJ
Traced	GLC
Checked	DJJ
Plate No	MAC 89/EE

8136

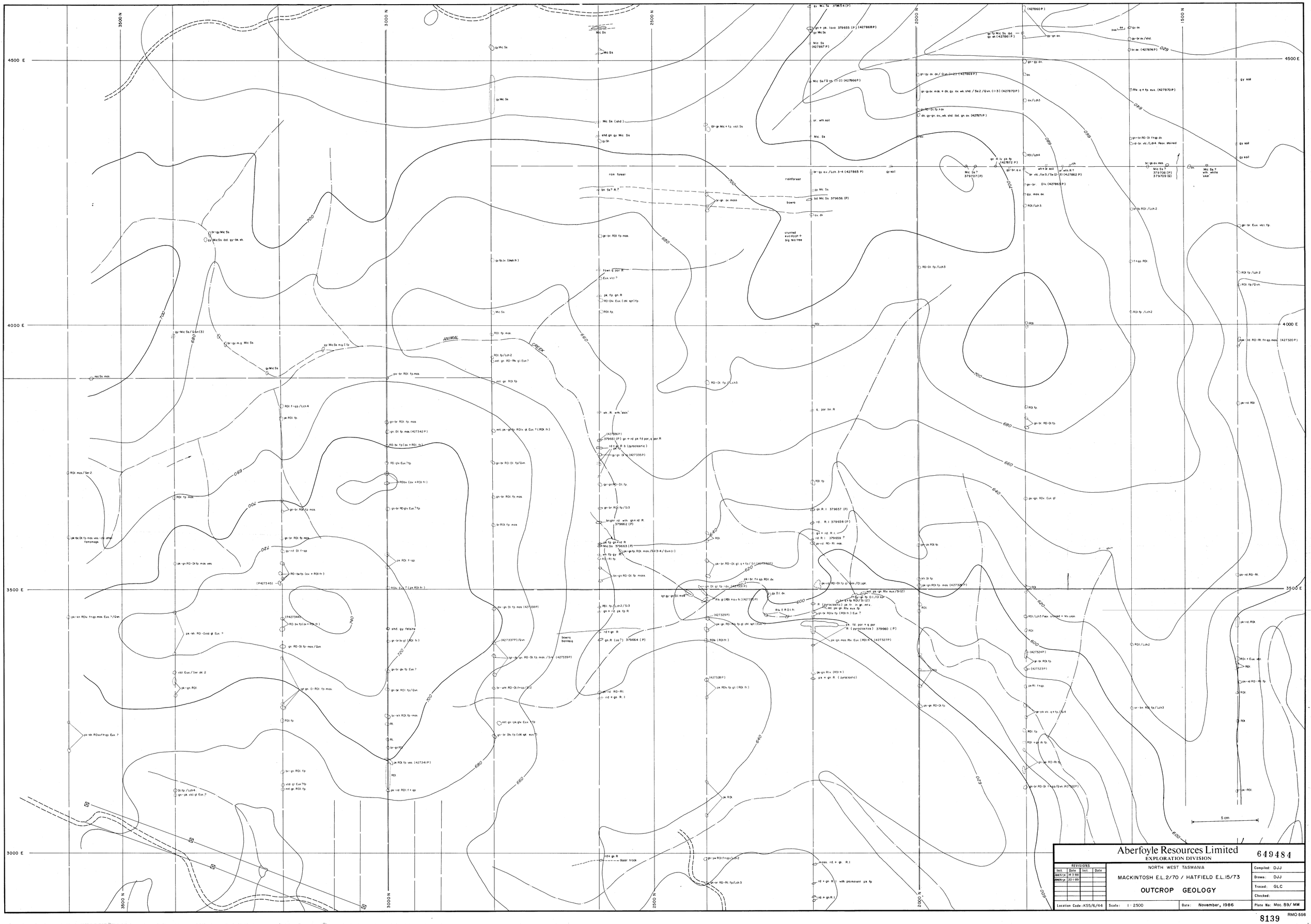
RMO 556


7500 N
7000 N
6500 N
6000 N
5500 N
7500 E
7000 E
6500 E
6000 E
Eucolypt
Tea tree
Cutty gross
Edge of rain forest
Horizontal
Hill
EXCAVATOR TRENCH
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649482
NORTH WEST TASMANIA
MACKINTOSH E.L. 2/76 / HATFIELD E.L. 15/73
OUTCROP GEOLOGY
REVISIONS
Location Code: K55/6/44
Scale: 1:2500
Date: February, 1986
Compiled: AMH
Drawn: AMH
Traced: GLC
Checked:
Plate No: Moc 89/FF

8137


SOUTH WEST CONSERVATION AREA
LAKE MACKINTOSH
CONSERVATION BOUNDARY
7500 E
7000 E
6500 E
6000 E
3500 N
3000 N
2500 N
2000 N
1500 N
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649483
NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY
REVISIONS
Location Code :K55/6/44
Scale : 1:2500
Date : Nov. 1987
Compiled : AMcN
Drawn :
Traced :
Checked :
Plate No : MAC 89/KK

8138

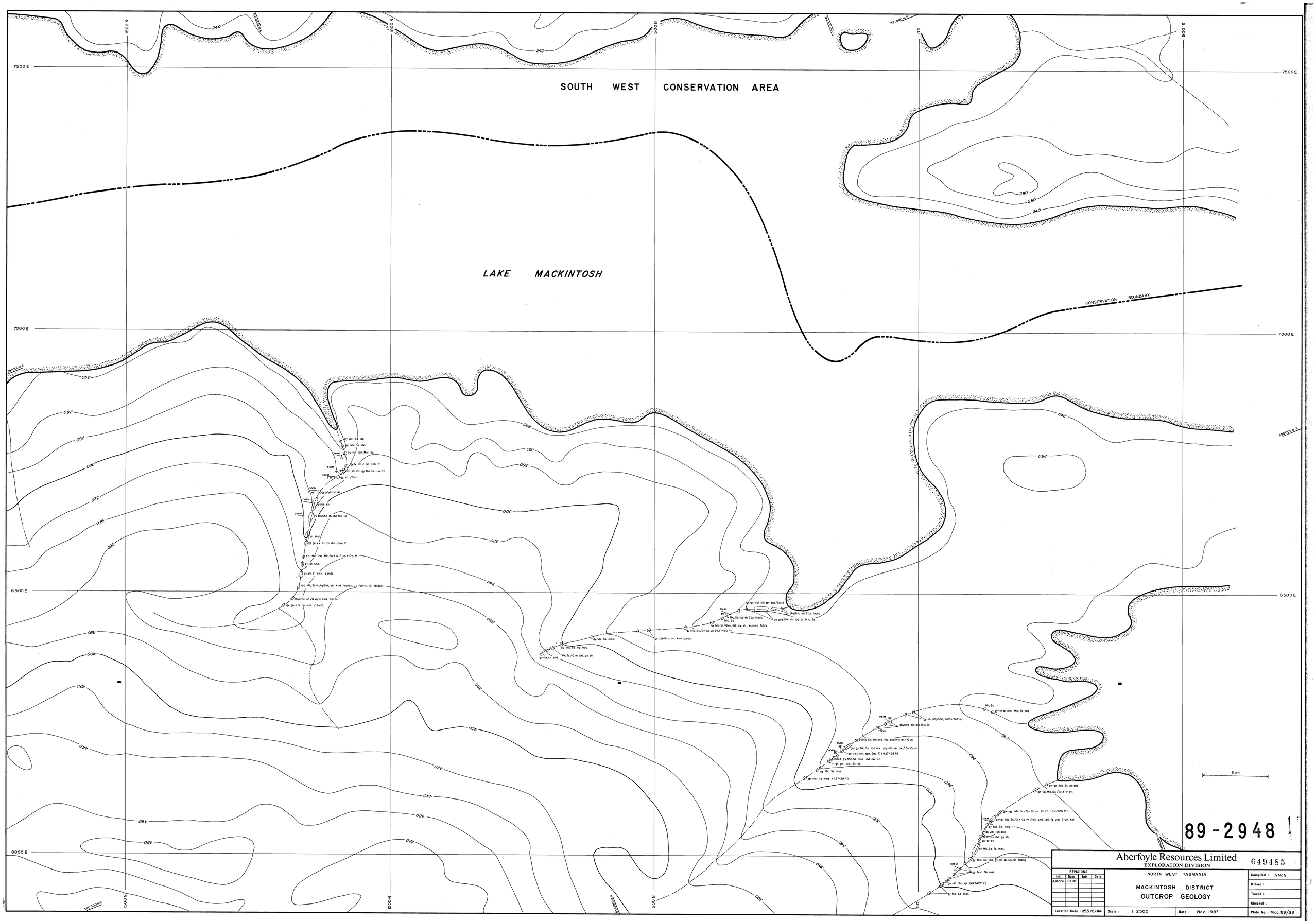


Aberfoyle Resources Limited EXPLORATION DIVISION	649484
NORTH WEST TASMANIA MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73 OUTCROP GEOLOGY	Compiled: DJJ Drawn: DJJ Traced: GLC Checked:
Location Code: K55/6/44 · Scale: 1 : 2500 · Date: November, 1986	Plate No: Moc. 89/ MM

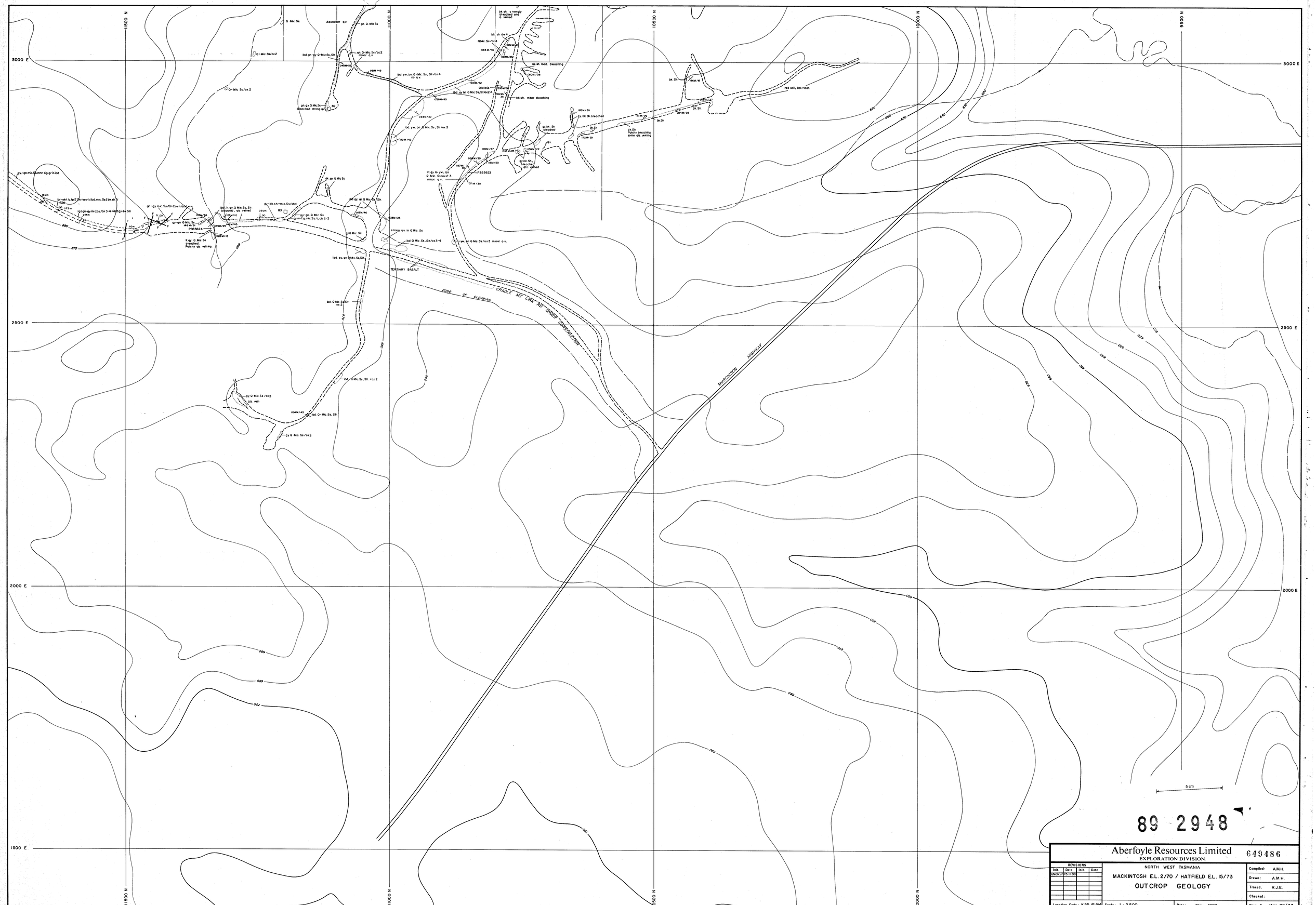
REVISIONS			
Inst.	Date	Inst.	Date
MMN/rje	14-3-88		
MMN/rje	20-1-89		

RMO 556

8139


SOUTH WEST CONSERVATION AREA
LAKE MACKINTOSH
CONSERVATION BOUNDARY
7500 E
7000 E
6500 E
6000 E
1500 N
1000 N
500 N
0
500 S
5 cm
89-2948
Aberfoyle Resources Limited
EXPLORATION DIVISION
649485
NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY
REVISIONS
Init. Date Init. Date
AMcN/rp 7-4-88
Location Code : K55/6/44
Scale : 1:2500
Date : Nov. 1987
Compiled : AMcN
Drawn :
Traced :
Checked :
Plate No : Mac 89/SS

8140



Aberfoyle Resources Limited 649486
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
AMcN/JF	15-11-88		

NORTH WEST TASMANIA

MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73

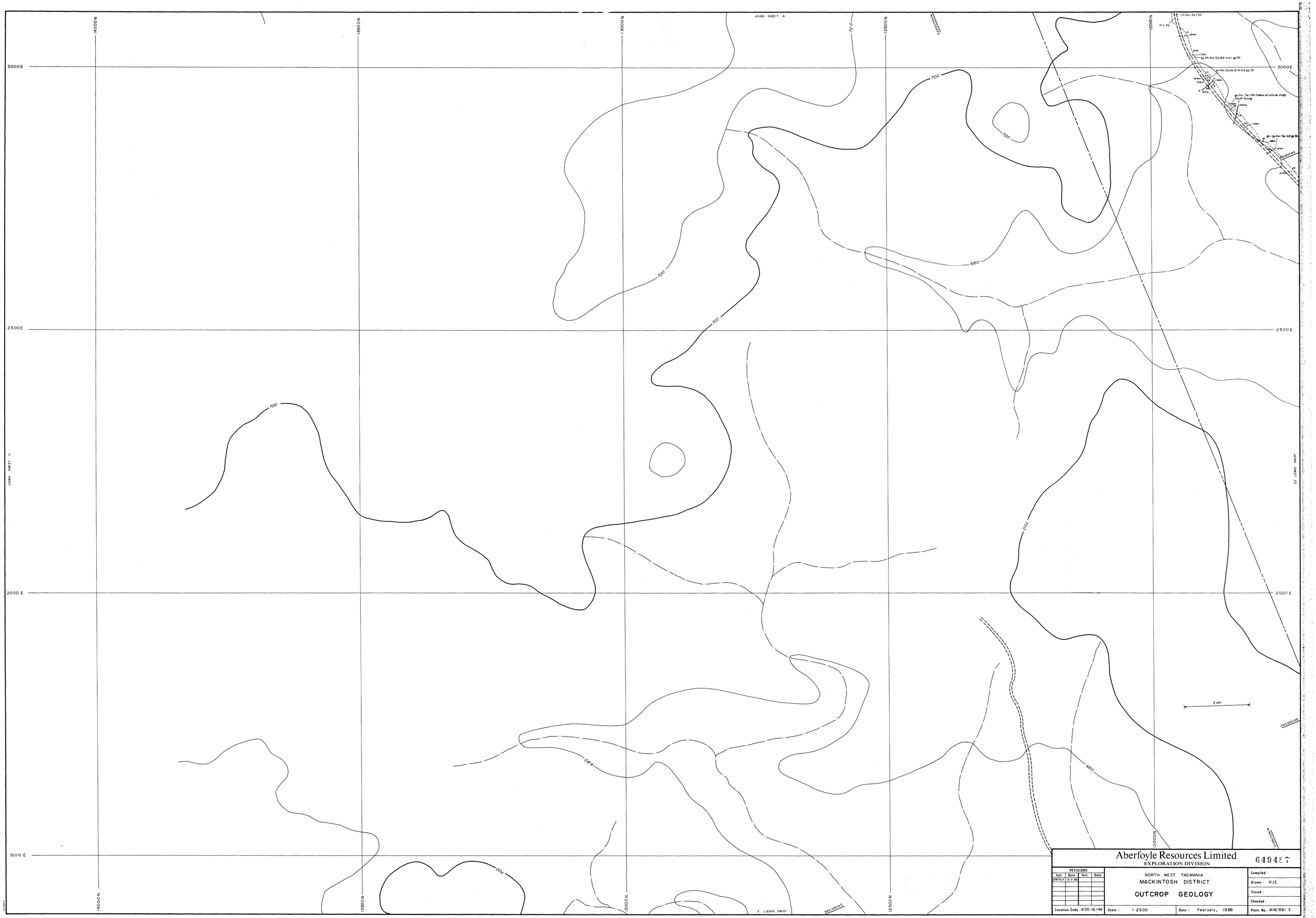
OUTCROP GEOLOGY

Compiled: A.M.H.
Drawn: A.M.H.
Traced: R.J.E.
Checked:

Location Code: K55/6/44 | Scale: 1 : 2 500 | Date: May, 1987 | Plate No: Moc. 89/ZZ

RMO 556

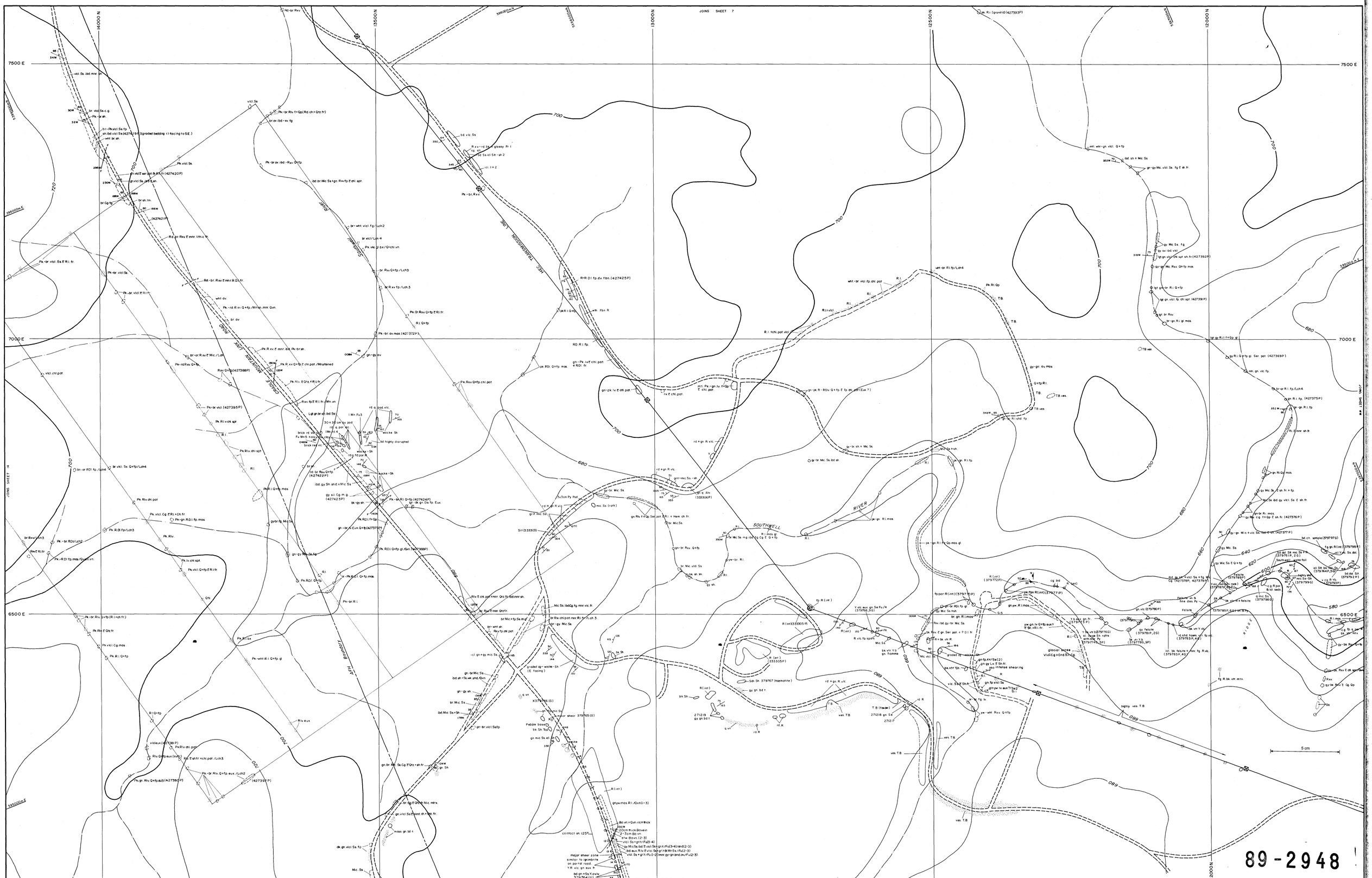
8141


JOINS SHEET 4
JOINS SHEET 11
JOINS SHEET 22
JOINS SHEET 2
14000N
13500N
13000N
12500N
12000N
3000E
2500E
2000E
1500E
700
680
720
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649487
REVISIONS
Init. Date Init. Date
ZDR(N)(P) 15-2-88
NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY
Compiled :
Drawn : RJE
Traced :
Checked :
Location Code : K55/6/44
Scale : 1:2500
Date : February, 1988
Plate No : MAC89/3

JOINS SHEET 5
JOINS SHEET 12
JOINS SHEET 14
JOINS SHEET 3
4500 E
4000 E
3500 E
3000 E
14000 N
13500 N
13000 N
12500 N
12000 N
700
720
680
MURRAY'S
PLAIN
CRADLE MOUNTAIN LINK ROAD
AFH Boundary
5 cm
649488
Aberfoyle Resources Limited
EXPLORATION DIVISION
REVISIONS
Init. Date Init. Date
AMcN/JP 15-11-88
Location Code : K55/6/44
NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY
Scale : 1: 2500
Date : February, 1988
Compiled :
Drawn : RJE
Traced :
Checked :
Plate No: MAC89/4
8143

Aberfoyle Resources Limited EXPLORATION DIVISION				649489
REVISIONS Init. Date Init. Date SAN/rje 20 4 88 AMcN/rje 28 4 88	NORTH WEST TASMANIA MACKINTOSH DISTRICT OUTCROP GEOLOGY			Compiled :
				Drawn : RJE
				Traced :
				Checked :
Location Code : K55/6/44	Scale : 1 : 2500	Date : December, 1987		Plate No : MAC 89/5

8144



Aberfoyle Resources Limited
EXPLORATION DIVISION

649490

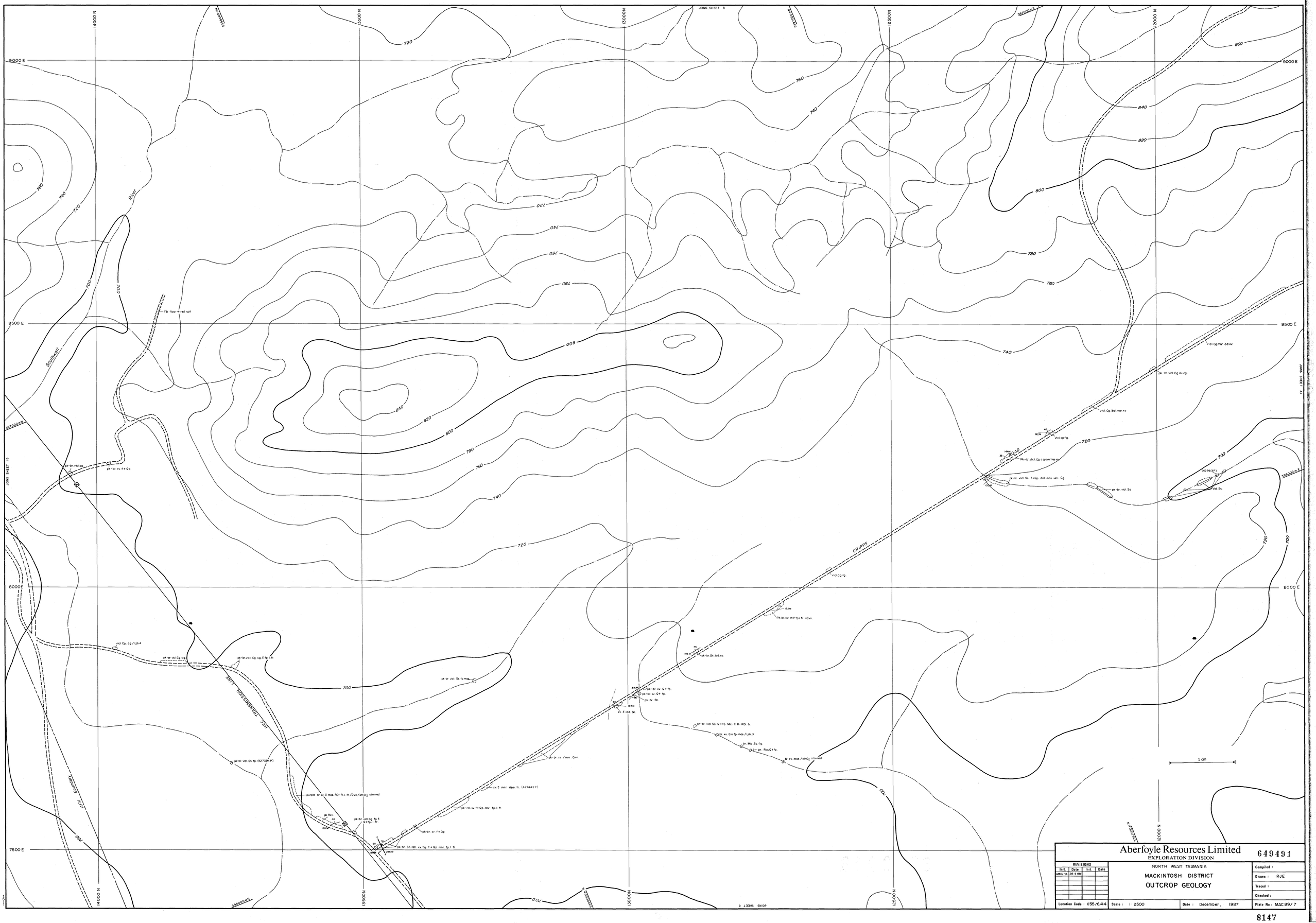
REVISIONS			
Init.	Date	Init.	Date
AMN/JR	6.5.88		
AMN/JR	7.9.88		
AMN/JR	6.2.89		
Location Code : K55/6/44			

NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY

Scale : 1 : 2500
Date : December, 1987

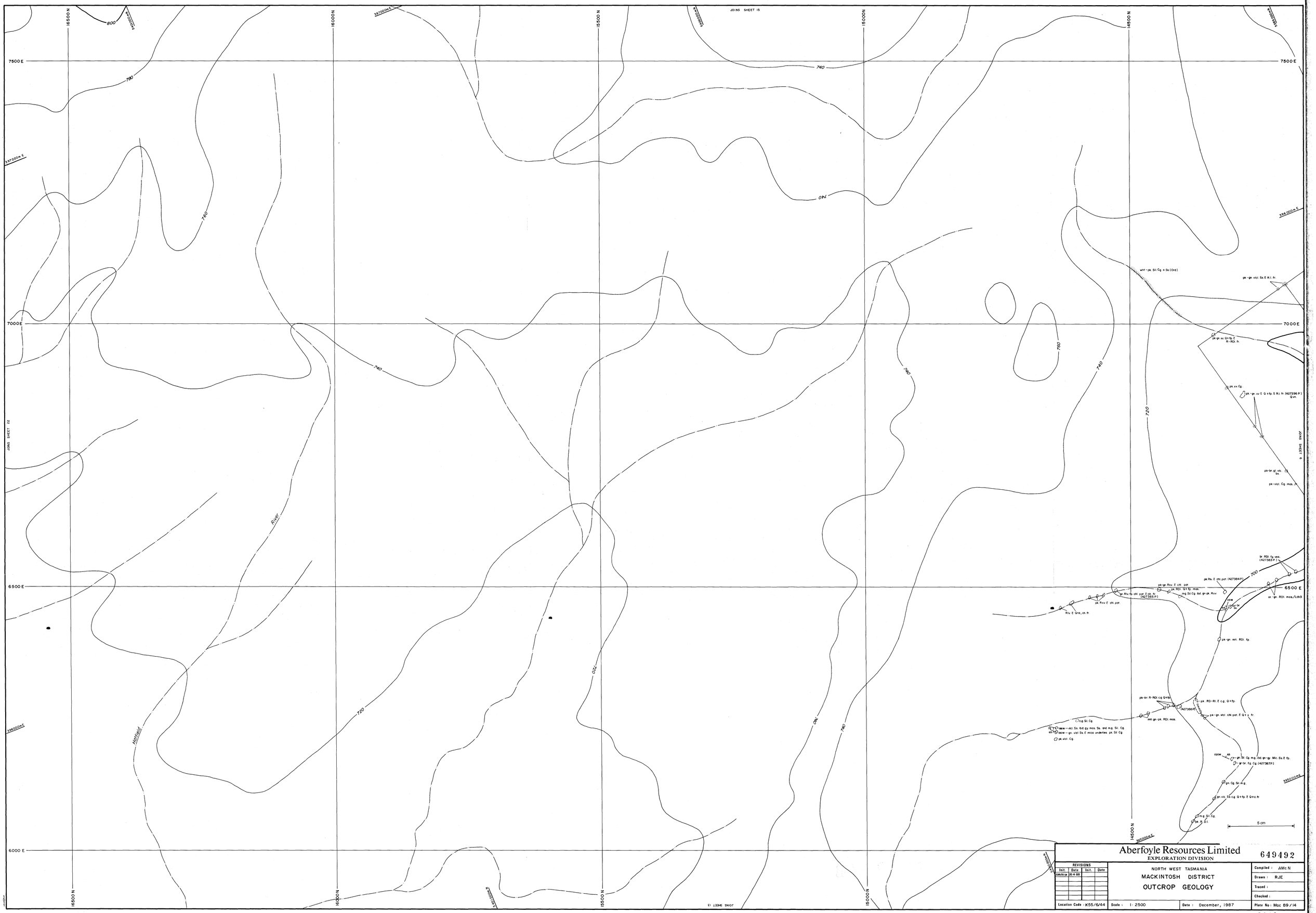
Compiled : DJJ
Drawn : RJE
Traced : RJE
Checked :
Plate No : MAC 89/6

8145



Aberfoyle Resources Limited EXPLORATION DIVISION				649491
REVISIONS Init. Date Init. Date JMN/rje 28.4.88	NORTH WEST TASMANIA MACKINTOSH DISTRICT OUTCROP GEOLOGY			Compiled :
				Drawn : RJE
				Traced :
				Checked :
Location Code : K55/6/44	Scale : 1: 2500	Date : December, 1987		Plate No : MAC89/7

8147



Aberfoyle Resources Limited
EXPLORATION DIVISION

649492

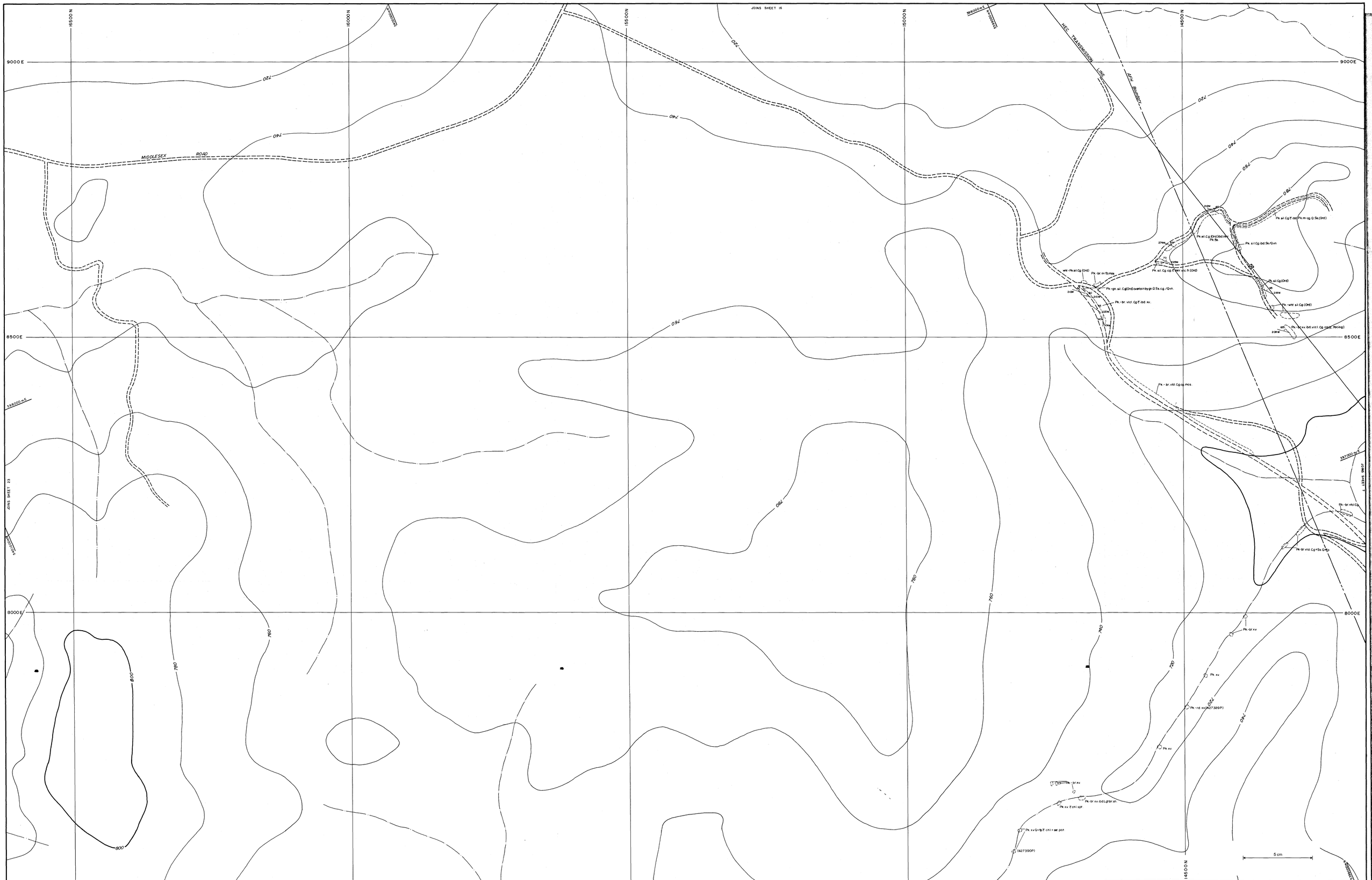
REVISIONS			
Init.	Date	Init.	Date
AMcN/RJE	20-4-88		

NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY

Compiled : AMcN
Drawn : RJE
Traced :
Checked :

Location Code : K55/6/44
Scale : 1 : 2500
Date : December, 1987
Plate No : Mac 89/14

8146



Aberfoyle Resources Limited 649493
EXPLORATION DIVISION

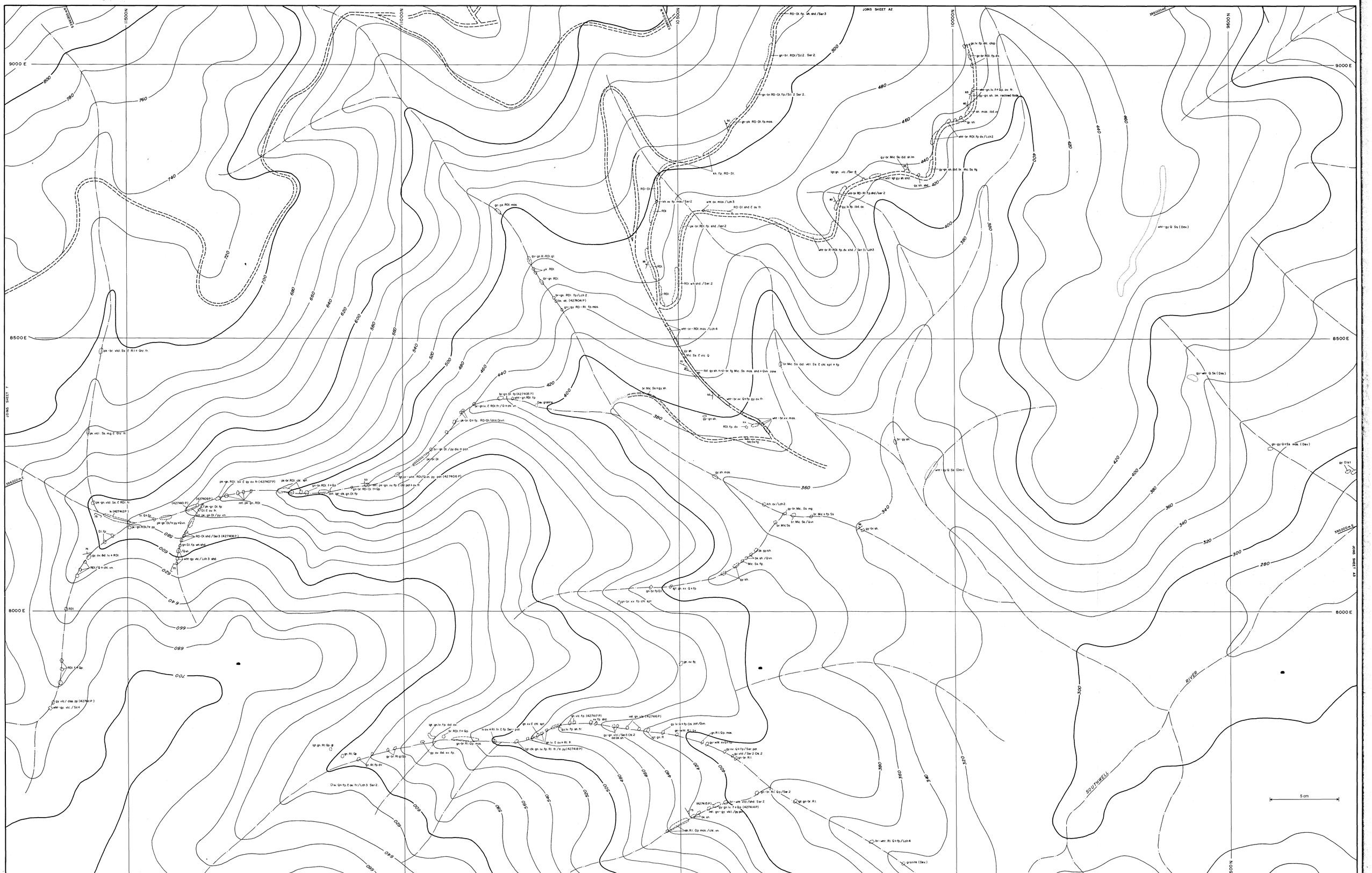
REVISIONS			
Init.	Date	Init.	Date
AMcKyr	6-5-88		

NORTH WEST TASMANIA
MACKINTOSH DISTRICT

Location Code : K55/6/44
Scale : 1:2500
Date : December, 1987

Compiled :
Drawn : RJE
Traced :
Checked :
Plate No : MAC89/15

8148



Aberfoyle Resources Limited
EXPLORATION DIVISION

649494

REVISIONS			
Init.	Date	Init.	Date
AM/NJ/e	II 4-88		

NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY

Location Code : K55/6/44
Scale : 1 : 2500
Date : January , 1988

Compiled : AMcN
Drawn : RJE
Traced :
Checked :
Plate No : MAC 89/ A1

8149

649495

OPEN FILE

MICROFILMED

89-2948 V4

MINES

File Ref. EL 106/87

26 APR 1989

Doc. Ref.

Action Officer | Initials

LETTER

21. 4. '89

REFERS.

Resubmit to | Date

LAKE MACKINTOSH, EXPLORATION LICENCE 106/87

TASMANIA

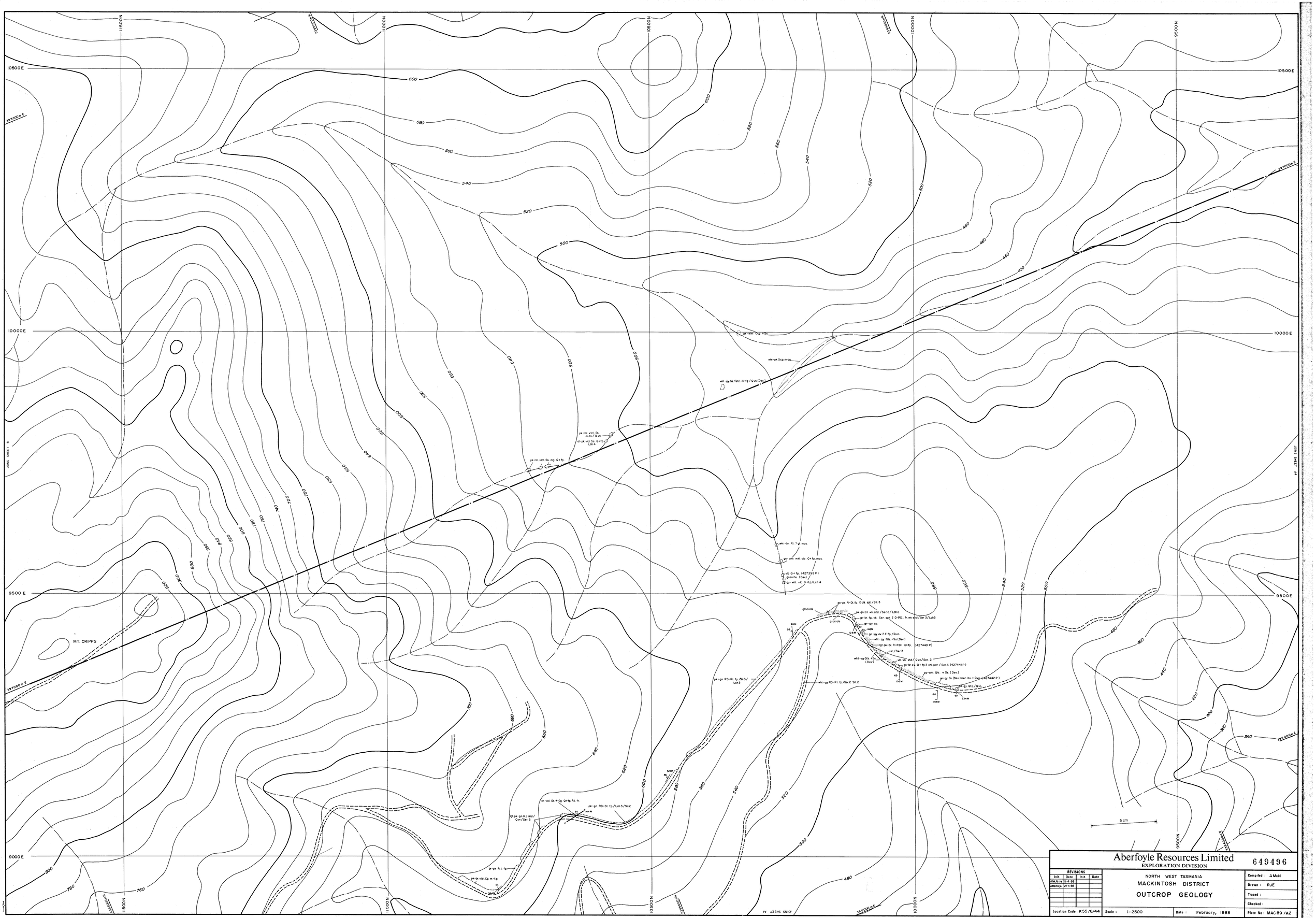
TECHNICAL PROGRESS REPORT

FOR THE PERIOD

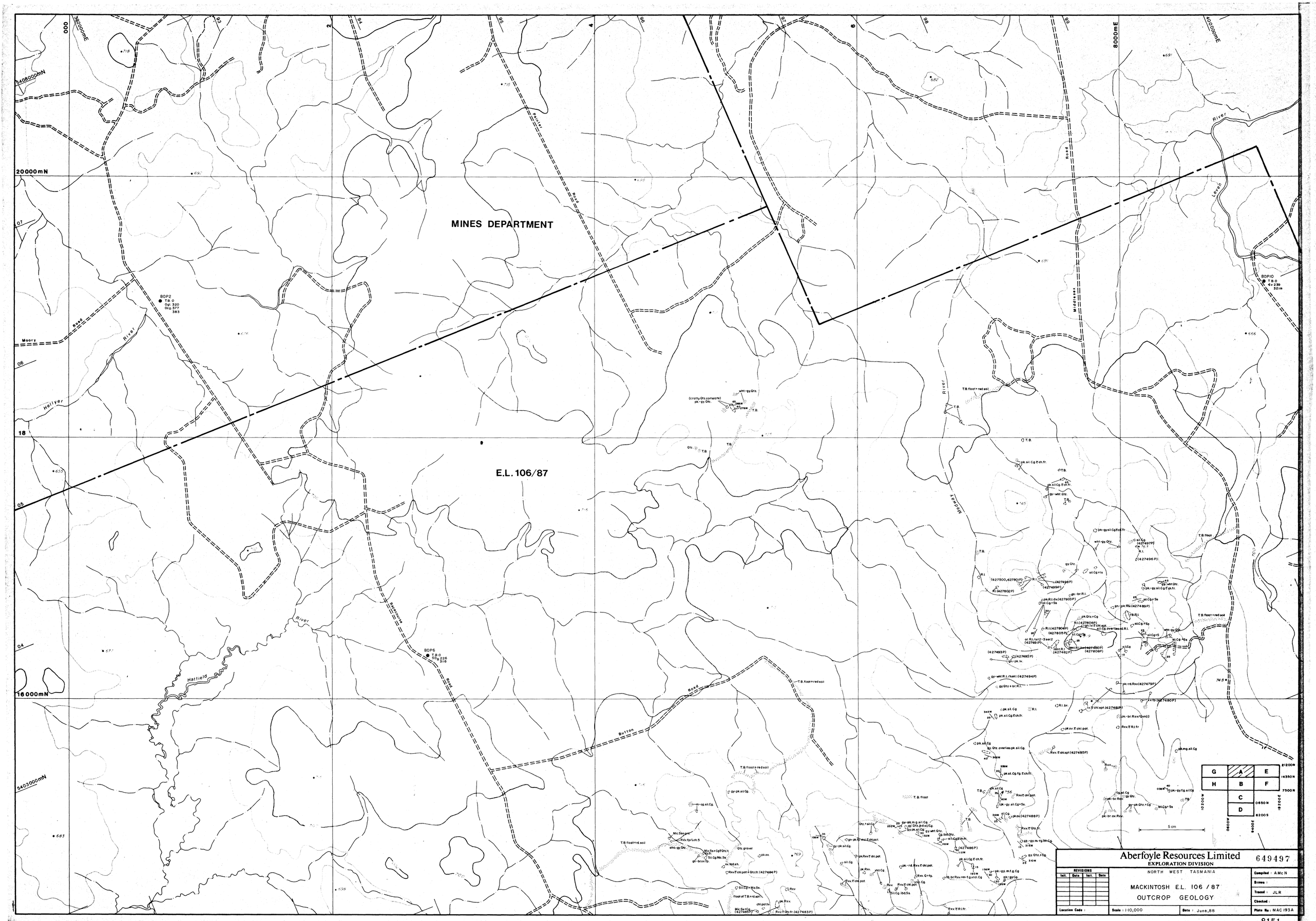
FEBRUARY 1988 TO FEBRUARY 1989

PLATES MAC89/A2 - 235

89-2948 V4/4


10500 E
10000 E
9500 E
9000 E
11500 N
11000 N
10500 N
10000 N
9500 N
MT. CRIPPS
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649496
NORTH WEST TASMANIA
MACKINTOSH DISTRICT
OUTCROP GEOLOGY
REVISIONS
Location Code : K55/6/44
Scale : 1:2500
Date : February, 1988
Compiled : AMcN
Drawn : RJE
Traced :
Checked :
Plate No : MAC 89 /A2

8150



Aberfoyle Resources Limited 649497

EXPLORATION DIVISION

NORTH WEST TASMANIA

MACKINTOSH E.L. 106 / 87

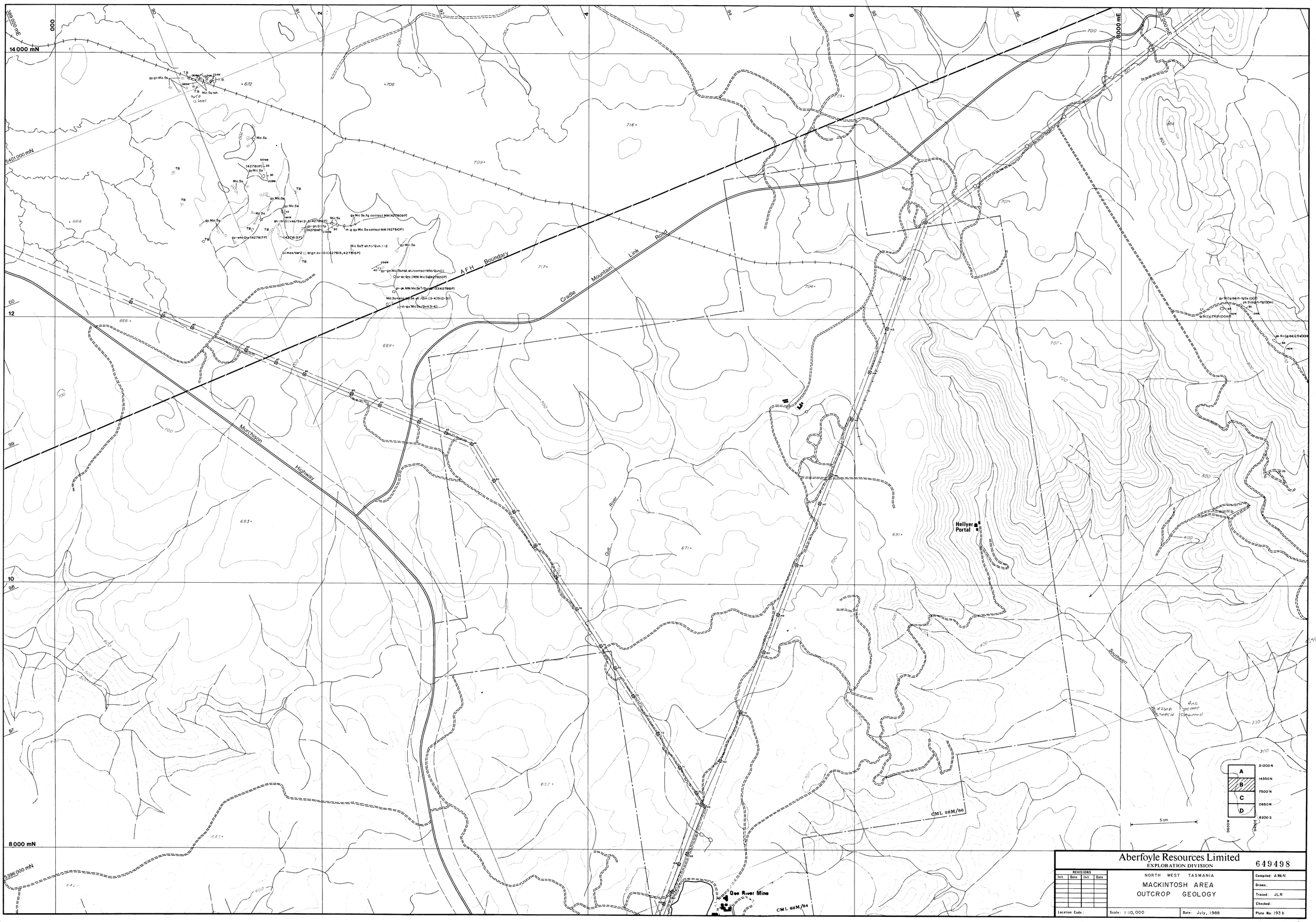
OUTCROP GEOLOGY

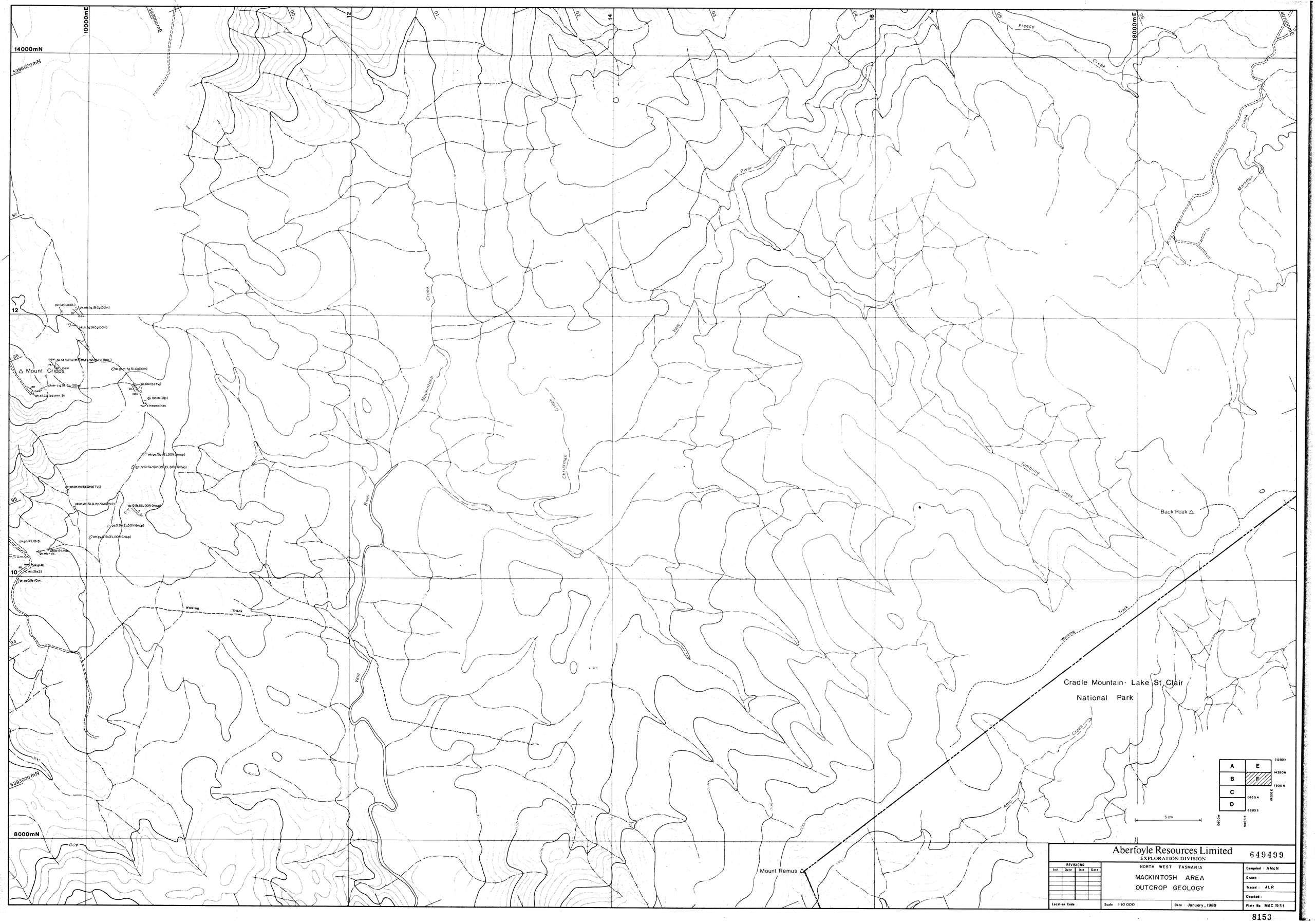
REVISIONS			
Init.	Date	Init.	Date
Location Code :			

Scale : 1:10,000 | Date : June, 88

Compiled : AMcN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 193A

8151

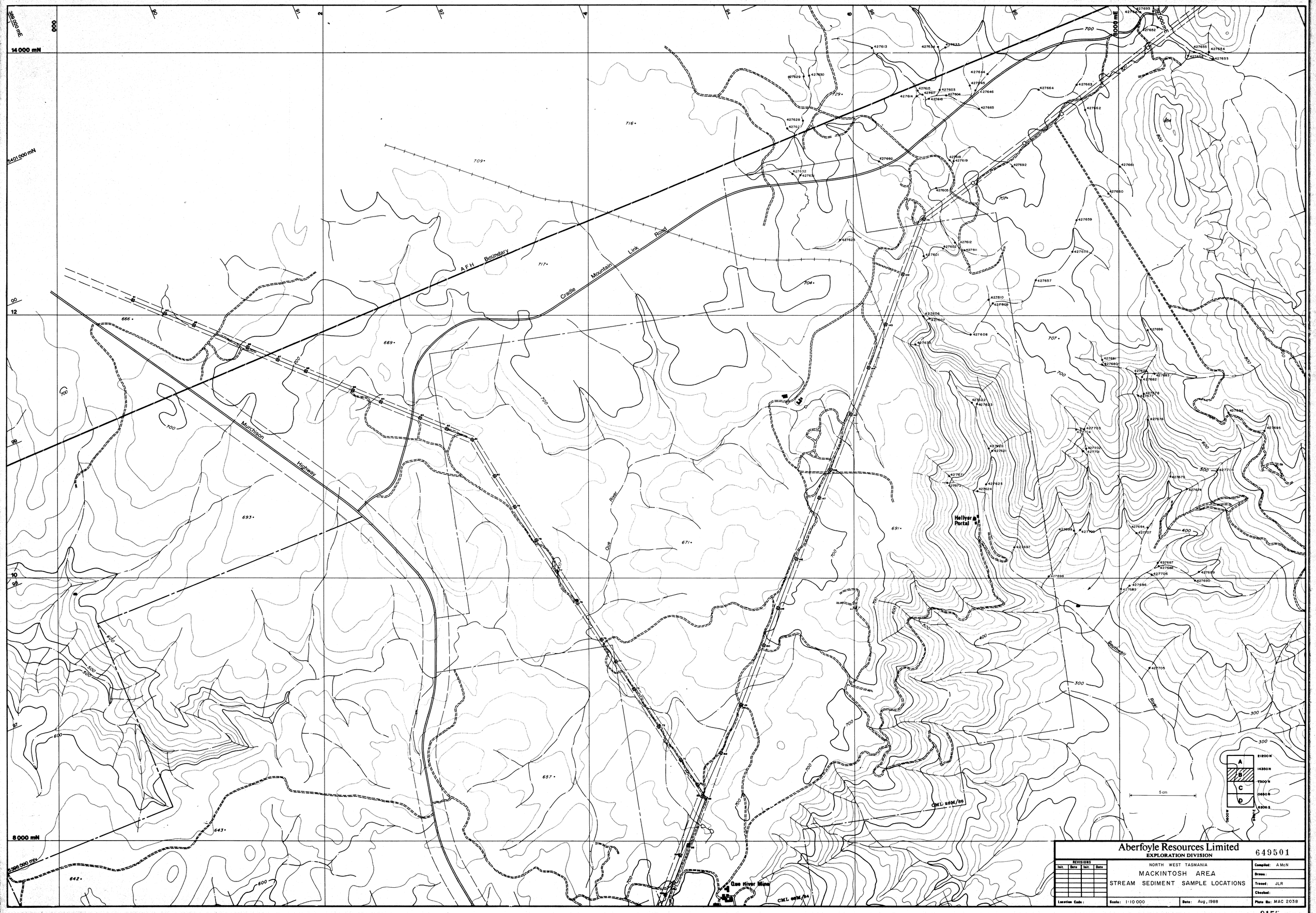

389 000 mE
14 000 mN
5401 000 mN
8000 mE
391 000 mE
8 000 mN
5396 000 mN
A F H Boundary
Cradle Mountain Link Road
Murchison Highway
Hellyer Portal
Queenstown Mine
CML 28M/98
CML 68M/84
Southwell
Roller
Quin
Mic.Ss.
gy.gn.Mic.Ss.
gy.Mic.Ss.
Mic.Ss.fg.contact MM (427809P)
m.gy.Mic.Ss contact MM (427810P)
Mic.Ss.E sh.fr./Qvn.1-2
gy-gn.Mic/Ser bd.sh/contact MM/Qvn(1)
Clear-br.Qtz.(MM.Mic.Ss)(427820P)
gn-gy.MM.Mic.Ss?/Qvn.(3)(427819P)
Mic.Ss(intr.MM) Ss.sh./Qvn.(3-4)Si(2-3)
rd-gy.Mic.Ss./Qvn(3-4)
gy.Si.Cg.bd.m-fg.Ss.(00P)
gy.Si.Cg.bd.m-fg(00m)
gy.Si.Cg.?Rdr(00m)P
gy.Si.Cg.bd.G.Ss(00m)
Aerofoyle Resources Limited
EXPLORATION DIVISION
649498
NORTH WEST TASMANIA
MACKINTOSH AREA
OUTCROP GEOLOGY
REVISIONS
Init. Date Init. Date
Location Code:
Scale: 1:10,000
Date: July, 1988
Compiled: A McN
Drawn:
Traced: JLR
Checked:
Plate No: 193 b
A 21200 N
B 14350 N
C 7500 N
D 0650 N
6200 S
5 cm
8152


14000mN
5398000mN
10000mE
18000mE
407000mE
Fleece
Creek
River
Marsden
Creek
Mackintosh
Creek
Christmas
River
Vale
Tumbling
Creek
Back Peak
Walking
Track
Cradle Mountain- Lake St Clair
National Park
Mount Remus
Mount Cribbs
5393000mN
8000mN
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649499
NORTH WEST TASMANIA
MACKINTOSH AREA
OUTCROP GEOLOGY
REVISIONS
Location Code
Scale 1:10 000
Date January, 1989
Compiled AMcN
Drawn
Traced JLR
Checked
Plate No MAC 1931

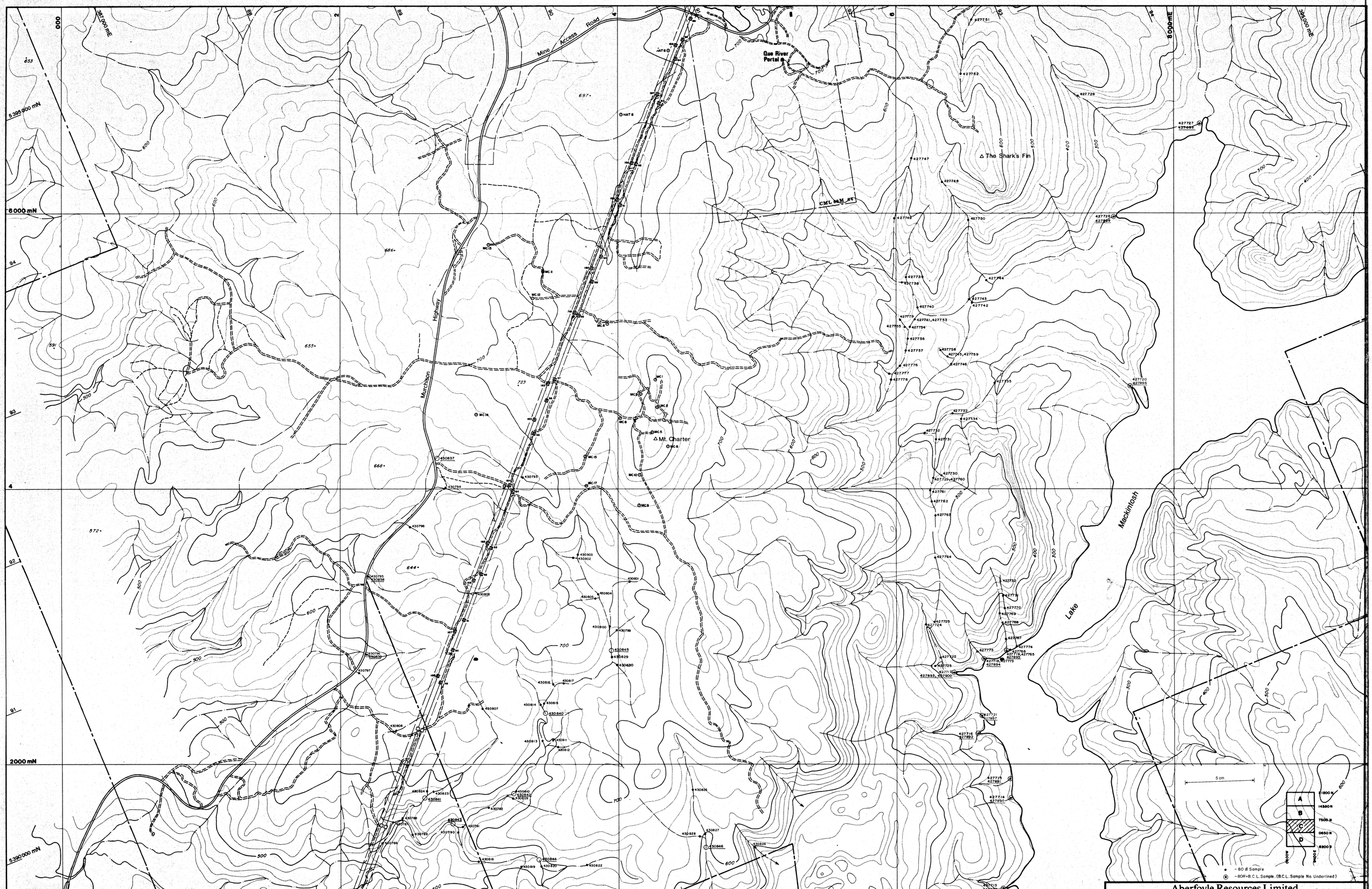
8153

Aberfoyle Resources Limited
EXPLORATION DIVISION
649500
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT SAMPLE LOCATIONS
REVISIONS
Init. Date Init. Date
Location Code :
Scale : 1:10,000
Date : Aug. 1988
Compiled : AMcN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 203A
5 cm
A 21200 N
B 14350 N
C 7500 N
D 0650 N
6200 S
0650 W
S-HOSE
20000mN
16000mN
5408000mN
5403000mN
8000mE
Moory Road
Kelly River
Painter Road
Racecourse Road
Hatfield River
Middlesex Road
Leven River
Mersey River
427649
427650
427651
427636
427637
427639
427640
427641
427642
427643
13994
13995
13996

8154


Aberfoyle Resources Limited
EXPLORATION DIVISION
649501
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT SAMPLE LOCATIONS
REVISIONS
Init. Date Init. Date
Location Code:
Scale: 1:10 000
Date: Aug, 1988
Compiled: A McN
Drawn:
Traced: JLR
Checked:
Plate No: MAC 203B
A F H Boundary
Cradle Mountain Link Road
Murchison Highway
Quin River
Southwell River
Hellyer Portal
Que River Mine
CML 88M/89
CML 88M/84
14 000 mN
8 000 mN
5401 000 mN
5396 000 mN
395 000 mE
400 000 mE
5 cm

8155



Aberfoyle Resources Limited
EXPLORATION DIVISION

649502

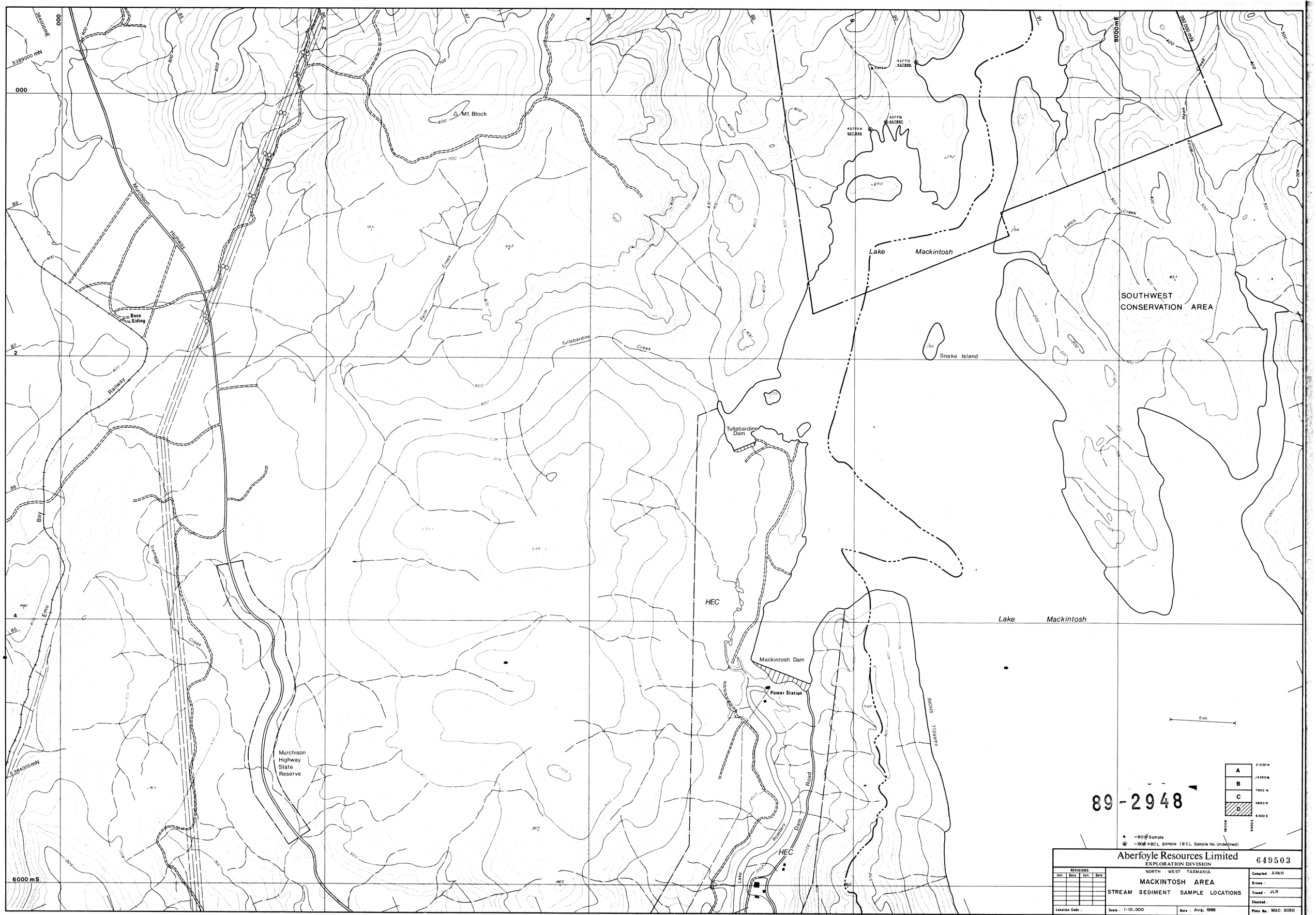
REVISIONS					
Init.	Date	Init.	Date		
AMcN/JR	1-2-89				

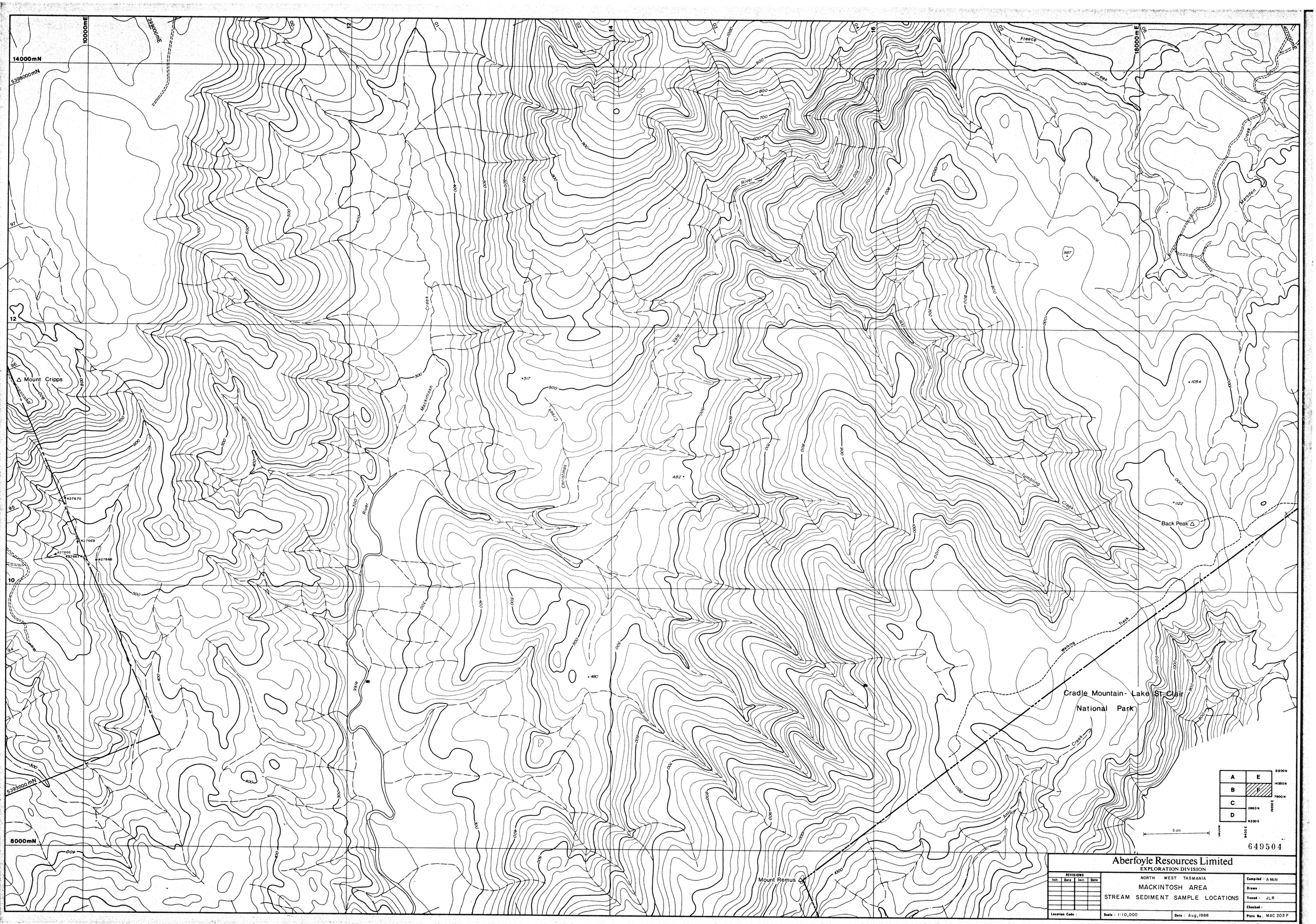
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT SAMPLE LOCATIONS

Compiled: AMcN
Drawn:
Traced: JLR
Checked:

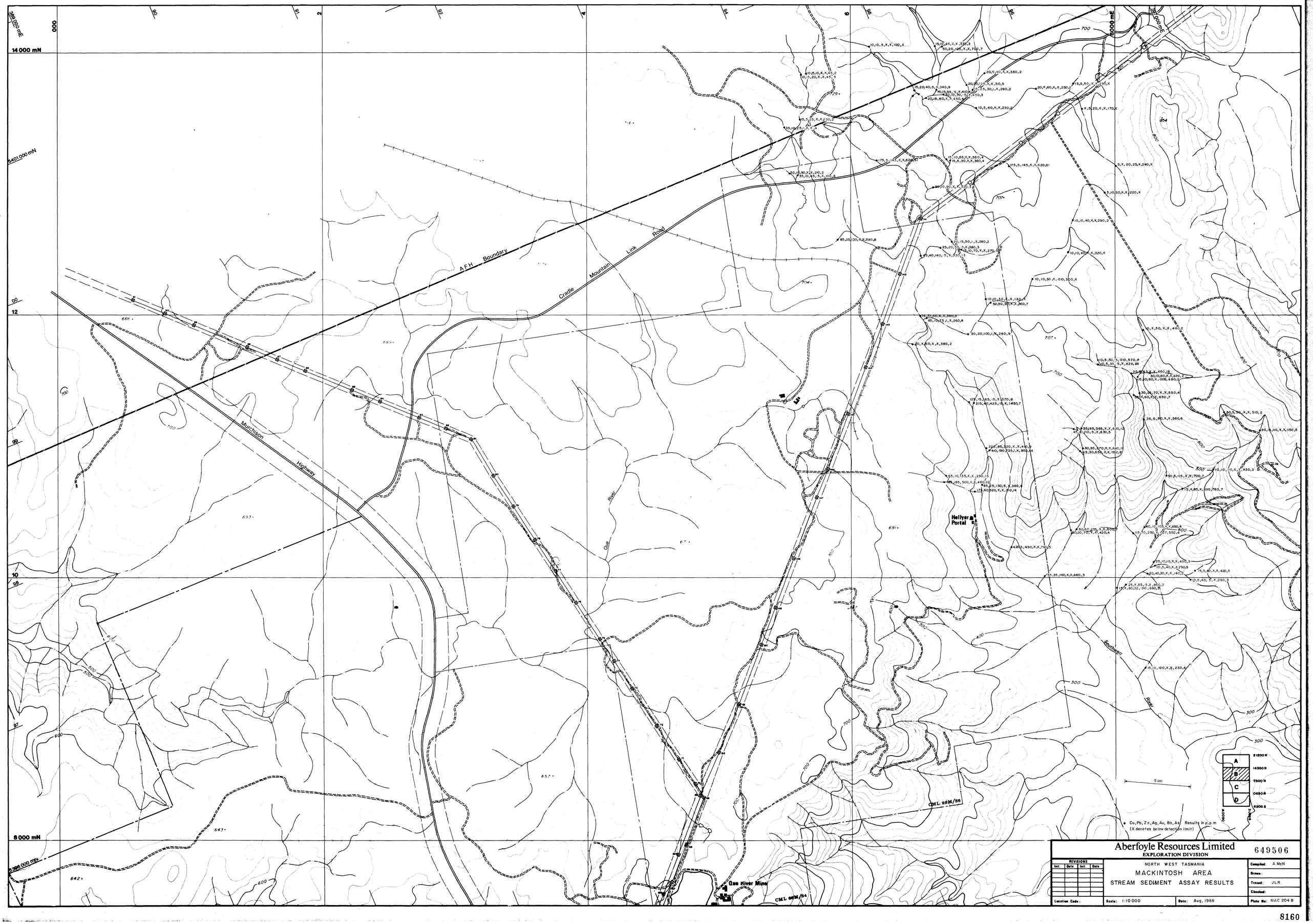
Location Code:
Scale: 1:10,000
Date: Aug, 1988
Plate No: MAC 203C

8156

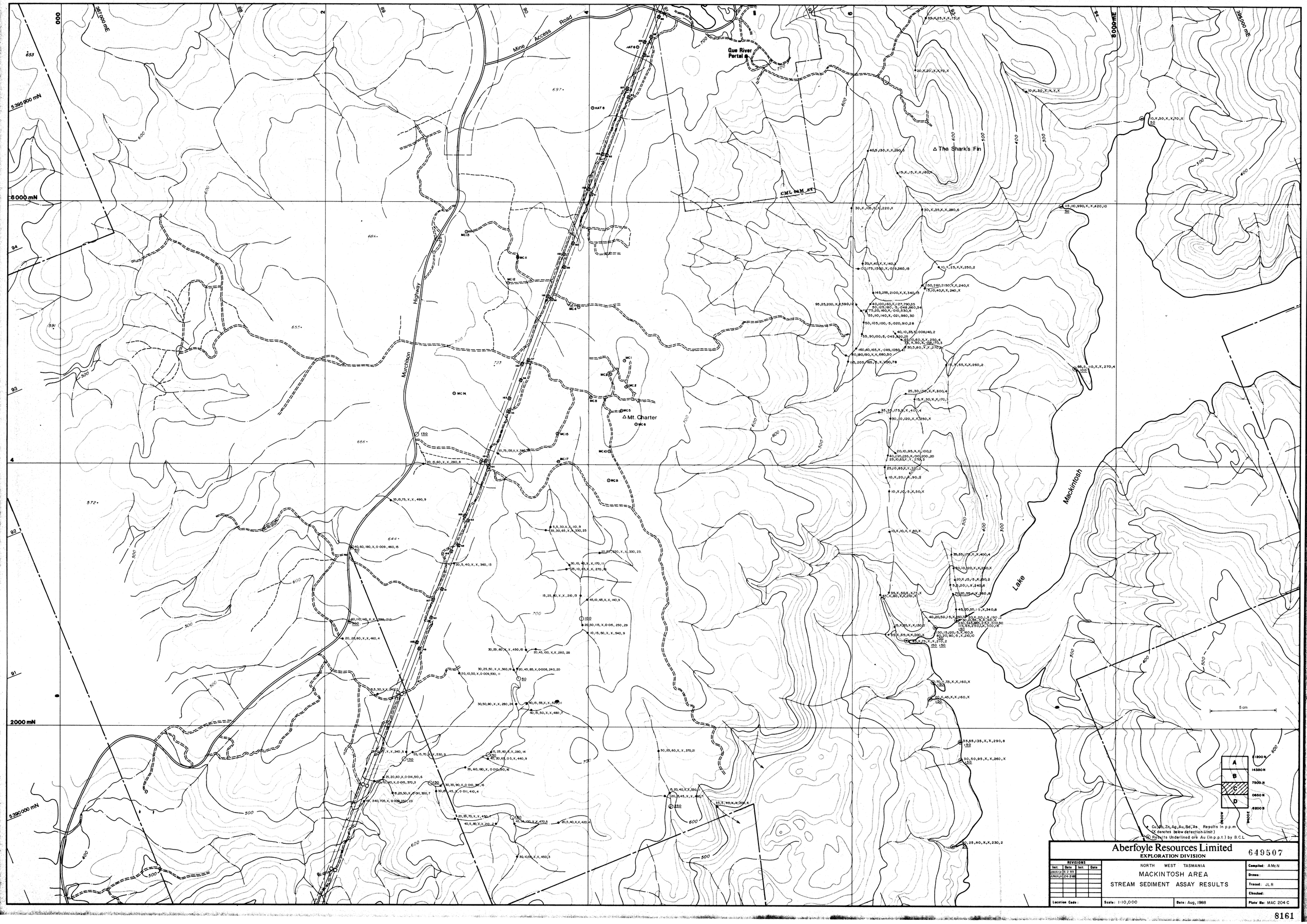

Mt. Block
Murchison Highway
Boco Siding
Railway
Bay
Emu
Tramway
Creek
Farm Creek
Tullabardine Creek
Tullabardine Dam
Lake Mackintosh
Snake Island
SOUTHWEST CONSERVATION AREA
Lunch Creek
Swift River
HEC
Mackintosh Dam
Power Station
Rosebery Dam Road
Lake
FARRELL SHORE
Murchison Highway State Reserve
5389000 mN
5384000mN
6000 mS
5 cm
89-2948
A 21200 N
B 14350 N
C 7500 N
D 0650 N
6200 S
0400 W
9400 E
• -80# Sample
◉ -80# +BCL Sample (BCL Sample No. Underlined)
Aberfoyle Resources Limited
EXPLORATION DIVISION
649503
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT SAMPLE LOCATIONS
REVISIONS
Init. Date Init. Date
Location Code :
Scale : 1:10,000
Date : Aug. 1988
Compiled : A McN
Drawn :
Traced : JLR
Checked :
Plate No. : MAC 2030


14000mN
5398000mN
10000mE
398000mE
18000mE
Mount Cripps
Back Peak
Mount Remus
Cradle Mountain- Lake St Clair
National Park
Walking Track
Mackintosh Creek
Christmas Creek
Vale River
Tumbling Creek
Fleece Creek
Marsden Creek
Allo Creek
987
1054
1122
517
482
490
427670
427669
427666
427667
427668
5393000mN
8000mN
5 cm
649504
Aberfoyle Resources Limited
EXPLORATION DIVISION
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT SAMPLE LOCATIONS
REVISIONS
Location Code :
Scale : 1:10,000
Date : Aug, 1988
Compiled : A McN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 203 F
8158

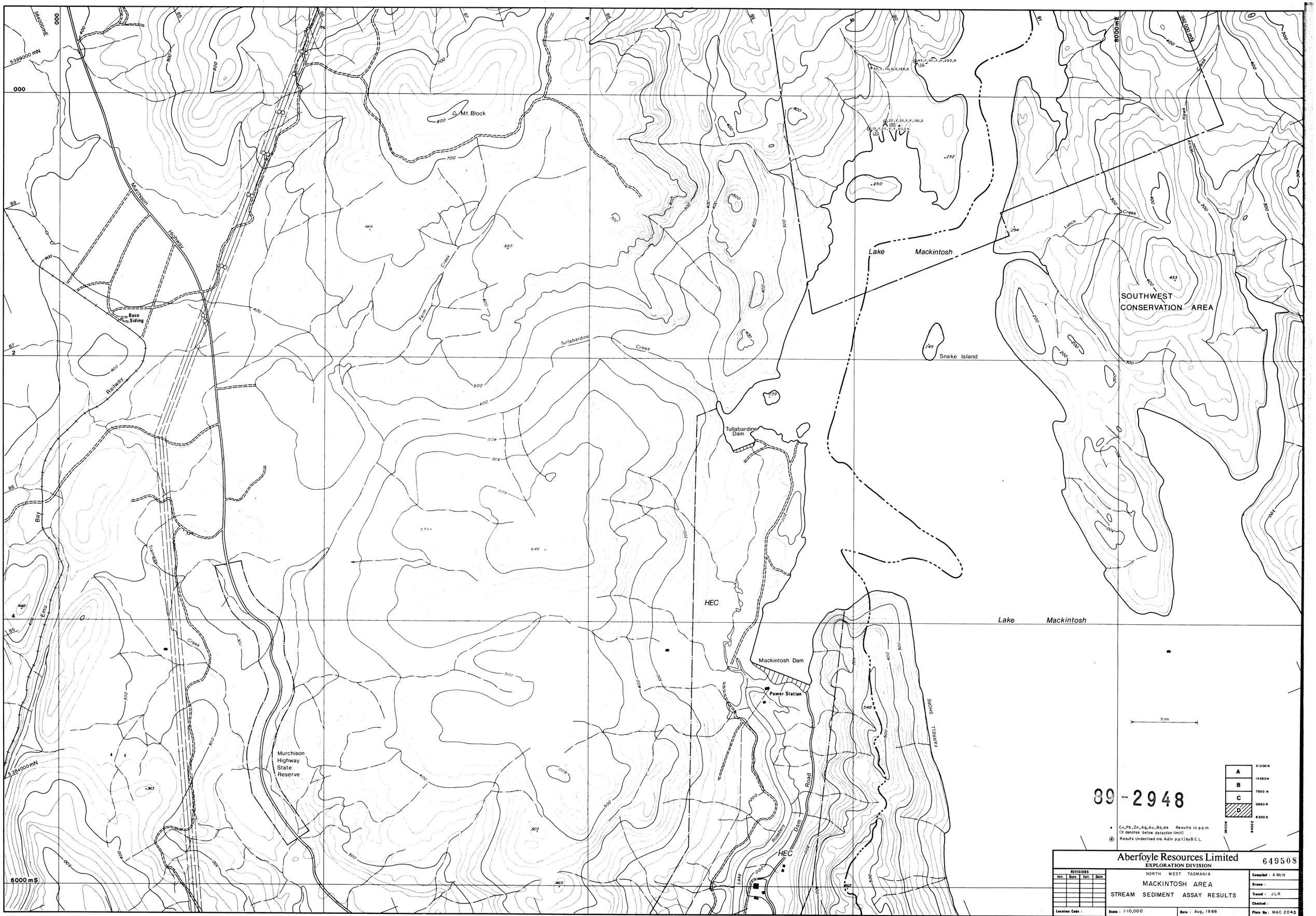
Aberfoyle Resources Limited
EXPLORATION DIVISION
649505
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT ASSAY RESULTS
REVISIONS
Init. Date Init. Date
Location Code :
Scale : 1:10,000
Date : Aug, 1988
Compiled : AMcN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 204A
Cu, Pb, Zn, Ag, Au, Ba, As Results in p.p.m.
(X denotes below detection limit)
5 cm
A 21200 N
B 14350 N
C 7500 N
D 0650 N
6200 S
3000 W
3000 E
20000mE
8000mE
5408000mN
20000mN
16000mN
5403000mN
Moory Road
Hellyer River
Painter Road
Middlesex Road
Lower River
Racecourse Road
Hatfield River
Hatfield River
Mid West
15,10,40,X,X,380,8
20,25,80,X,X,630,4
25,5,70,X,X,470,9
25,20,50,X,X,480,4
25,15,30,1,X,40,2
45,10,35,X,X,55,3
20,5,30,X,X,190,2
50,5,110,X,X,560,5
15,10,20,X,X,140,3
5,X,40,1,X,430,3
25,15,150,X,X,25,3

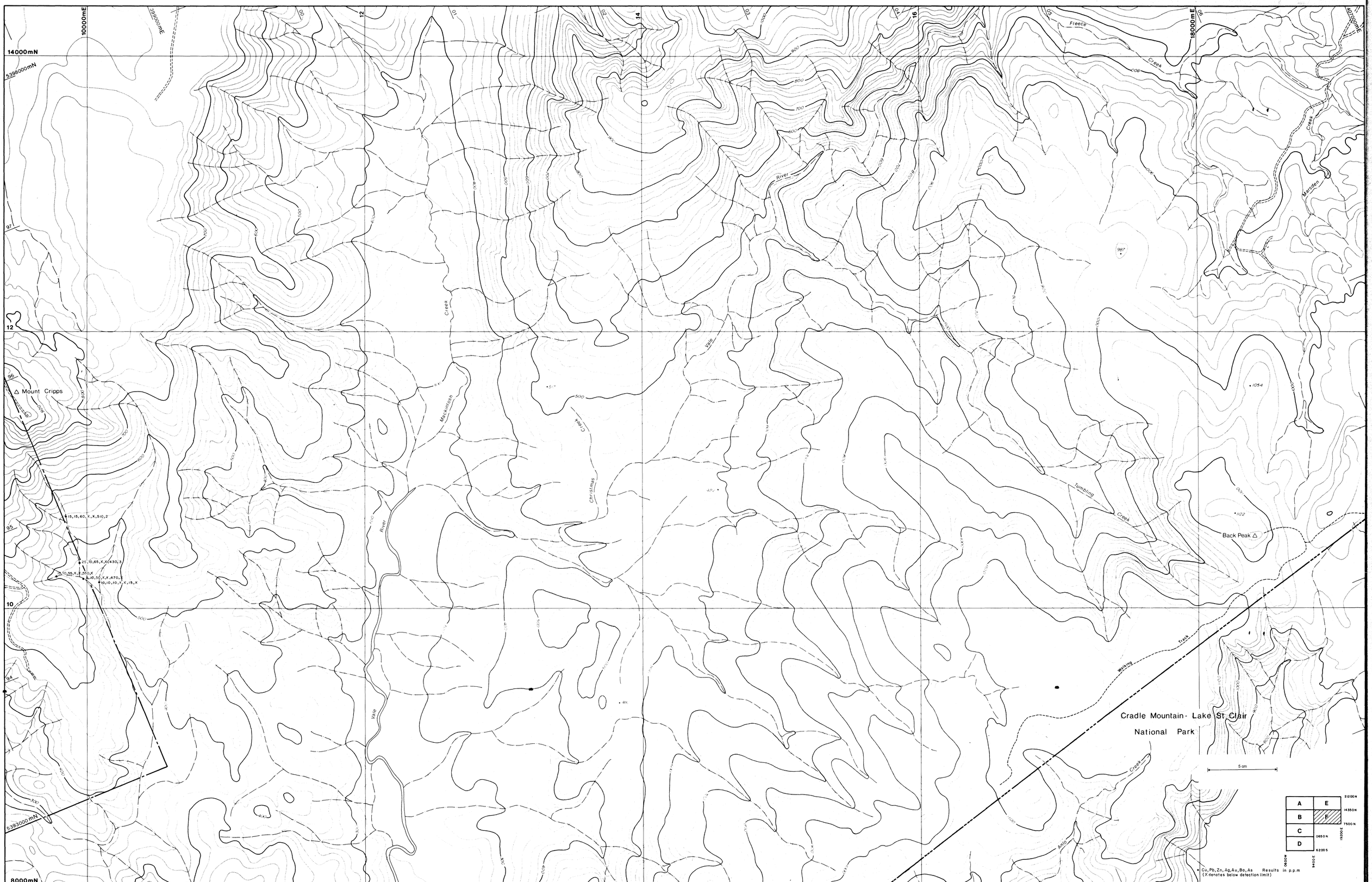

A.F.H. Boundary
Cradle Mountain Link Road
Murchison Highway
Que River
Southwell River
Hellyer Portal
Que River Mine
CML 28M/88
CML 69M/84
14 000 mN
8 000 mN
5401 000 mN
5396 000 mN
388 000 mE
389 000 mE
Cu, Pb, Zn, Ag, Au, Ba, As Results in p.p.m
(X denotes below detection limit)
5 cm
Aberfoyle Resources Limited
EXPLORATION DIVISION
649506
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT ASSAY RESULTS
REVISIONS
Location Code:
Scale: 1:10 000
Date: Aug, 1988
Compiled: A McN
Drawn:
Traced: JLR
Checked:
Plate No: MAC 204 B

8160


Mine Access Road
Que River Portal
Murchison Highway
Mt. Charter
The Shark's Fin
Mackintosh Lake
CMT. MM #1
387000 mE
395000 mE
8000 mE
5395000 mN
5390000 mN
8000 mN
2000 mN
5 cm
Cu, Pb, Zn, Ag, Au, Ba, As Results in p.p.m
(X denotes below detection limit)
Results Underlined are Au (in p.p.t.) by B.C.L.
Aberfoyle Resources Limited
EXPLORATION DIVISION
649507
REVISIONS
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT ASSAY RESULTS
Compiled: AMcN
Drawn:
Traced: JLR
Checked:
Location Code:
Scale: 1:10,000
Date: Aug, 1988
Plate No: MAC 204 C

8161


384000mE
5389000 mN
000
Mt. Block
Murchison
Highway
Boco
Siding
Railway
Bay
Emu
Creek
Tullabardine
Creek
Lake
Mackintosh
SOUTHWEST
CONSERVATION AREA
Snake Island
Tullabardine
Dam
HEC
Lake
Mackintosh
Mackintosh Dam
Power Station
Murchison
Highway
State
Reserve
FARRELL
SHORE
Road
Dam
Lake
5 cm
6000 mS
5384000mN
392000mN
8000mE
89-2948
A
B
C
D
21200 N
14350N
7500 N
0850 N
6200 S
0400E
0800E
Cu, Pb, Zn, Ag, Au, Ba, As Results in p.p.m.
(X denotes below detection limit)
Results Underlined are Au(in p.p.t.) by B.C.L.
Aberfoyle Resources Limited
EXPLORATION DIVISION
649508
REVISIONS
Init. Date Init. Date
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT ASSAY RESULTS
Location Code :
Scale : 1:10,000
Date : Aug, 1988
Compiled : A McN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 204D


14000mN
5398000mN
10000mE
18000mE
Fleece
Creek
Marsden
Creek
River
Vale
Mackintosh
Creek
Christmas
River
Vale
Tumbling
Creek
Back Peak
Walking
Track
Cradle Mountain- Lake St Clair
National Park
Anto
Creek
Mount Cripps
Mount Remus
5393000mN
8000mN
5 cm
A
B
C
D
E
F
21200N
14350N
7500N
0650N
6200S
19300E
9400E
0650W
Cu, Pb, Zn, Ag, Au, Ba, As Results in p.p.m
(X denotes below detection limit)
Aberfoyle Resources Limited
EXPLORATION DIVISION
649509
REVISIONS
Init. Date Init. Date
Location Code :
NORTH WEST TASMANIA
MACKINTOSH AREA
STREAM SEDIMENT ASSAY RESULTS
Scale : 1:10,000
Date : Aug, 1988
Compiled : A McN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 204F

8163

Aberfoyle Resources Limited

EXPLORATION DIVISION

649510

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

NORTH WEST TASMANIA

MACKINTOSH E.L. 106 / 87

MEDWAY AREA

ROCK CHIP GEOCHEMISTRY

Scale : 1:10,000

Date : September, 1988

Compiled : AMcN

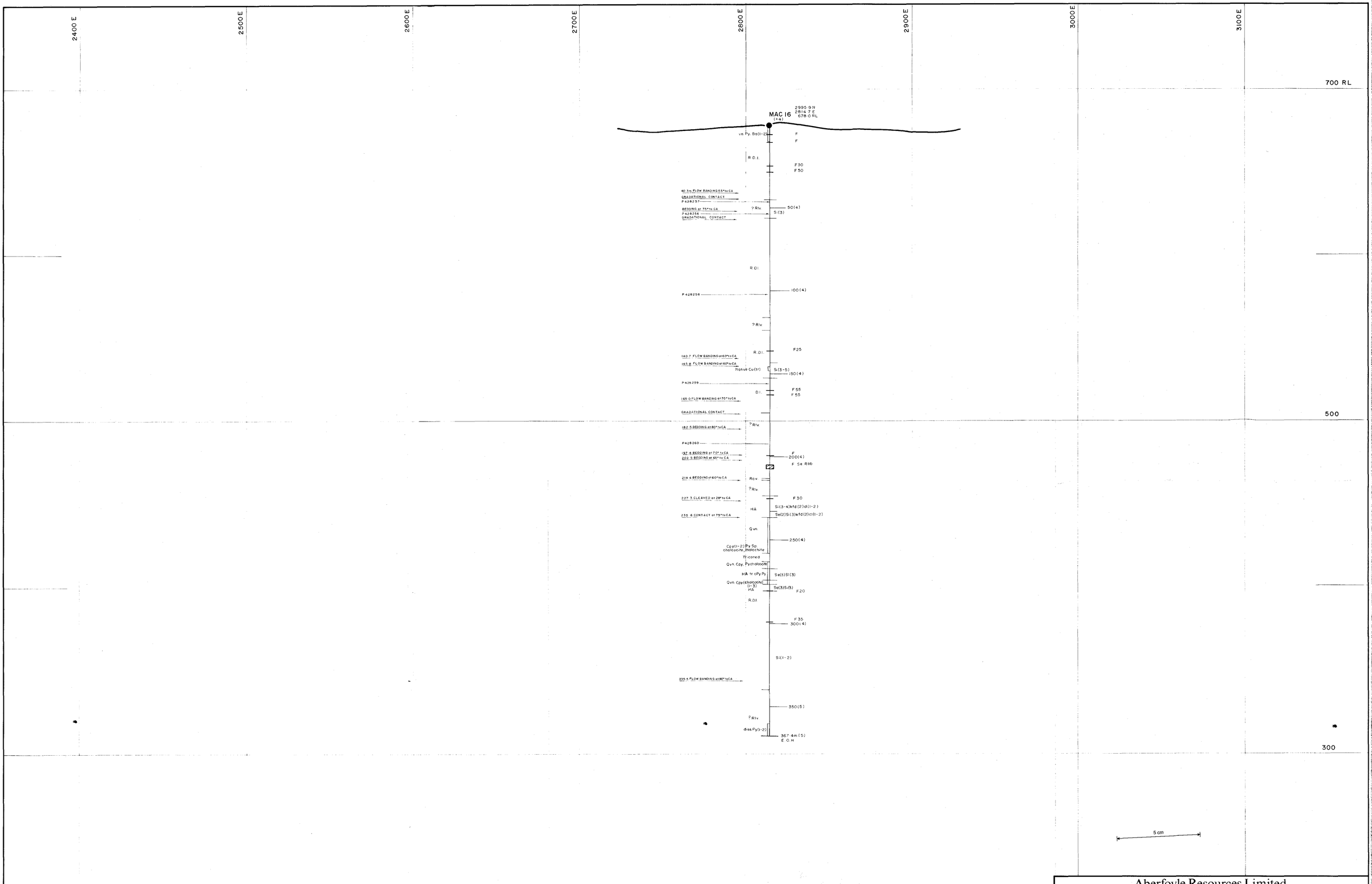
Drawn : JLR

Traced : JLR

Checked :

Plate No : MAC 209A

8164



Aberfoyle Resources Limited

EXPLORATION DIVISION

649511

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

NORTH WEST TASMANIA

MACKINTOSH E.L. 106/87

SECTION 3000N

DDH - MAC - D - 016

Scale : 1:1000

Date : July, 1988

Compiled : A Mc N

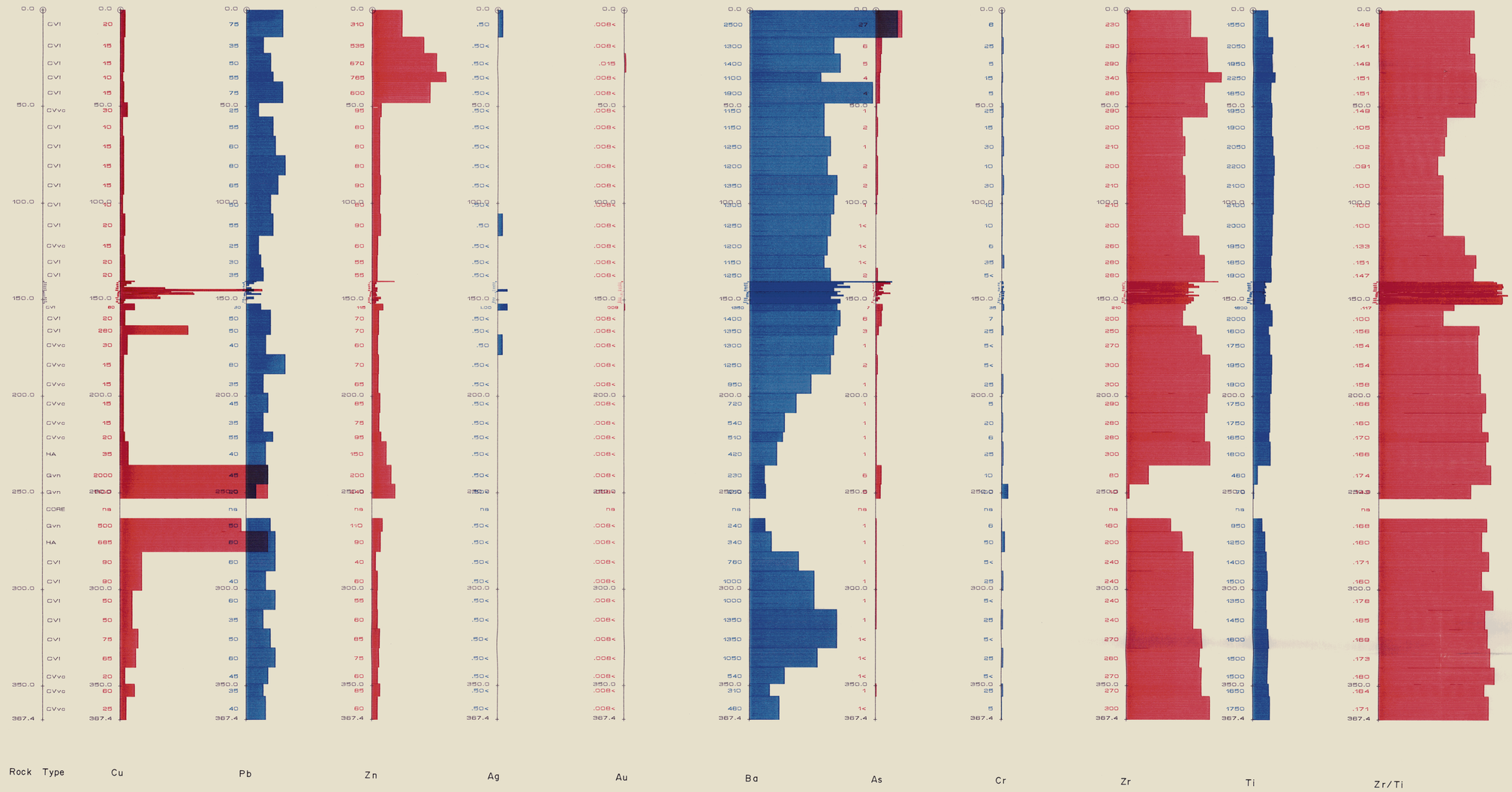
Drawn : A Mc N

Traced : JLR

Checked :

Plate No : MAC 200

8165



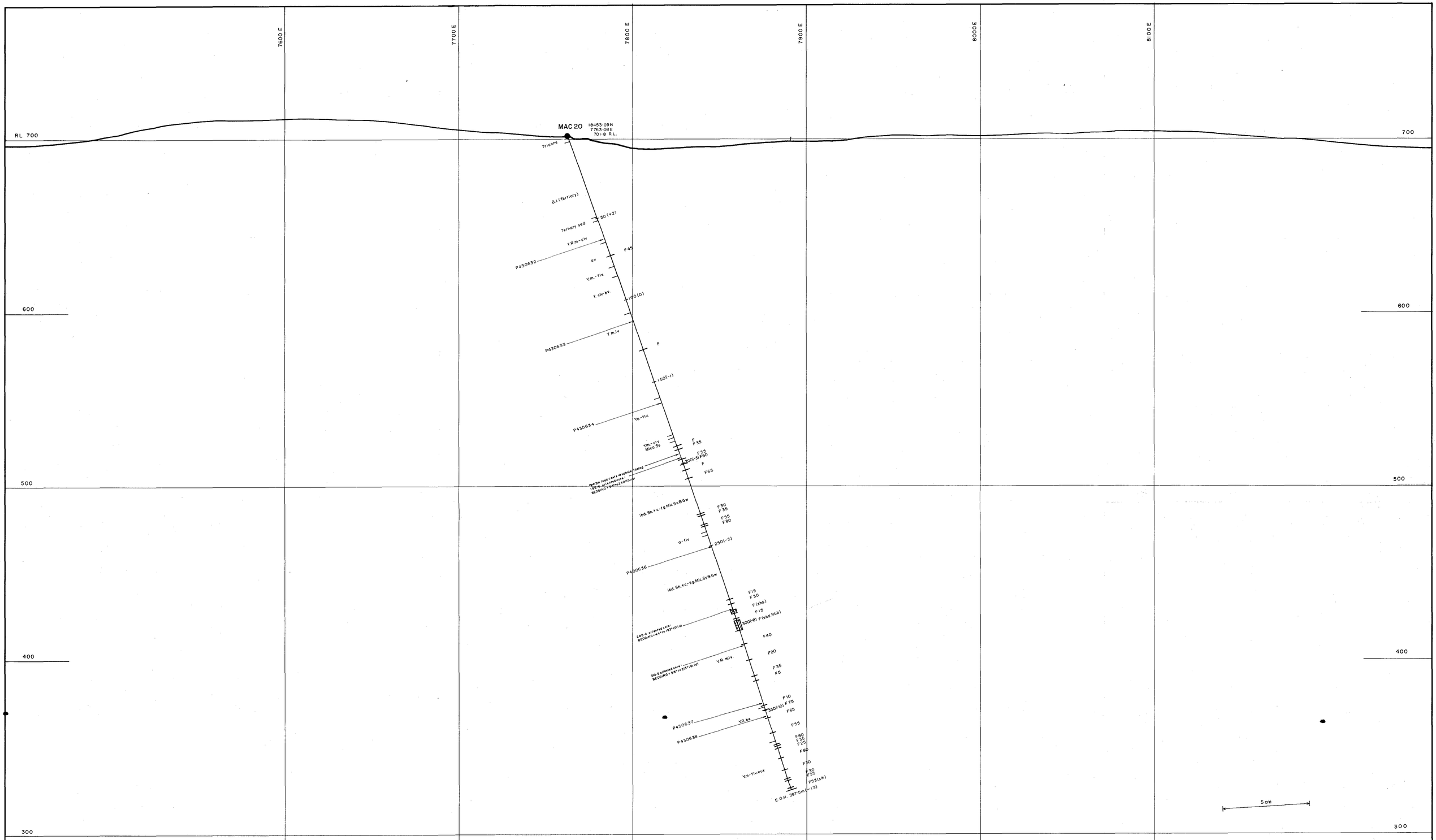
5 cm

649512

SCALE 1: 1000	Aberfoyle Expl. P.L.
DRAWN rdb	SECTION : MAC 16
CHECKED	
DESIGNED	DRAWING No. MAC 200 A
DESIGN CKD	
DESIGN APP	REVISION 22 MAR., 1989
PROJECT APP	

89-2948

8169



649513

89-2948

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

MACKINTOSH E.L. 106/87

SECTION 18450N

DDH-MAC-20

Location Code :

Scale : 1:1000

Date : January, 1989

Compiled : AMcN

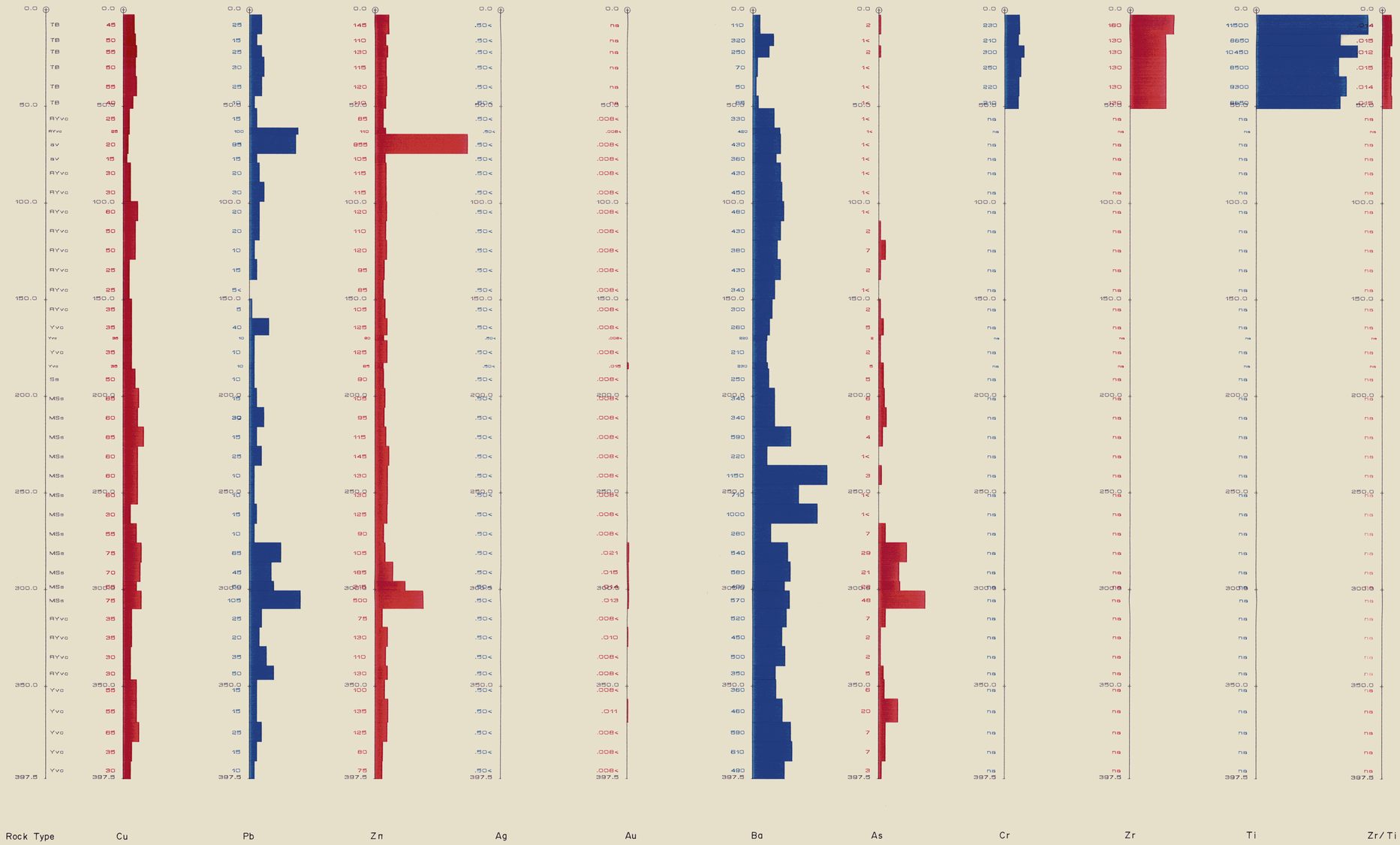
Drawn :

Traced : JLR

Checked :

Plate No : MAC 223

8167



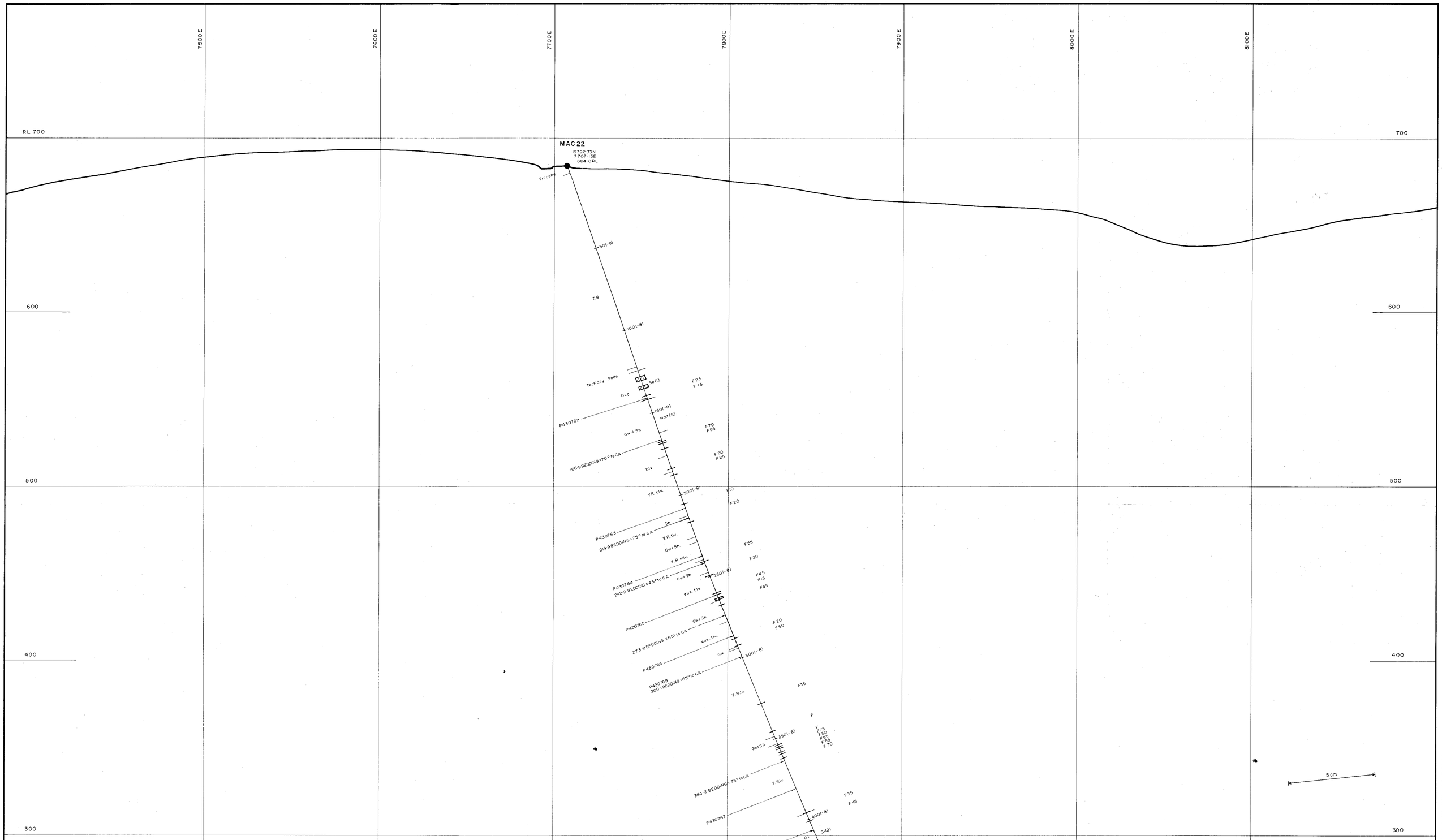
5 cm

649514

SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : MAC 20
CHECKED		
DESIGNED		DRAWING No. MAC 223A
DESIGN CKD		
DESIGN APP		REVISION 22 MAR., 1989
PROJECT APP		

89-2948

8168



81 72 1/2

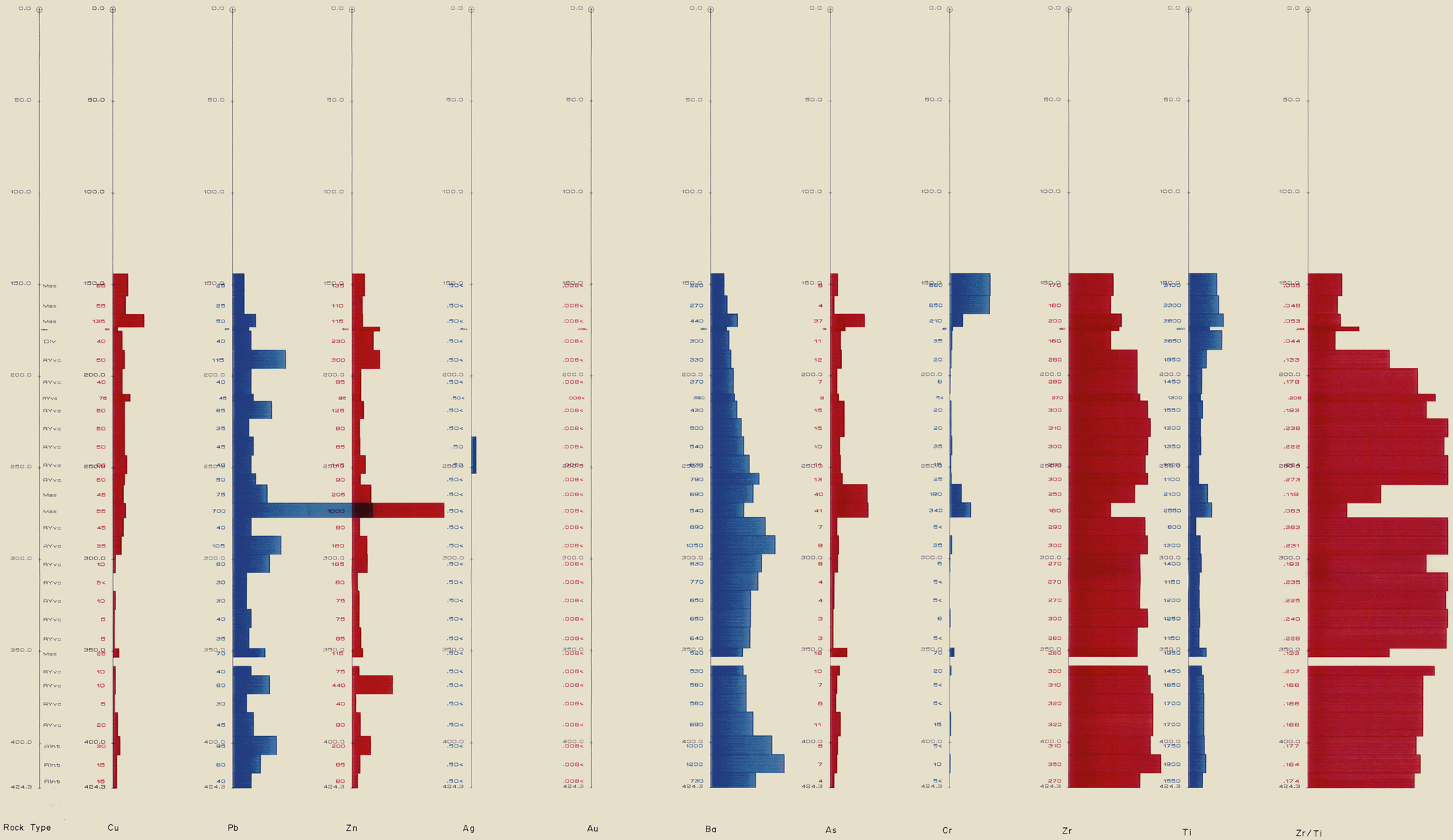
89-2948

649515

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS					
Init.	Date	Init.	Date	NORTH WEST TASMANIA	Compiled : AMcN
				MACKINTOSH E.L. 106 / 87	Drawn :
				SECTION 19400N	Traced : JLR
				DDH- MAC- 22	Checked :
Location Code :				Scale : 1:1000 / Date : January, 1989	Plate No : MAC 225



5 cm

649516

SCALE 1: 1000	Aberfoyle Expl. P.L.
DRAWN ADB	SECTION : MAC 22
CHECKED	
DESIGNED	DRAWING No. MAC 225 A
DESIGN CKD	
DESIGN APP	REVISION 22 MAR., 1989
PROJECT APP	

8170

89-2948

649517

5cm

SEE PLATE No. HT37a FOR LEGEND

Aberfoyle Exploration Pty Ltd

Geology: A.M.H.
Drawn:
Traced: J.L.R.
Checked:
Revised by: J.L.R. Date: 8-2-89

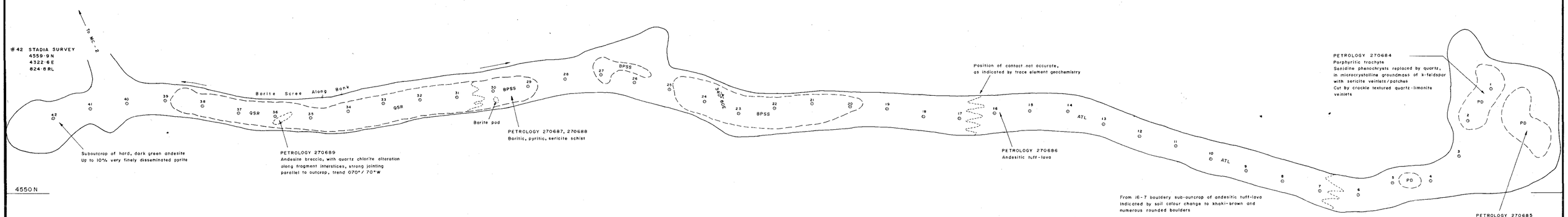
Location code:
Date: January, 1984
Scale: 1:250
Plate No. HT 37d

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
MT. CHARTER AREA
COSTEAN 4550N/4400E

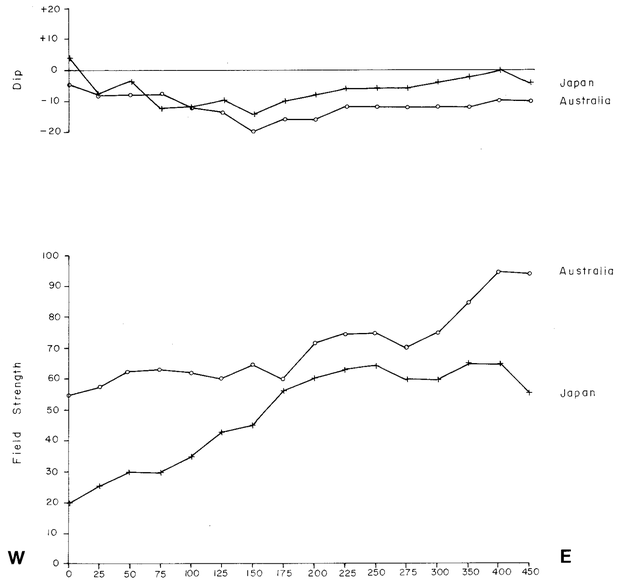
5m weath. bedrock channel sample or 5m rock chip sample (ppm)

	265842	265841	265840	265839	265838	265837	265631	265630	265629	265628	265627	265626	265625	265624	265623
Ba	3·12%	8590	2·29%	9280	8000	4100		3·01%	2·47%	2·28%	1·12%	2·6%	9660	2·77%	7430
As	4650	2050	1850	1200	1350	1150		1200	400	360	1050	1250	1450	350	200
Ag	5	1	0·5	–	–	–		5	8	1	3·5	6	1	1	–
Zn	245	145	165	170	120	160		145	100	65	95	75	80	100	70
Pb	435	480	680	385	265	560		490	365	315	420	1045	470	185	285
Cu	140	80	60	55	50	75		100	50	30	60	40	60	45	15
Au								0·201	0·274	0·146	0·069	0·097	0·181	0·116	0·045

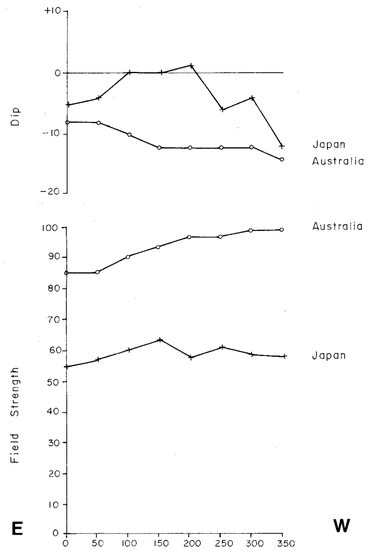
	265622	265621	265620	265619	265618	265617	265616	265615	265614	265613	265612	265611	265610	265609	265608	265607	265606	265605	265604	265603	265602	265601
Ba	1·13%	4·38%	11·4%	24·2%	17·4%	28·7%	14·7%	13·8%	10·8%	7·83%	1·58%	2·42%	8160	1950	3131	1·02%	6020	1520	1200	928	1010	1648
As	330	290	480	370	1850	1350	1300	2400	3350	1450	260	61	290	48	39	67	46	36	24	86	34	24
Ag	5	8·5	10	15	21	22	43	49	25	8·5	–	–	–	–	–	–	–	–	–	–	–	–
Zn	80	110	125	125	115	125	185	245	250	210	230	240	185	150	170	190	155	55	40	30	35	30
Pb	375	380	430	925	1575	1325	2000	1525	1575	730	475	80	645	110	120	140	80	40	20	35	35	30
Cu	55	80	100	50	95	50	90	75	100	55	40	35	45	15	20	65	15	10	5	10	10	5
Au	0·197	0·193	0·307	0·657	0·795	1·010	1·080	0·681	0·688	0·544	0·119	0·126										



LINE 1



LINE 2



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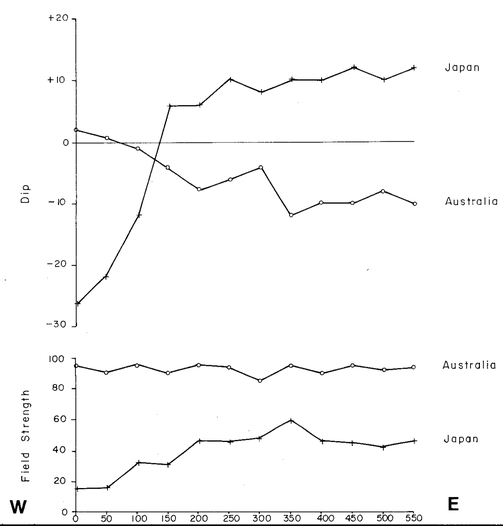
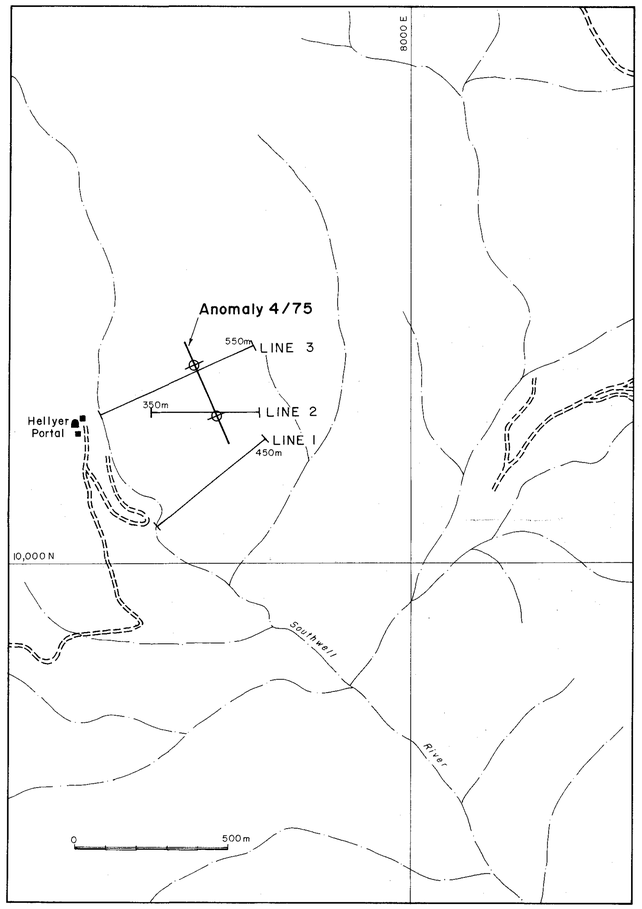


LOCATION PLAN



649518

5 cm

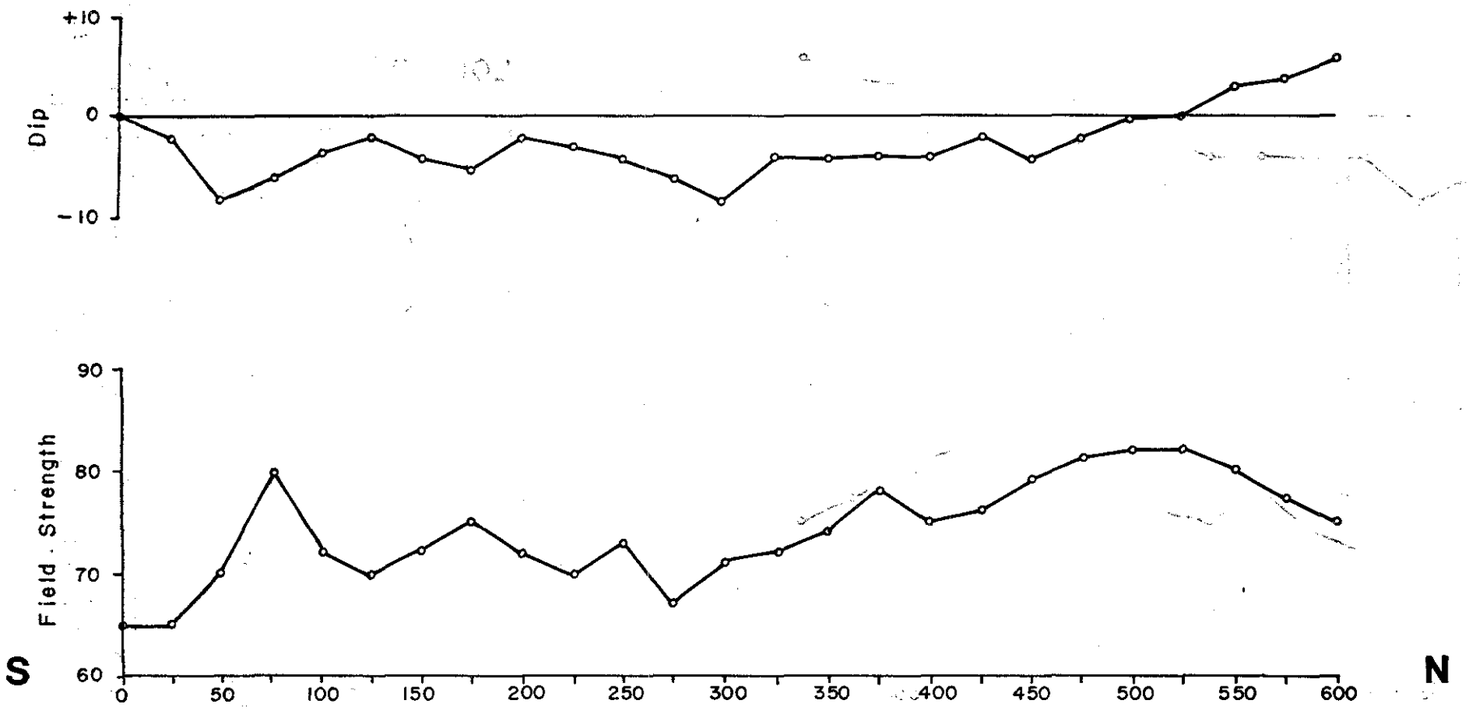
89-2948

Aberfoyle Resources Limited
EXPLORATION DIVISION

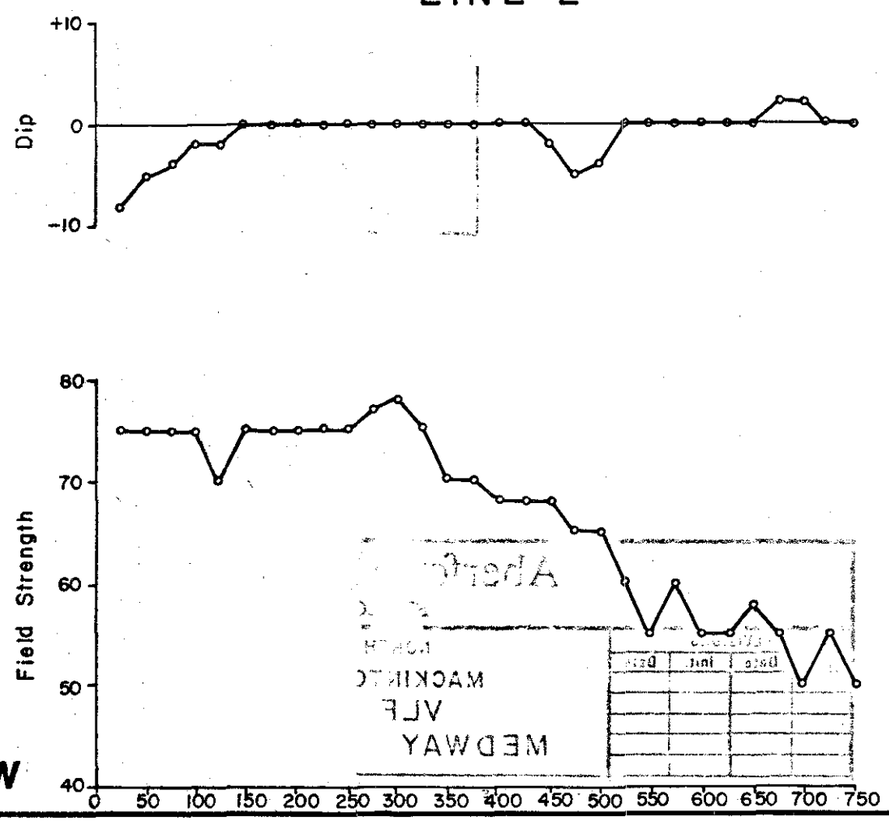
REVISIONS					
Init.	Date	Init.	Date	NORTH WEST TASMANIA MACKINTOSH E.L.106/87 VLF SURVEY SOUTHWELL RIVER AREA	Compiled : A McN Drawn : JLR Traced : JLR Checked :
Location Code :				Scale : As shown / Date : March, 1989	Plate No : MAC 232

8171

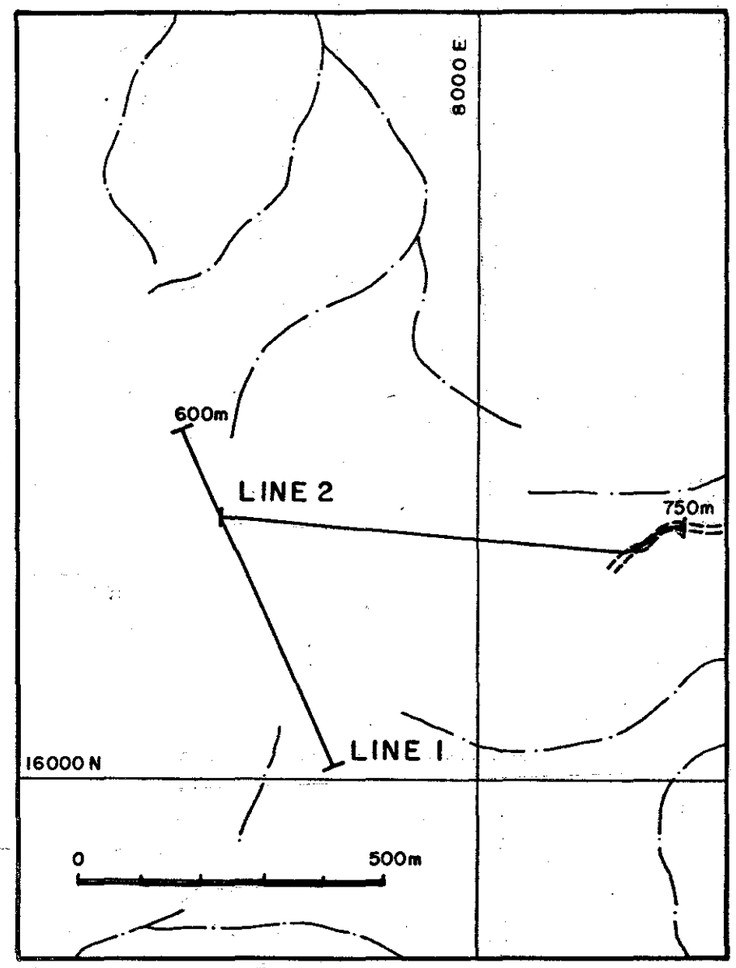
LINE 1



LINE 2



LOCATION PLAN



5 cm

89-2948

Aberfoyle Resources Limited

EXPLORATION DIVISION

649519

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

MACKINTOSH E.L. 106 / 87

VLF SURVEY

MEDWAY RIVER AREA

Scale : As shown

Date : March, 1989

Compiled : AMcN

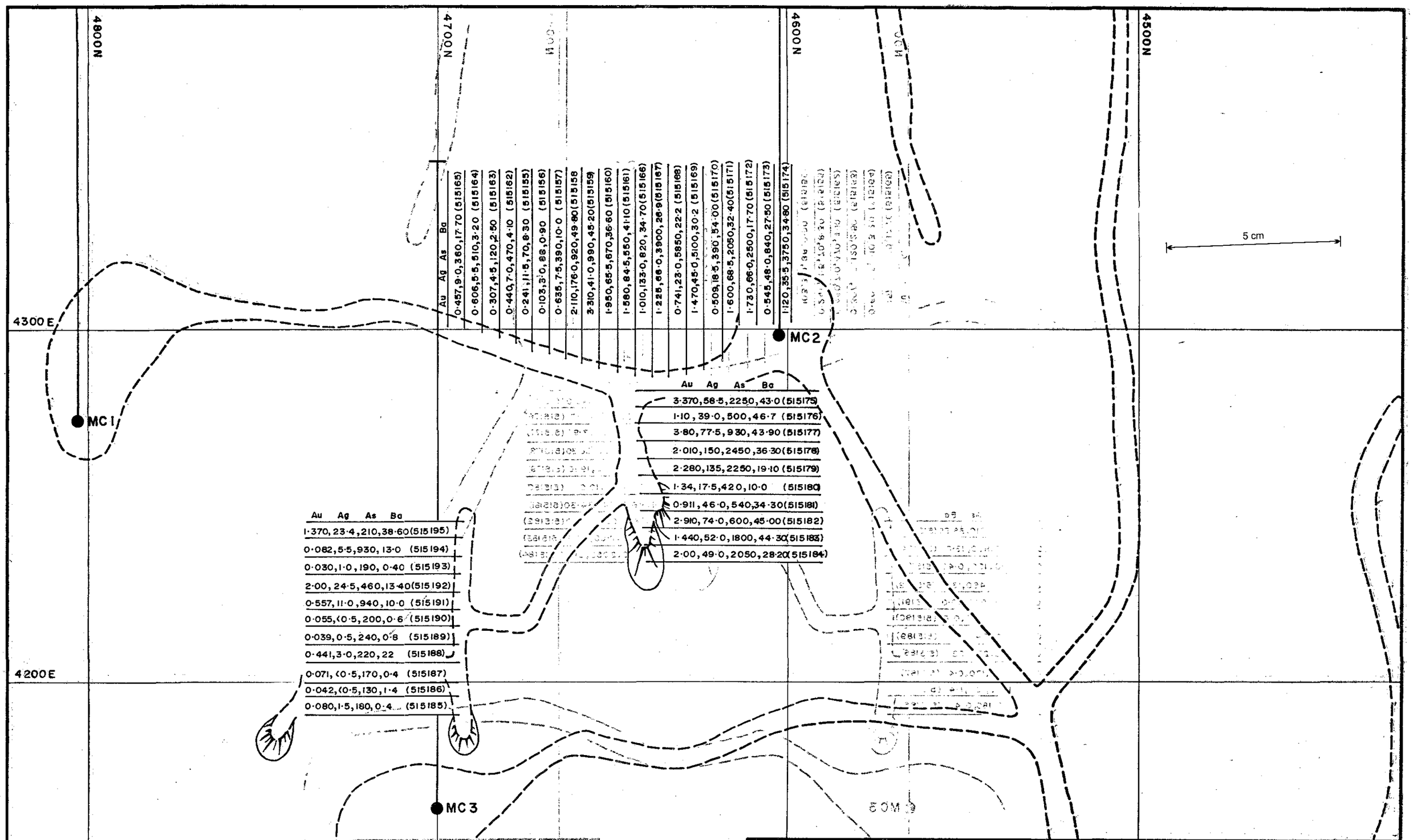
Drawn : AMcN

Traced : JLR

Checked :

Plate No. : MAC 233

8172



Aberfoyle Resources Limited

EXPLORATION DIVISION

649520

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

MACKINTOSH E.L. 106 / 87

MT. CHARTER MASSIVE BARITE ROCK CHIPS (5m Intervals)

Scale : 1:1000

Date : March, 1989

Compiled : SWR

Drawn :

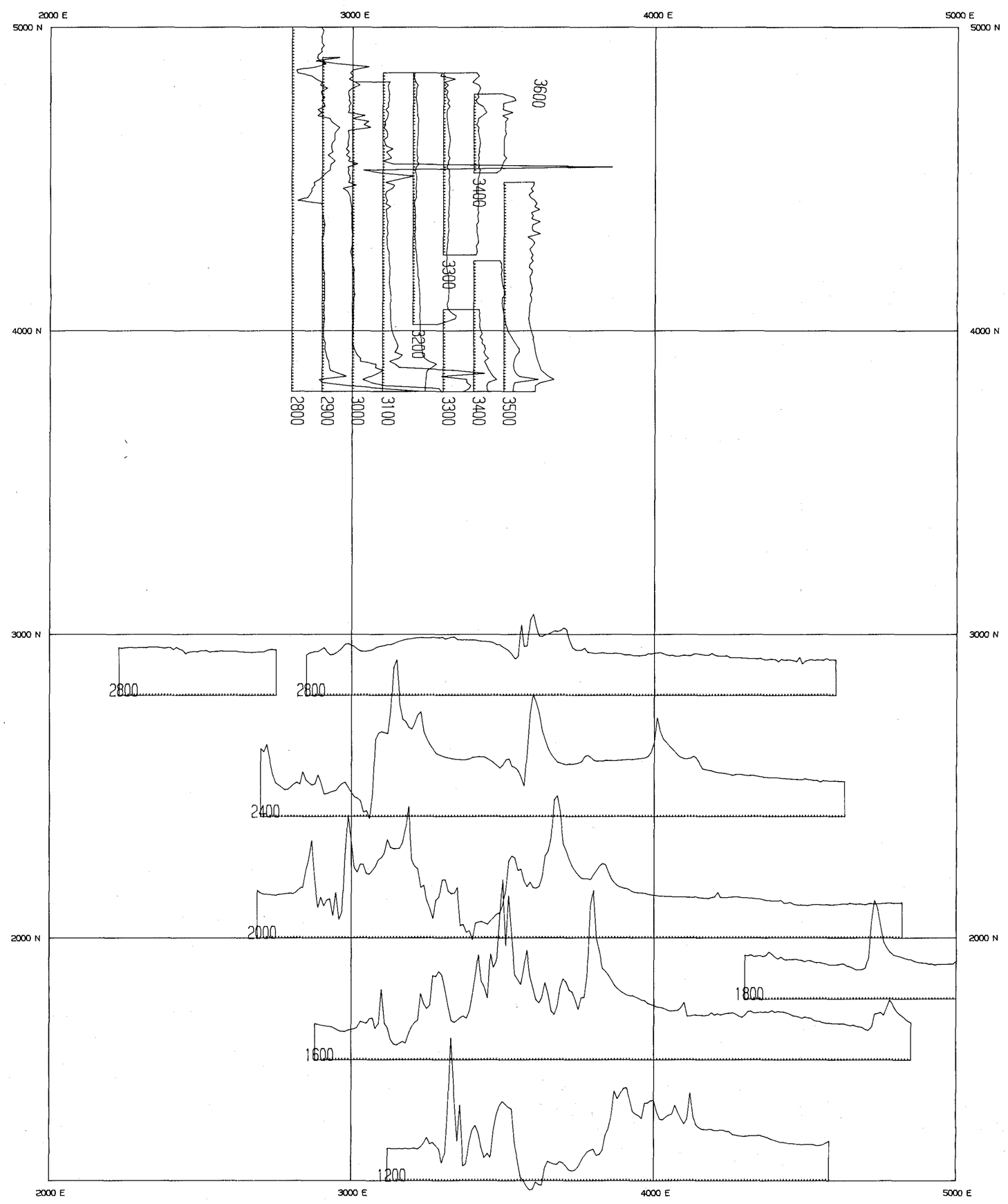
Traced : JLR

Checked :

Plate No. : MAC 234

89-2948

8173



Vertical Scale 70 nT/cm

Base Level 50 nT

5 cm

200 0 200 400 600 metres

AUSTRALIAN MAP GRID

649521

89-2948

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS					
Init.	Date	Init.	Date	TAS. Tasmania	Compiled: JJr
					Drawn: Apollo
				Mackintosh (South Hatfield)	Traced:
				Ground Magnetic Profiles	Checked: JJr
Location Code:				Scale: 1:10,000 / Date: March 1989	Plate No: Mac 235

8174