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EXPLORATION LICENCE 15/73 HATFIELD

TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

JUNE 1986 - FEBRUARY 1988

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CONTENTS Page No:

1.		Summary	1
2.		Introduction	2
3.		Tailings Dam	3
	3.1	Introduction	3
	3.2	Geology	3
	3.3	Geochemistry	4
	3.4	Geophysics	4
	3.5	Diamond Drilling	5
	3.6	Summary and Recommendations	9
4.		Old Mill Site	10
	4.1	Introduction	10
	4.2	Diamond Drilling	10
	4.3	Summary and Recommendations	14
5.		I_1 Zone	15
	5.1	Introduction	15
	5.2	Geology/Geochemistry	15
	5.3	Diamond Drilling	15
	5.4	Summary and Recommendations	17
6.		Mount Charter Dolerite	18
	6.1	Introduction	18
	6.2	Geology	18
	6.3	Geochemistry	18
	6.4	Geophysics	18
	6.5	Diamond Drilling	18
	6.6	Summary and Recommendations	20
7.		South Mount Charter	21
	7.1	Introduction	21
	7.2	Diamond Drilling	21
	7.3	Summary	26
8.		S.W. Mount Charter	27
	8.1	Introduction	27
	8.2	Diamond Drilling	27
	8.3	Summary and Recommendations	28
9.		South Hatfield	29
	9.1	Introduction	29
	9.2	Geology	29
	9.3	Geochemistry	29
	9.4	Geophysics	30
	9.5	Summary and Recommendations	31
		References	32

PLATES (Volume 4)

Plate No:	Scale	Title
MAC114	N/S	Surface geological mapping legend.
MAC115	N/S	Geological legend 1:1000 scale DDH Sections.
HT47d	1:250	UTEM Zone I_1 - Costean 5700N.
HT47e	1:250	UTEM Zone I_1 - Costean 5800N.
HT47g	1:250	4300N/3200E costean.
HAT82	1:250	UTEM Zone I_1 - Costean 5600N.
HAT83	1:1000	Cross Section DDH HAT-6 - 7200N.
HAT83A	1:1000	DDH HAT-6 - Core grind geochemistry.
HAT84	1:1000	Cross Section DDH MC-14, 3000E.
HAT84A	1:1000	DDH MC-14 - Core grind geochemistry.
HAT87	1:1000	DDH MC-15 - Section on collar azimuth, looking grid NE.
HAT87A	1:1000	DDH MC-15 - Core grind geochemistry.
HAT88	1:1000	DDH MC-17 - Section on collar azimuth, looking grid NE.
HAT88A	1:1000	DDH MC-17 - Core grind geochemistry.
HAT90	1:1000	Cross Section DDH HAT-7, 5750N.
HAT90A	1:1000	DDH HAT-7 - Core grind geochemistry.
HAT91	1:1000	Cross Section DDH HAT-8, 6700N.
HAT91A	1:1000	DDH HAT-8 - Core grind geochemistry.
HAT92	1:1000	Cross section DDH HAT-9, 10200N.
HAT92A	1:1000	DDH HAT-9 - Core grind geochemistry.
HT94B	1:10000	EL 15/73 Exploration activity 1986-1988.
HT94C	1:10000	EL 15/73 Exploration activity 1986-1988.
HAT96	1:10000	Ground Magnetics - Tailings Dam
HAT97	1:10000	Ground Magnetics - South Hatfield
MAC89 BB	1:2500	Outcrop geology.
MAC89 CC	1:2500	Outcrop geology.
MAC89 MM	1:2500	Outcrop geology.
MAC89 NN	1:2500	Outcrop geology.
MAC89 UU	1:2500	Outcrop geology.
MAC89 YY	1:2500	Outcrop geology.
MAC89 ZZ	1:2500	Outcrop geology.
MAC113B	1:10000	UTEM and EM-37 coverage.
MAC113C	1:10000	UTEM and EM-37 coverage.
MAC162	1:1000	Cross section DDH MAC-10, 10650N.
MAC162A	1:1000	DDH MAC-10 Core grind geochemistry.
MAC207	1:1000	Section on 250° grid DDH MC-19.
MAC207A	1:1000	DDH MC-19 - Core grind geochemistry.

FIGURES

1. Hatfield EL 15/73 location plan.
2. 1:10,000 interpreted geology - Tailings Dam area.
3. Schematic geological section - Tailings Dam area.
4. DDH MAC-10 - brecciated dacitic intrusive (396704).
5. DDH HAT-9 - HVS equivalent (378362).
6. DDH HAT-9 - Altered andesitic? lava (378365).
7. DDH HAT-6 - ?Epidote altered basalt (383627).
8. DDH HAT-8 - Polymict volcaniclastic (379383).
9. DDH MC-15 - Basal polymict volcaniclastic (379360).
10. Boundary Quarry North Bank - geology.

APPENDICES (Volume 1 to 3)

1. Tailings Dam, petrology report.
2. Tailings Dam, assay results and sample locations - "C" horizon soils.
3. Tailings Dam, assay results and sample locations - rock chip.
4. E.L. 15/73 UTEM surveys, May 1986 - February 1988.
5. Tailings Dam, DDH MAC-10, detailed log, petrology report and split core geochemistry.
6. Tailings Dam, DDH MAC-10, core grind geochemistry.
7. DHEM surveys - Hatfield EL 15/73, 1986-1988.
8. Tailings Dam, DDH HAT-9, detailed log, petrology report and split core geochemistry.
9. Tailings Dam, DDH HAT-9, core grind geochemistry.
10. Old Mill Site, DDH HAT-6, detailed log, petrology report and split core geochemistry.
11. Old Mill Site, DDH HAT-6, core grind geochemistry.
12. Old Mill Site, DDH HAT-8, detailed log, petrology report and split core geochemistry.
13. Old Mill Site, DDH HAT-8, core grind geochemistry.
14. I_1 Zone, petrology report and rock chip and "C" horizon soil assay results and sample locations.
15. I_1 Zone, DDH HAT-7, detailed log, petrographic report and split core geochemistry.
16. I_1 Zone, DDH HAT-7, core grind geochemistry.
17. Mount Charter Dolerite, petrology report.
18. Mount Charter Dolerite, assay results - "C" horizon soils.
19. Mount Charter Dolerite, assay results - rock chip.
20. Mount Charter Dolerite, DDH MC-14, detailed log, petrology report and split core geochemistry.
21. Mount Charter Dolerite, DDH MC-14, core grind geochemistry.
22. South Mount Charter, DDH MC-15, detailed log, petrology report and split core geochemistry.
23. South Mount Charter, DDH MC-15, core grind geochemistry.
24. South Mount Charter, DDH MC-17, detailed log, petrology report and split core geochemistry.
25. South Mount Charter, DDH MC-17, core grind geochemistry.
26. South Mount Charter, DDH MC-16, and MC-18, detailed logs, petrology report and split core geochemistry.
27. SW Mount Charter, DDH MC-19, detailed log, petrology report and split core geochemistry.
28. SW Mount Charter, DDH MC-19, core grind geochemistry.
29. South Hatfield, petrology reports.
30. South Hatfield, assay results and sample locations - "C" horizon soils.
31. South Hatfield, assay results and sample locations - rock chip.
32. South Hatfield, Pb isotope report.
33. Diamond drill core - magnetic susceptibility study. Mackintosh area, Tasmania.
34. Physical data tests - DDH MAC-10, MC-14, HAT-5.
35. 1:2500 - map sheet index and abbreviations for outcrop geology plans.

1. Summary

A total of 3680m of diamond drilling (including 952m by the Department of Mines and 529m on the adjacent EL 2/70) was completed during the period June 1986 - February 1988. Drill hole collars, line cutting and other exploration activities are summarised on plates (HAT94B and C). Results of this work include:

* 815m of diamond drilling, UTEM and soil sampling over an area to be sterilised by the proposed Hellyer tailings dam has failed to generate any targets worthy of follow-up, however, to the northwest a zone of alteration and coincident Pb, Zn soil anomaly in the Que River shale has not been tested by UTEM and warrants further work.

* 623m of diamond drilling to test major soil anomalies in a syncline (the old Mill Site prospect) WSW of the Que River Mine, indicate that the anomalies were sourced from Hellyer basalt equivalents. No potential ore position was intersected.

* A complex UTEM anomaly (I_1 Zone) was tested by 220m of drilling. Strong alteration and a polymict volcaniclastic (equivalent to the HVS ?) were intersected.

* A 529m drill hole tested the QHV beneath the Charter dolerite. No potential ore position or significant alteration was intersected.

* Drilling by the Mines Department (952m) and Aberfoyle (200m) has provided stratigraphic and structural data in the area of the Mount Charter fault.

* A 443m drill hole, designed to follow-up the mineralisation in DDH MC-9, failed to intersect the interpreted Hellyer ore position due to stratigraphic and/or structural complications. Further work in this area requires a more complete understanding of the geological setting.

* Central Complex volcanics south of the Mount Charter fault were surveyed with UTEM, mapped and soil sampled. No major targets were located but a small zone of "hanging-wall" style alteration occurs in an area of ineffective UTEM coverage and may warrant follow-up.

2. Introduction

The Hatfield Exploration licence 15/73 was pegged on May 5, 1973, by Cominco Exploration Pty. Ltd. (Figure 1). The licence was transferred to Abminco N.L. on April 1, 1978, to Cleveland Tin Limited on March 28, 1979 and most recently to Aberfoyle Resources Limited.

On 3 September, 1986 12 MLA'S (38-49 M/86) were pegged to cover areas affected by the proposed Hellyer development, of these 40 and 44-46 M/86 were granted as a result of the Hellyer Mine Agreement Ratification Act 1987 and consolidated to form part of CML 103M/87 on 1 February, 1988.
E.L. 15/73 was due to expire on June 25, 1988 but was incorporated, under the Hellyer Mine Agreement Ratification Act 1987, into E.L. 106/87 on February 5, 1988. No reduction in E.L. area was required during this period.

This report summarises exploration activity on the licence and MLA's during the period June 1986 to February 5, 1988. It should be noted that, as some prospect areas straddle the boundary between E.L.'s 15/73 and 2/70, these will be reported for the licence in which the majority of work was undertaken. Results of regional projects, involving work on both EL 15/73 and 2/70 have been summarised in (McNeill, 1989).

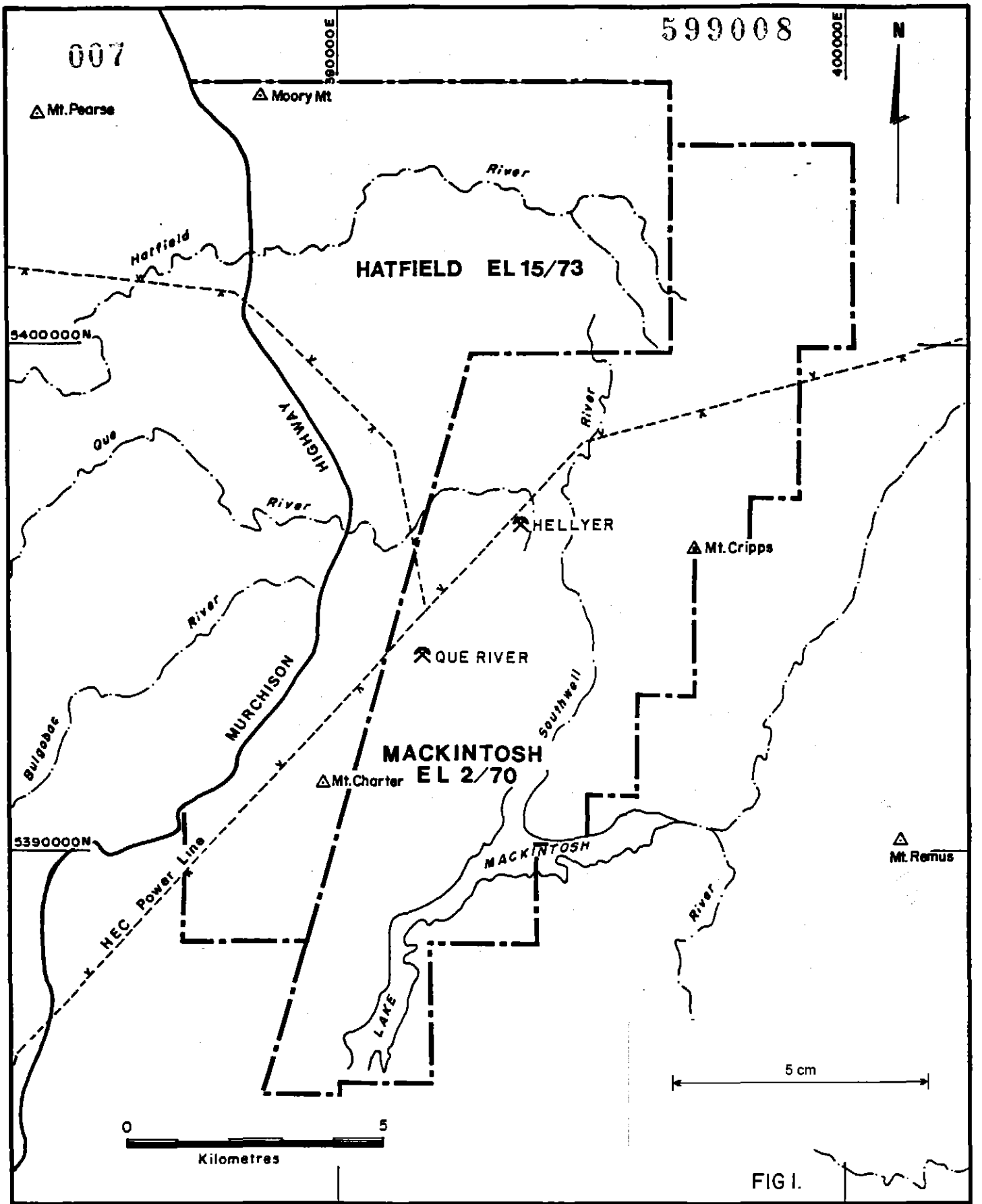


FIG I.

Aberfoyle Resources Limited

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REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

HATFIELD AREA

LOCATION PLAN

Compiled : AMcN

Drawn : JLR

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Location Code :

Scale : 1:100,000

Date : June, 1989

Plate No. : HT 93

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3. Tailings Dam

3.1 Introduction

A tailings dam proposed for the Hellyer mine development will innundate a large area, south of the Cradle Mountain link Road and around the Que River. Previous regional mapping indicated the area was dominantly underlain by flat lying Que River Shale and the Upper Rhyolitic Sequence. As these units were considered to have low prospectivity, no surface exploration had been undertaken. To assess the underlying QHV a condemnation programme of geological mapping, soil geochemistry, UTEM and drilling was completed.

3.2 Geology

Mapping at 1:2500 scale mapping is summarised on plates MAC 89 yy and zz (see plate MAC 114 for legend and Appendix 35 for map sheet location and geological abbreviations) and a 1:10,000 interpretation included as figure (2).

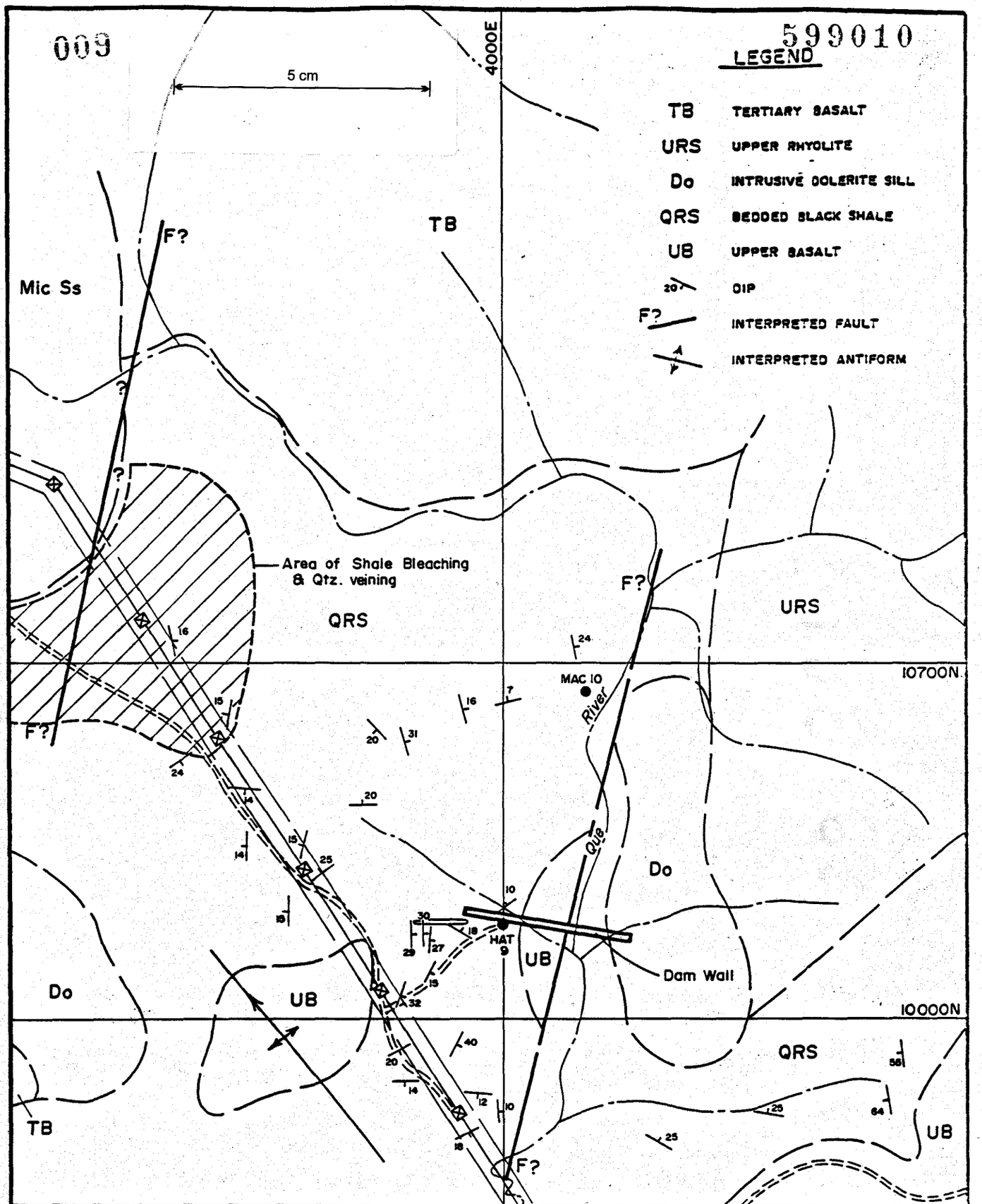
Outcrop is dominantly gently folded carbonaceous black shale (QRS) and rhyolitic volcaniclastics (URS) which conformably overly the QHV which are exposed at 10000N, 3600E in a NW trending anticlinal crest and at 10200N, 4100E due to uplift on an interpreted fault. Hangingwall Basalt is exposed in both windows. The two dolerite bodies are considered to be sills, although contact relationships are not exposed, (c.f. Mount Charter dolerite [Hespe 1986]) while flat lying highly vesicular Tertiary Basalt flows form topographic highs along the northern edge of the area.

Costeaning in the NW of this area indicates that the Mica Sandstone, lithologically similar to the basal mica sandstone (see Appendix 1) or the Animal Creek Greywacke of Collins (1981), underlies rather than overlies the QRS as had previously been interpreted. This situation may be explained by a model involving deposition of the QHV in a basin bounded by growth faults, with continuous deposition of Mica Standstone overwhelmed by rapid lava effusion and finally a change in style of sedimentation to deposit the QRS over both QHV and Mica Sandstone (Figure 3).

Bleaching of back shale and intense quartz veining, adjacent to the shale/sandstone contact, is similar to alteration in slate directly above Hellyer and may be related to hydrothermal activity focussed by the inferred growth faults. A petrographic study of the bleaching (Appendix 1) indicates it is related to hydrothermal destruction of carbonaceous matter adjacent to quartz veins.

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FIG. 2.

REVISIONS			
Init.	Date	Init.	Date
AMHgic	17-7-87		
AMHrje	31-8-87		

HELLYER FACILITIES EXPLORATION

PROPOSED TAILINGS DAM

GEOLOGY

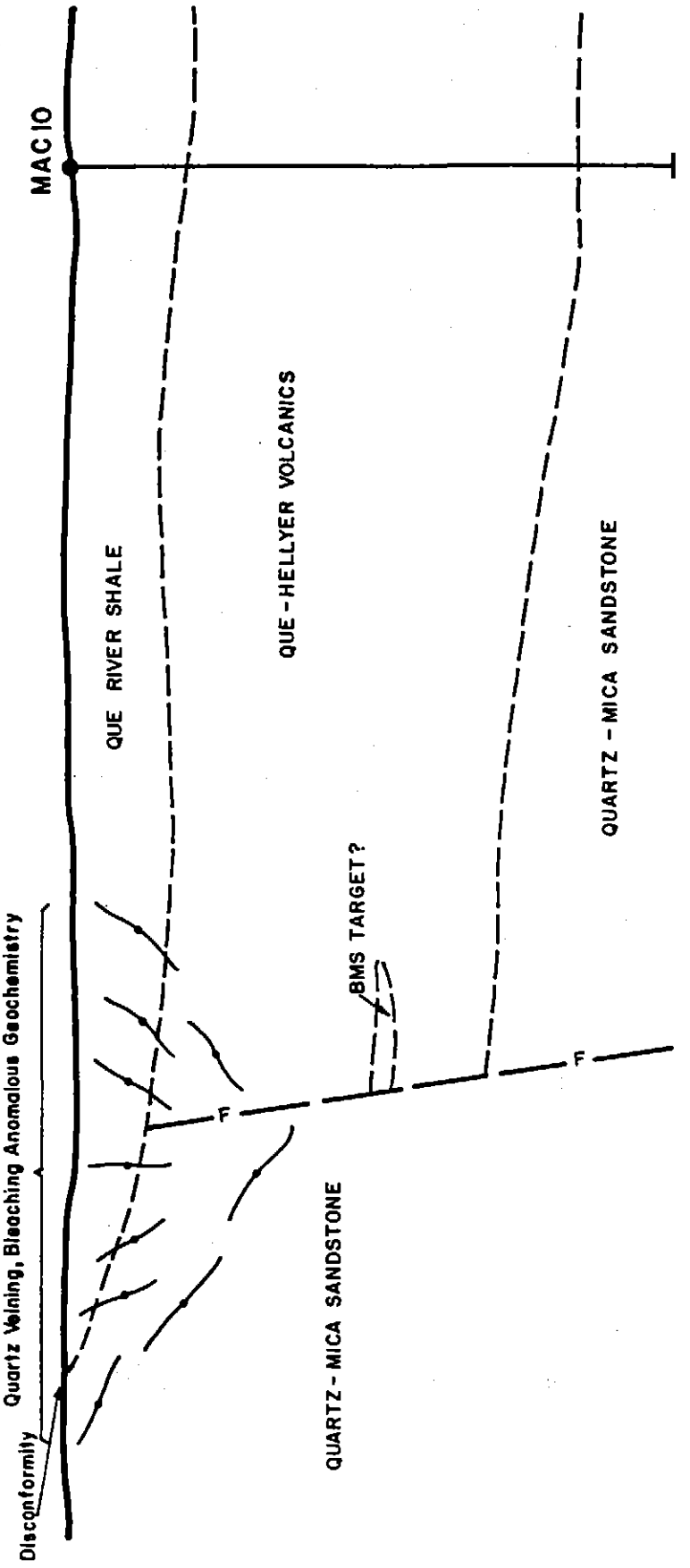
From mapping by AMH and DJJ

Compiled:	DJJ
Drawn:	DJJ
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Plate No.	HEL 84

Location Code: K55/6/44 | Scale: 1:10 000 | Date: June, 1987

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NORTH WEST TASMANIA

HATFIELD E.L. 15/73

SCHEMATIC SECTION – N.W. TAILINGS DAM

Compiled : AMcN

Drawn :

Traced : JLR

Checked :

Location Code :

Scale : As shown

Date : June, 1989

Plate No. : FIG 3

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3.3 Geochemistry

3.3.1 Soil Sampling

Initial sampling on 200m spaced lines, 10200N - 11000N, which was extended in the north western part of the grid by 100m spaced lines, from 10700N - 11200N, was aimed at detecting dispersion of ore elements into Hangingwall rocks. "C" horizon soil samples were collected by hand auger on a 12.5m spacing. A total of 452, 25m spaced samples were sieved to -80 # and analysed for Cu, Pb, Zn, Ba, As, Ag and Hg. Analytical results and sample locations are included as Appendix 2.

Two anomalous zones were defined, a Hg anomaly (maximum 195 ppb) on line 10200N and a coincident Pb, Zn, Hg (maximum, 430 ppm, 980 ppm and 245 ppb respectively) centred on 10900N, 3400E and roughly coincident with the zone of bleaching and quartz veining in sandstone and shale. High values in this zone are erratically distributed due in part to poor development of the "C" horizon over black shale.

The 10200N anomaly, which is of the same tenor as the Hg anomaly above Hellyer, was followed-up by trenching (6200N, 3900E and 4100E costeans) which indicated no obvious source for the anomaly but did expose a window of hangingwall basalt.

3.3.2 Rock Chip

A total of 37 rock chip samples from both fresh and bleached QRS and mica sandstone were analysed for Cu, Pb, Zn, Ba, As, Ag, Cr and Hg. Analyses and sample locations are presented in Appendix 3. Base metal values were variable, maximum 735 ppm Pb and 140 ppm Zn, and no apparent correlation with the degree of bleaching was found. Mercury values, maximum 370 ppb, were generally above the background for the QRS (120 ppb [McNeill 1989]) and of the same tenor as found above the Hellyer deposit (165 ppb average).

3.4 Geophysics

3.4.1 UTEM

A total of 6.3 line km of UTEM was read from two loops. The results of this survey are presented in Appendix 4.

No response attributable to a VMS body was recorded while three shallow (<50m) zones of anomalous conductivity have a lithological character and coincide with the western margin of the dolerite (zones 1 and 2) and the hangingwall basalt (zone 3).

3.4.2 Ground Magnetics

A total of 7.9 line km of 10m spaced ground magnetic data was collected on lines 102000N to 11000N using an Omni EDA4 proton precession magnetometer. This data was dumped to a portable computer and combined with data from a second magnetometer in base station mode to produce the stacked profiles on plate HT96. No obvious anomalies or lithological units were defined. This data has been included in the Mackintosh district (EL's 2/70 and 15/73) database and image processing techniques applied. The resulting image is included in McNeill (1989).

3.5 Diamond Drilling

3.5.1 DDH MAC-10

DDH MAC-10 was sited in the "centre volume" of the dam (see plate MAC 89 YY for Collar location) as a test of the HOP (at an expected depth of 250 +/-100m), to provide stratigraphic information on the QHV and to test a conductive zone outlined by the UTEM survey, possibly a major fault structure in the Que River, shale?

A detailed log and petrographic descriptions are included as Appendix 5 and a section of the hole is presented as plate MAC 162 (refer to plate MAC 115 for legend). A summary log is as follows:

0-6m	Tricone.
6-117.4m	Black shale (Que River shale).
117.4-202.3m	Basalt pillow lava with minor shale rich units.
202.3-205.2m	Brecciated dacitic intrusive.
205.2-215.1m	Basalt pillow lava.
215.1-225.1m	Brecciated dacitic intrusive (Figure 4).
225.1-260.1m	Basalt lava.
260.1-316.8m	Andesitic feldspar pyric lava and lava breccia. Incipient silica-sericite-feldspar "crackle texture" alteration to 310m.
316.8-382.8m	Basalt lava.
382.8-441.2m	Andesitic feldspar pyric lava and lava breccia Incipient "Quellite" texture. Sharp conformable contact to:
441.2-450.1m	Mica sandstone and shale with minor devitrified andesitic fragments.
450.1-480.4m	Andesitic lava breccia.
480.4-449.3m	Shale + mica sandstone.
499.3-500.2m	Medium lapilli volcaniclastic with sericite-pyrite-silica altered volcanic fragments.
500.2-529.6m	Shale and mica sandstone. Dominantly massive black shale below 508.5m.

MAC-10 appears to have intersected a complete section of the QHV confined between the overlying Que River Shale and basal micaceous sandstone ("Animal Creek Greywacke") Sequence. The QHV in this hole is of comparable thickness to that in HAT-5, near the Que River Bridge (Hespe 1986) but, there are major stratigraphic differences i.e. no ore host lithology was intersected in MAC-10, the lower basalt is much thinner in MAC-10 and is included within the feldspar-phyric andesites rather than in contact with the basal mica sandstone as in HAT-5.

The two brecciated "dacitic" intrusives (202.3-205.2m; 215.1-225.1m) are anomalous, in that similar bodies intruding basalt have not been seen elsewhere on the licence and as such their significance is poorly understood.

Petrographic descriptions (Appendix 5) of the basal sediments indicate that there is a much higher volcanogenic component, and paucity of metapelite clasts, and a much lower Cr content (Section 3.8.2) than other mica sandstone intersections in HAT-5 and MC-15. It has been suggested therefore that these sediments may be situated within, rather than basal to, the QHV.

Geochemistry

The entire length of MAC-10 was core ground and analysed for Cu, PB, Zn, Ag, Au, Ba, As, Cr, Ni, Ti, Zr. Results are presented as plate MAC-162A, and in Appendix 6.

High Cr values confirm the two basaltic intervals however, the low Cr and high Ti/Zr ratio (>0.2) suggest that much of the interval 270-296.2m, logged as andesite, is rhyolitic or at least dacitic.

Cr values in the basal mica sandstone (av. 75 ppm) are much lower than those recorded from HAT-5 (av. 300 ppm) and MC-15 (av. ~350 ppm).

Maximum values of Cu (4625 ppm) and Zn (4075 ppm) occur between 332-342m and have no obvious source. A maximum of 180 ppm As between 66-76m corresponds to a fault zone while a Pb high of 365 ppm occurs at the base of the Que River Shale.

Geophysics

Downhole E.M. (Sirotem) was completed on MAC-10. A report is included in Appendix 7. No anomalous responses were detected.

In preparation for a seismic survey, samples from MAC-10 were submitted for determination of physical properties. Results are included in Appendix 34. A major feature is the low seismic velocity of altered andesite. Results from the seismic survey are included in McNeill (1989).

3.5.2 DDH HAT-9

Geology

DDH HAT-9 (see plate MAC 89 yy for collar location) was designed to test the Hg anomalies on 10200N where, although no UTEM response was detected it was considered important to determine if the soil anomaly was due to leakage from the HOP as the area would be permanently sterilised by construction of the dam wall.

A detailed log and petrographic report are included as Appendix 8 while a section of the hole is presented as plate HT 92. A summary log is as follows:

0.33.0m	Black shale (QRS). Faulted contact to:
33.0-56.5m	Basalt lava breccia. Gradational contact to:
56.5-98.0m	Massive vesicular basalt lava. Sharp irregular contact to:
98.0-98.7m	Finely interbedded mica sandstone, siltstone and polymict fine lapilli volcaniclastic (Figure 5).
98.7-103.4m	Basaltic fine to medium lapilli volcaniclastic
103.4-184.0m	Massive to brecciated feldspar-phyric andesitic lava. Black shale matrix to breccia from 103.4-108.1m (Figure 6).

A good potential ore horizon was intersected from 98.3-103.4m, however no mineralization or alteration was noted. The thickness of this unit was surprising as no potential ore horizon was intersected in MAC-10, approximately 450m to the north. Petrography from the lower part of this unit (98.3-107.4m) confirms its epiclastic, rather than being a lava breccia. The interval 103.4-184.0m, logged as a feldspar-phyric andesite is quite strongly feldspar-silica altered and has been described, in Appendix 8, as a possible intrusive rhyolite breccia, which is consistent with a high Zr/Ti ratio (see below) and as such is problematical. This unit may be correlatable with the two intrusives in DDH MAC-10 and suggests that quite a large rhyolite/dacite body occurs in the tailings dam area at approximately the same stratigraphic position in dacite "domes" on the Switchback (McNeill, 1989).

Geochemistry

The complete length of HAT-9 was core-ground and samples analysed for Cu, Pb, Zn, Ba, As, Cr, Ni, Ti,Zr, Ag and Au. Samples were selected on lithological boundaries or over approximately 10m intervals in areas of uniform lithology. Results are presented on plate HAT92A and in Appendix 9. High Pb (900 ppm) and Zn (1600 ppm) in basalt lava are probably due to sulfides in quartz-carbonate veins. Base metal values are low at the interpreted HOP but Au (50 ppb) and As (53 ppm) are elevated while base metal values below the HOP are very low.

Figure 4. 396704, brecciated ?dacitic intrusive. intrudes hangingwall basalt.

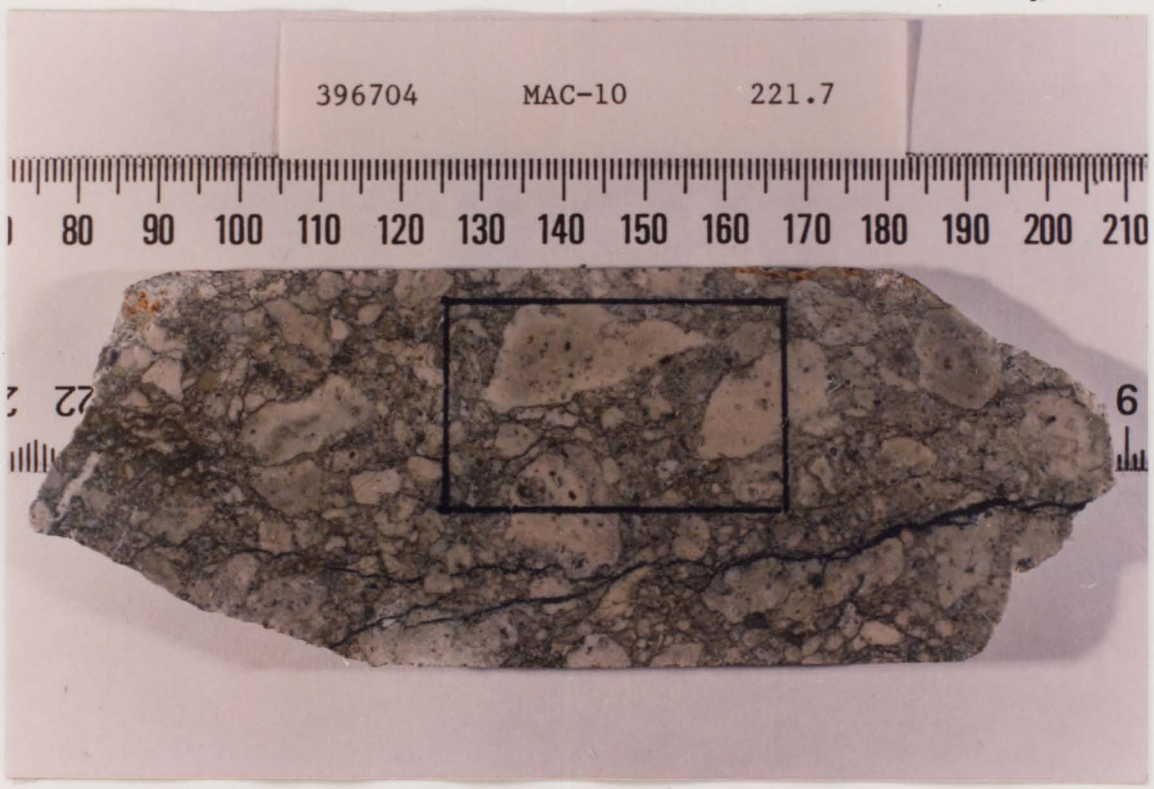
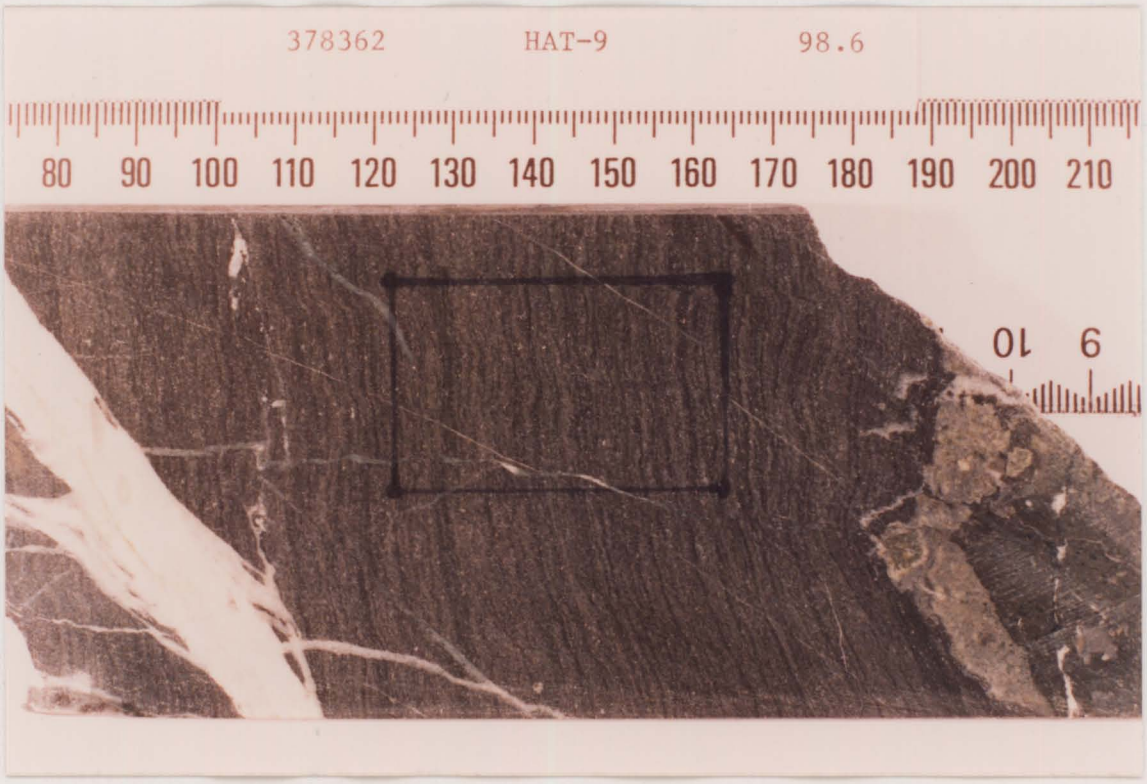


Figure 5. 378362, laminated mica sandstone, siltstone and polymict volcaniclastic. HVS equivalent.



Cr values confirm the basalt in the upper part of the hole although Zr/Ti ratios are high for basalt. The andesites have a rhyolitic to dacitic Zr/Ti ratio (ave. 0.170) but this may be the result of remobilisation by the intense silica-feldspar alteration.

Geophysics

Downhole E.M. (Sirotem) was completed on HAT-9. A report is included as Appendix 7, no off-hole conductors were detected.

3.6 Summary and Recommendations

UTEM, mapping, soil geochemistry and drilling (713m) failed to locate any targets in the immediate vicinity of the tailings dam wall or the area to be flooded however, a zone of bleaching and veining, in the QRS, and partially coincident anomalous Pb, Zn and Hg soil geochemistry NW of the tailings dam warrant follow-up. Much of this anomaly has not been tested by UTEM, as electrical noise prevented effective readings within approximately 200m of the HEC transmission line. The interpreted geological settings above growth faults that bound the QHV and which may have focused hydrothermal fluids during volcanism, make this zone an attractive target.

4. Old Mill Site Prospect

4.1 Introduction

The old mill site prospect is an area of anomalous Pb/Zn soil geochemistry, (Pb to >1000 ppm) west south-west of the Que River Mine, between 6500N and 8000N. The anomaly occurs over a lobe of basalt, as defined by Cu soil geochemistry, that forms the core of an interpreted gently SW plunging, syncline. This basalt is considered to be equivalent to the Hellyer basalt, due to its relationship to the QRS near the Murchison Highway (Hespe 1986). Costeaning (ibid) has confirmed the Pb/Zn anomaly, (although no sulfides were seen), and the presence of basalt. Diamond drilling was therefore recommended to investigate the possibility that the soil anomalies were due to remobilisation from the Hellyer Ore Position.

4.2 Diamond Drilling

4.2.1 DDH HAT-6

DDH HAT-6, see plate MAC 89 BB for collar location, was designed to test the HOP beneath an intense Pb/Zn soil anomaly on the eastern limb of the inferred old mill site syncline. This anomaly had not previously been geophysically tested as UTEM is ineffective within 200m of high voltage transmission lines.

A detailed log and petrological report are included as Appendix 10 while a section of the hole is presented as plate HAT 83. A summary log is as follows:

0- 30.7m	Tricone
30.7- 98.8m	Brecciated vesicular basalt lava. Faulted contact to:
98.8-190.8m	Massive vesicular basalt lava. 0.2m thick quartz-phyric rhyolitic dyke at 119.8m (Figure 7). Slightly ?unconformable contact to:
190.8-239.5m	Andesitic feldspar-phyric lava breccia.
239.5-262.5m	Feldspar phyric andesitic lava. Intensely silica altered below 249.5m and flow banded in part.

As can be seen from the summary log, no potential host horizon was intersected between the basalt and "andesite". The highly vesicular nature of the basalt is very similar to that immediately below the QRS near the Murchison Highway suggesting a correlation with the Hellyer basalt. However, petrographic description (Appendix 10) indicates the presence of prehnite-pumpellyite-epidote alteration, typical of the lower basalt, although this low-grade regional metamorphic assemblage could occur in hellyer basalt distant from any hydrothermal alteration system. A unusual highly epidote altered ?quartz-phyric "intrusive" occurs at 119.8m and appears to be associated with a zone of altered basalt (quartz-epidote-carbonate-tremolite) at 122.9m.

Figure 6. 378365 Altered ?andesitic lava. Chemically this lithology is dacitic.

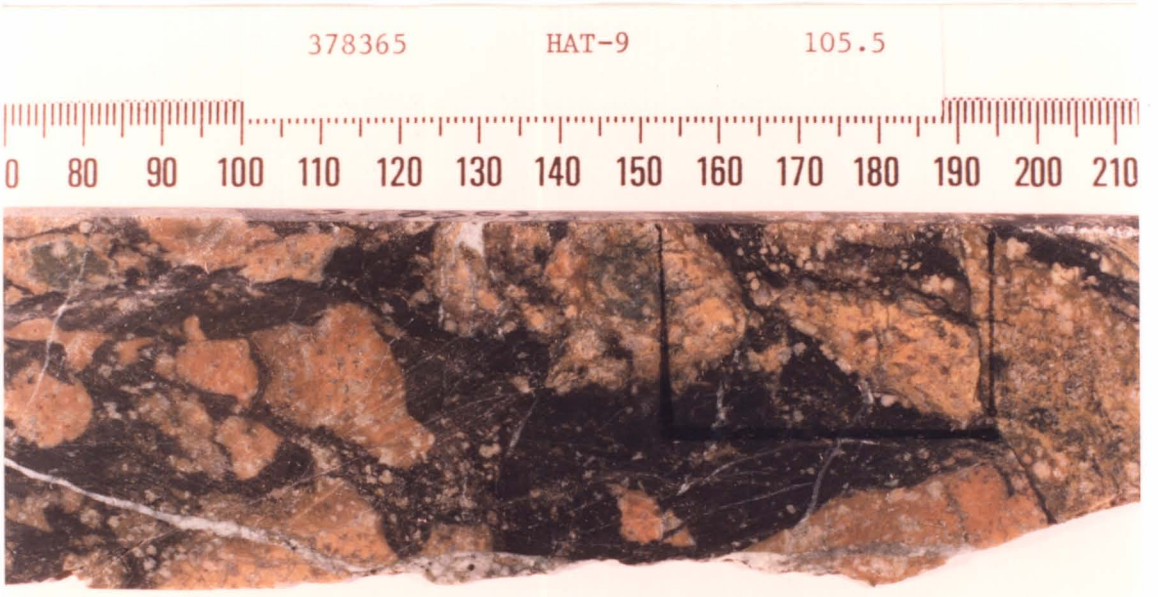
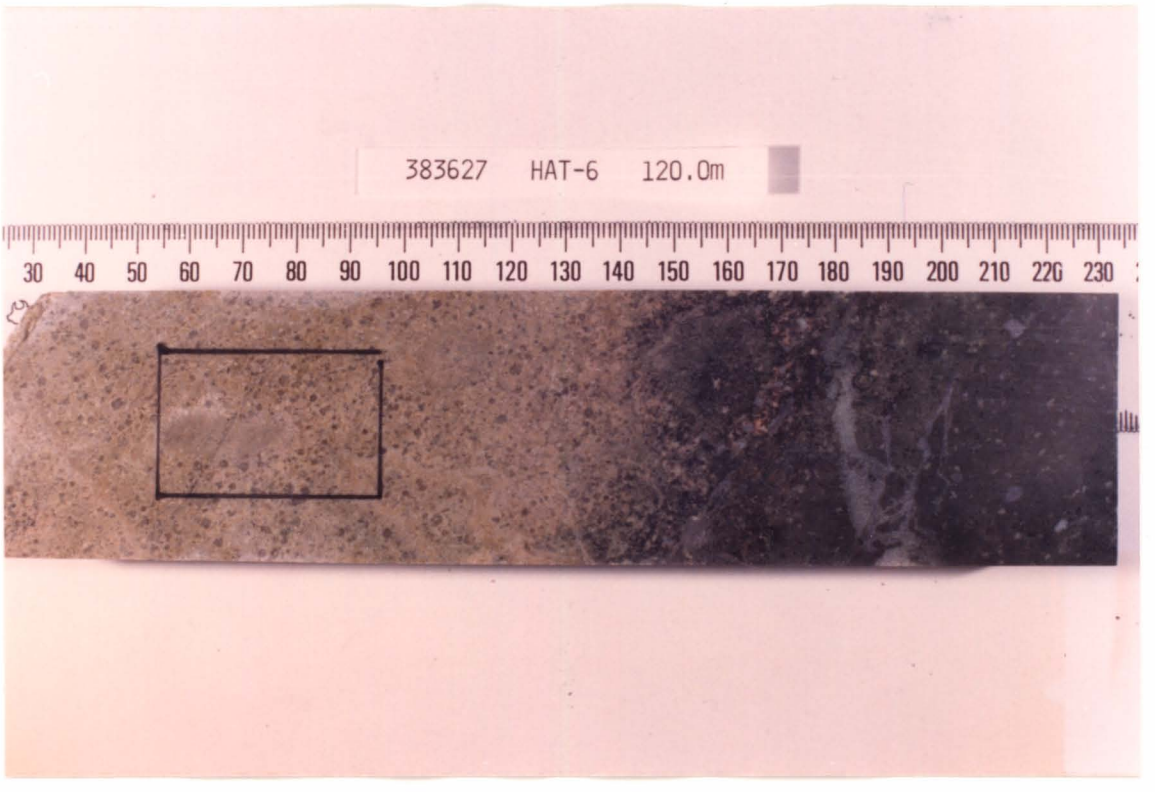


Figure 7. 383627 contact between strongly epidote (+ quartz) altered basalt, initially logged as rhyolite, and relatively fresh basalt.



019

The chemistry of the "intrusive" 290 ppm Cr and Zr/Ti = 0.08 (Appendix 10) suggests it has both basaltic and dacitic characteristics, while contacts with enclosing fresh basalt are gradational (Figure). It is possible that both intervals are zones of alteration the cause of which is unknown.

No visible mineralization, to source the soil anomalies, was seen in this section.

Geochemistry

The complete length of HAT-6 was core-ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ni, Ti and Zr. Results are presented in Appendix 11 and on plate HAT 83A. Cr values confirm the presence of basalt from 30.7-118.8m however, the interval logged as basalt below this has low Cr values, 65-86 ppm, although Zr/Ti ratios are low, suggesting it is a low Cr basalt. From 190.8-220.8 is an interval of probable andesite, low Cr and Ti/Zr average 0.055, and below this are dacites with high Zr/F and Cr below detection limit as suggested by petrological work (Appendix 10), to the end of the hole.

High Cu (160 ppm),Zn (770 ppm max.) and Pb (275 ppm) occur above 160m in the basalt and probably source the soil anomalies. No mineralisation to produce these values was seen.

Geophysics

DDH HAT-6 was cased with PVC and read with sirotem. A report on this survey is included as Appendix 7. No off-hole conductors were detected.

4.2.2 DDH HAT-8

Geology

The lack of a potential ore horizon in HAT-6 does not preclude the development of an ore horizon elsewhere in the old mill site syncline area. DDH HAT-8 was collared on the second major soil anomaly (see plate MAC 89 BB for location) to determine its source and as a test for mineralisation on both the Hellyer and Que River ore positions.

A detailed log and petrographic descriptions are included as Appendix 12 and a section of the hole as plate HAT 91. A summary log is as follows:

0- 24.3m	Tricone.
24.3-155 m	Vesicular basalt lava breccia, epidote-pumpellyite-quartz altered,gradational contact to:
155 -202 m	Andesitic-basaltic lava breccia.
202 -285.9m	Andesitic feldspar-phyric lava, epidote and feldspar-silica altered, possibly flow-banded in part.
285.9-297.2m	Andesitic lava breccia with selective alteration of clasts.
297.2-359.0m	Andesitic feldspar phyric lava.
359.0-403.0m	Vesicular basaltic lava with patchy epidote alteration.

Lithologically this hole is very similar to DDH HAT-6 being composed of basaltic-andesitic lavas and lava breccias with no potential ore horizon. The vein controlled epidote alteration common in HAT-6 is also widespread in this section and is unique to these two holes. The significance of this alteration is not understood. The presence of prehnite-pumpellyite alteration is thought to indicate only low-grade regional metamorphic effects and suggests these rocks are disstant from any hydrothermal system. As with HAT-6 no obvious mineralisation was seen to source the Pb/Zn soil anomaly.

Geochemistry

The complete length of DDH HAT-8 was core ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ni, Ti,and Zr. Results are presented as plate HAT 91A and in Appendix 13.

High Zn values, to 1450 ppm, occur throughout the hole while Pb, to 255 ppm, occurs above 64m and probably source the soil anomaly, no associated mineralisation was noted. Cu, maximum 985 ppm is also anomalous throughout this section and results from ultrafine chalcopyrite disseminations (Appendix 12).

Lithological indicator elements generally confirm the logged rock types. Low Cr, >150 ppm, values for the interval below 359m suggest it may be an andesite, however, petrographic descriptions confirm it is a two pyroxene basalt (Appendix 12).

Geophysics

Downhole E.M. (sirotem) was read on HAT-8. A report is included in Appendix 7. No offhole conductors were detected.

Magnetic susceptibility readings on nominal 1m spacings were collected and the results are summarised in Appendix 33. No anomalous zones were detected in this hole.

4.3 Summary and Recommendations

Two major Pb/Zn soil anomalies in an area of ineffective EM coverage were tested by 623m of diamond drilling. Although anomalous Pb and Zn values were returned in core grinds from the Hellyer basalt, no obvious mineralization was seen. The lack of a potential ore horizon and the presence of prehnite-pumpellyite, normally destroyed by hydrothermal alteration, also contribute to the down-grading of this prospect.

Future exploration could focus on locating hangingwall style alteration in the basalt and be concentrated near the core of the syncline. Stratigraphic drilling, by extending HAT 8 to basement and a second hole south of the Que fault, could be used to resolve stratigraphic changes across this fault.

5. I_1 Zone

5.1 Introduction

The I_1 zone, between 5600-5800N and around 4100E, SSW of the Que River Mine, was located by the 1979 UTEM survey. Two anomalies on 5600 and 5800N were recommended for follow-up and in 1983 were detailed using the EM-37 system on 100m spaced lines (Hespe 1984). This survey confirmed the discontinuous nature of the anomaly and closed it off north of 5800N. Sampling yielded anomalous Pb and Zn values in the 5800N and 5700N costeans but did not clarify the geology or the nature of the UTEM anomaly.

5.2 Geology/Geochemistry

As the geology of this area was still poorly understood a further costean on 5600N (plate HAT 82) was completed. Channel sampling (Appendix 14) indicated the presence of dacites to the west and andesite to the east while the UTEM anomaly coincided with a creek between these lithologies. Channel samples from the 5700 and 5800N costeans were re-analysed for lithological indicator elements (i.e. Cr, Ti, Zr) and a basaltic unit located in the 5700N costean (plates HT 47d and 47e). The basalt was confirmed by mapping while three 100m spaced lines (5400-5600N) of soil sampling (see Appendix 14 for locations and assays), indicate that it continues south to at least 5900N. Correlation with pyrite-fuchsite altered basalt lava on the Barite Creek track (5200N, 4200E) would suggest the basalt occurs in a possible anticline, plunging both grid north and south, and is possibly an equivalent of the Hellyer Basalt, although it is overlain by andesite (c.f. Section 7.2 and MC-15).

5.3 Diamond Drilling

5.3.1 DDH HAT-7

Geology

DDH HAT-7 (see plate MAC 89 BB for location) was designed to test for mineralization at the HOP beneath an anticlinal closure in basalt and associated with a shallow <50m depth, channel 5 UTEM anomaly.

A detailed log and petrographic report are included as Appendix 15 while a section of the hole is presented on plate HAT 90. A summary log is as follows:

0- 12.7m	Tricone.
12.7- 19.0m	Feldspar-phyric andesitic lava.
19.0- 71.6m	Basaltic lapilli volcaniclastic with quartz-calcite-sphalerite-chalcopyrite-pyrite veins and patches of variable intensity.
71.6-118.2m	Dacitic lava breccia with sericite-silica altered fragments and stockwork silica-pyrite veins.
118.2-123.9m	Vesicular basalt lava. Sericite-?fuchsite altered.
123.9-136.0m	Polymictic Basaltic volcaniclastic, pyrite-sericite altered with possible pyritic clasts. (Figure 8).
136.0-138.6m	Polymict volcaniclastic. Pyrite-sericite altered.
138.6-220.9m	Dacitic lava. Pyrite-silica veined, pink (feldspar-silica) alteration common except between 160-179m.

The Basaltic unit (19.0-71.6m) probably correlates with surface outcrop to the south implying a northeast plunge to the anticline while the presence of a dominantly dacitic, rather than andesitic sequence below the unit was unexpected. Alteration in the dacite, between 71.6 and 118.2m, is typical of footwall style alteration below Hellyer. The volcaniclastics (122.9-138.6m) are strongly altered and texturally very similar to the HVS at Hellyer, in contrast to the very fine grained potential ore horizons in other drill holes in this area e.g. HAT-1.

Geochemistry

The complete length of HAT-7 was core-ground, on 10m nominal intervals, and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ni, Ti and Zr. Results are presented on plate HAT 90A and in Appendix 16.

High Zinc values (3950 ppm max) occur above 60m and are related to sulphide-quartz-calcite veining while Cu values are elevated (maximum 795 ppm) to 117m. Pb is low with one high value (1350 ppm) in the basaltic volcaniclastic.

High As and Ba values (maximum 340 and 6100 ppm respectively) occur from 70-117m in quartz-pyrite veined dacitic lava and are associated with weakly elevated Au, 260 ppb max. and Ag (2 g/t max.). High As also occurs from 190-210m but with no associated Au or Ag.

Lithological indicator elements confirm the logged rock types, but suggest that the andesite lava at the top of the hole is actually a dacite, with Zr/Ti = 0.1.

Geophysics

DDH HAT-7 was cased with PVC and read with Sirotem. Results are presented in Appendix 7. No off hole conductors were detected.

5.4 Summary and Recommendations

The detailed geology and the UTEM response in the I_1 zone area is still poorly understood and requires further mapping and complete coverage by soil sampling for lithological indicator elements (Cr, Ti and Zr) prior to any further drilling. A gap in UTEM reading lines, north of the I_1 anomaly from 6000-6600N should be surveyed to complete coverage in this area.

6. Mount Charter Dolerite

6.1 Introduction

Prior to a gravity survey (Hespe 1986) the Charter dolerite was considered to be a steeply dipping dyke however, this survey indicated it was a sill and thus would be underlain by an extensive area of untested QHV. No UTEM targets were detected (Hespe 1986 and Section 6.4) but a strong base metal soil anomaly associated with the Mount Charter fault was considered to be the result of leakage from a VMS at depth.

6.2 Geology

The geology of this area is shown on plate MAC89 CC and has been described in detail by Hespe (1986). Petrological descriptions of samples from costeans in this area are included as Appendix 17, while a plan of the 4300N, 3200E costean is included as plate HAT-47g.

6.3 Geochemistry

"C" horizon soil samples from this area were re-assayed for Ni, Ti and Zr (220 25m spaced samples) as an aid to lithological discrimination. Results are included in Appendix 8.

5m channel samples from the 4200N, 3200E costean were analysed for Cu, Pb, Zn, Ba, As, Ag, Au and Cr. Results are included in Appendix 19 and on plate HAT-47g. A maximum of 2130 ppm Zn and 790 ppm Pb occur on the margin of the dolerite.

6.4 Geophysics

A report on the UTEM survey, the initial results of which were presented by Hespe (1986), is included in Appendix 4.

6.5 Diamond Drilling

6.5.1 DDH MC-14

Geology

DDH MC-14 (see plate MAC 89 CC for location) was designed to test the HOP beneath the Charter dolerite. Encouragement for drilling was provided by a base metal soil anomaly, possibly the result of leakage from a VMS at depth and the presence of fuchsite altered basalts, exposed in costeans and on the Murchison Highway.

A detailed log and petrographic report are included in Appendix 20 while a section of the hole is presented on plate HAT 84. A summary log is as follows:

026

0 - 19.3m	Tricone.
19.3 - 39.6m	Dolerite.
39.6 - 148.9m	Black shale (QRS) with ash to fine lapilli volcaniclastic interbeds.
148.9 - 269.0m	Andesitic, weakly feldspar-phyric lava. Peperitic interval 148.9-156.5m.
269.0 - 465.8m	Dominantly basalt lava breccia.
465.8 - 529 m	Silicified feldspar-phyric andesitic lava breccia interbedded with massive, vesicular basalt lava.

This hole confirmed the sill like nature of the Charter dolerite and that it intrudes the Que River shale, while volcaniclastics in the shale correlate with those exposed on Gordon's Hill Road costean to the east. As with DDH MC-15 (section 7.2) the shale is conformably underlain by feldspar-phyric andesite rather than basalt as in the standard Hellyer section. This andesite contains abundant disseminated sphalerite, the origin of which is unclear. Basement was not reached and no potential ore positions were logged.

Geochemistry

The complete length of DDH MC14 was core ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ti and Zr. Results are included in Appendix 21 and on plate HAT-84A.

Cu and Pb values are generally low although high Pb (max. 1650 ppm) and Zn (Max.9350 ppm) occur at the top of the andesite and are related to disseminated sphalerite. The elevated values are restricted to within 25m of the contact, in the case of Pb and 95m in the case of Zn. High Zn values (to 1550 ppm) also occur in the Que River shale but are associated with low Pb and Cu. These values are probably sourced by sphalerite-pyrite-carbonate veins. Precious metal values are low throughout the section.

High Cr (>300 ppm) from 263-322m confirms this interval is basaltic however, from 322 to 452m Cr values are low, generally 120-140 ppm and Zr/Ti values are high suggesting this interval is andesitic. Petrography confirms the interval is actually andesitic lava (Appendix 20). High Cr values occur in the dolerite as has been noted elsewhere.

Geophysics

DDH MC-14 was read with DHEM (sirotem). Results are included in Appendix 7. No off-hole conductors were detected.

Magnetic susceptibility readings were collected on nominal 1m intervals. Results are summarised in Appendix 33. No anomalous zones were detected.

6.6 Summary and Recommendations

DDH MC-14 tested the QHV beneath the Charter dolerite. No mineralisation or potential ore horizon was intersected. UTEM has now sterilised the area below the Charter dolerite to a considerable depth and this combined with the results from DDH MC-14 has downgraded the prospectivity of this area.

7. South Mount Charter

7.1 *Introduction*

Following the production of a 1:25,000 map sheet (Komyshan 1986) by Mines Department Geologists, a series of diamond drill holes, to resolve perceived structural and stratigraphic problems in this area, were completed. Although drilled by the D.O.M. Aberfoyle Resources were given access to these holes which were logged; core-ground and petrographically sampled and DHEM read on selected holes. In addition DDH MC-15 was extended by Aberfoyle from 407-606.3m after Mines Department drillers had moved off-site.

7.2 Diamond Drilling

7.2.1 DDH MC-15

Geology

This hole (see plate MAC89 CC for collar location) was designed to yield stratigraphic information on the location and nature of the HOP, and associated lithologies, south of Mount Charter. It was extended to reach mica sandstone basement as this would provide a complete section of the QHV and aid in correlating lithologies in this area. It would also confirm a new interpretation of the DDH MC-9 area which would allow for continuation of the HOP east of MC-9.

A detailed log and petrographic descriptions are presented in Appendix 22 while a section of the hole is included as plate HT87. A summary log is as follows:

0 - 10.5m	Que River Shale ?intrusive contact to:
10.5 - 57.7m	Andesitic lava breccia, feldspar-phyric, with minor volcaniclastic interbeds.
57.7 - 115.1m	Interbedded vesicular basalt lava and lava breccia. Sharp conformable contact to:
115.1 - 116.0m	Ash to fine lapilli volcaniclastic. Sharp conformable contact to:
116.0 - 120.5m	Basalt lava.
120.5 - 122.1m	Andesitic lapilli volcaniclastic.
122.1 - 135.0m	Andesitic feldspar-phyric lava breccia Gradational contact to:
135.0 - 195.7m	Andesitic lava and lava breccia.
195.7 - 354.3m	Basalt lava.
354.3 - 359.7m	Mica sandstone.
359.7 - 378.9m	Andesitic lava breccia.
378.9 - 407.0m	Basalt lava and lava breccia.
407.0 - 491.5m	Andesitic lava, "quellite texture" below 481m.
491.5 - 497.5m	Ash volcaniclastic.
497.5 - 518.1m	Andesitic lava.
518.1 - 561.7m	Interbedded ash volcaniclastic and polymictic andesitic lapilli volcaniclastic includes 2m of basalt lava (538-540m) (Figure 9). Conformable contact to:
561.7 - 606.3m	Mica sandstone and interbedded shale.

Figure 8. 379383 Sericite-carbonate-pyrite-quartz-altered weak polymict basaltic volcaniclastic.

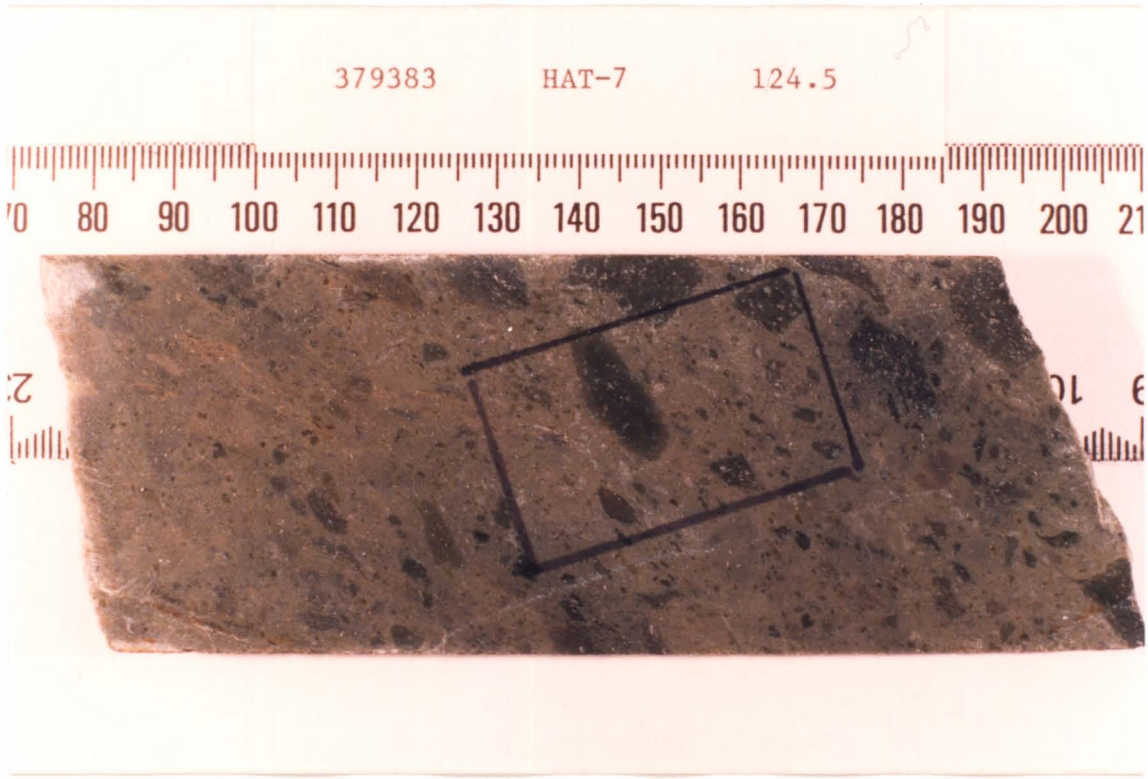


Figure 9. 379360 Pyrite-sericite altered polymict volaniclastic at contact of Lower Basalt and Animal Creek Greywacke.



This hole represents a complete section of the QHV with a thickness of ~ 470m, somewhat greater than the sequences in DDH MAC10 and HAT-5 (350m and 280m respectively), although it is unclear whether MAC-10 actually reached basement. Two possible ore positions were intersected; an equivalent of the HOP below the uppermost basalt unit and the thick volcaniclastic immediately above basement Mica sandstone. This lower horizon is weakly but pervasively sericite-pyrite altered and represents a possible target not previously considered in this area. Logging by Department of Mines Geologists suggests the presence of a third potential host horizon, between approximately 180-195.7m (K.D. Corbett pers. comm.) which may correspond to the Que River ore position.

Albite-silica alteration of andesite is common throughout the sequence while patchy epidote alteration occurs in the basalt from 209-354.3m. "Quellite" textured andesites appear at 481m and alteration increases in intensity down hole to 491.5m. This silica-sericite-pyrite alteration is typical of that found in andesites footwall to the Hellyer ore body.

Geochemistry

The complete length of MC-15 was core ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ni, Ti and Zr. Results and grinding intervals are presented in Appendix 23 and on plate HT87A.

Cu and Zn values are elevated, although Pb is low, throughout the hole. A maximum of 9200 ppm Cu and 7750 ppm Zn occurs between 369-378m and may be related to disseminated sphalerite-pyrite in the matrix of an andesitic lava breccia while from 491-497m a maximum of 2050 ppm Cu and 2000 ppm Zn may be related to disseminated syngenetic sulphides aligned with bedding. Precious metal values are low.

Lithological indicator elements generally confirm the logged intervals although Cr values from the basalt (195-354 m) are low however petrography confirms its basaltic nature. The interval 135-195m logged as an andesite has high Ti/Zr ratios more characteristic of a dacite, while its flow-banded nature and leuco-andesitic petrography also suggest it may be a dacitic lava; as logged by D.O.M. Geologists (K.D. Corbett pers. comm.)

The basal mica-sandstone has a characteristically high Cr content.

Geophysics

DDH MC-15 was read with Sirotem and a report is included in Appendix 7. No off hole conductors were detected.

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Magnetic susceptibility reading at nominal intervals were collected. Results are presented in Appendix 33. No anomalous zones were detected.

7.2.2 DDH MC-17

This hole (see plate MAC 89 CC for collar location) was designed to determine the orientation of what was considered by Mines Department Geologists to be the Mount Charter fault, thought to have a steep southerly dip. However, Aberfoyle mapping suggests the structure being tested is a splay? from the main Mount Charter fault, further to the south.

A detailed log and petrographic report are included as Appendix 24 while a section of the hole is presented as plate HT88. A summary log is as follows:

0 - 275.8m	Interbedded micaceous sandstone. Siltstone and minor shale. Major fault from 274.9 - 275.3m interpenetrating contact to:
275.8 - 299.35m	Quartz-phyric rhyolitic intrusive with 20cm wide siltstone fragment.
299.35-309.9m	Feldspar-phyric andesitic lava. Conformable contact, gradational over 30m to:
309.9 - 376.45m	Basalt lava, vesicular in part with minor volcaniclastic (340-345m).

Correlation with surface exposure indicates that the fault is actually steeply north dipping. Most deformation, a 40cm zone of ductile deformation occurs within the micaceous sandstone although an intrusive rhyolite, containing a xenolith of sheared siltstone, may occupy the main fault plane. The contact between this intrusive and the andesitic is obscured by veining. The rhyolite appears to be relatively unstrained and as the Charter fault is a Devonian structure, truncating? Devonian folds, it must have a Devonian or post Devonian age. This intrusive is pervasively and intensely silica-sericite. Carbonate-pyrite altered while the andesitic lava from 203-209m is intensely silica altered. The andesite also contains patches of disseminated sphalerite and below 309.9m the basalt is quite strongly mineralised with disseminated sphalerite in the cherty matrix of lava breccias, clots of sphalerite and rare galena and coarse black sphalerite-galena-chalcopyrite forming 1-3 cm patches in quartz veins. Mineralisation of this tenor has not been seen elsewhere in what is interpreted to be the lower basalt.

Geochemistry

DDH MC-17 was core ground from 235m to the end of hole and sample analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ni, Ti and Zr. Results are presented as Appendix 25 and on plate HT88A. Precious metal values are low but Cu and Zn are elevated below 295m, due to the mineralisation described above and reach a maximum of 4550 ppm Cu and 4600 ppm Zn. Pb values are generally low with a maximum of 455 ppm.

High Cr occurs in the micaceous sandstone, as with elsewhere on the licence, and defines the andesitic and basaltic lavas. However, the Ti/Zr ratios appear to be high, with dacitic values for andesites and andesitic values for basalt. Petrography (Appendix 24) confirms the logged intervals and thus, the high Ti/Zr could be due to analytical error, discounted as a standard (375064) submitted with this job indicated no analytical variance, or as a result of alteration, possibly silicification.

Geophysics

DDH MC-17 was read with sirotem. A report is included as Appendix 7. No off hole conductors were detected.

Magnetic subseptibility readings were collected. Results are presented in Appendix 33. No anomalous zones were detected.

7.2.3. DDH MC-16 and MC-18

Geology

These two short holes (see MAC 89 CC for collar locations) were drilled by the Dept. of Mines to test the orientation of the Mount Charter fault (MC-16) and Central Volcanic complex - Animal Creek Greywacke contact (MC-18).

Detailed logs and petrographic report are included in Appendix 26. Summary logs and brief comments on the geology follow:

DDH MC-16	0 - ~	25.0m	Quartz-feldspar-phyric rhyolite sericite altered.
	25.0 -	94.7m	Silicified dacitic lava.

The hole was abandoned short of its target due to drilling problems. It intersected typical Central complex lava and possible intrusive.

DDH MC-18	0 - 6.0m	Tricone.
	2.6 - 20.0m	Grey shale; sheared and highly broken.
	20.0 - 36.0m	Interbedded mica sandstone and grey shale. Sheared, with most deformation taken up be the shales.
	36.0 - 69.9m	Felsic lava with minor ash volcaniclastic (44.6-44.9m)
	69.9 - 74.0m	Dark green basic lava or dyke, massive to weakly brecciated.

The contact between sediments and volcanics, marked by 10 cm of intense white silicification, is considered to be a fault and confirms the faulted contact depicted by Komyshan (1986), although there is some disagreement as Aberfoyle Geologists consider this contact to represent the Charter fault and not a separate structure as indicated by Komyshan (ibid).

Correlation with surface outcrop suggest the fault is north dipping with an apparent dip of approximately 50^{o}.

7.3 Summary

A total of 952m of drilling by the D.O.M. and a 200m extension by Aberfoyle Resources, was aimed at gaining structural and stratigraphic information in this area. DDH MC-15 has provided a complete section of the QHV and intersected a thick basal volcaniclastic not previously recognised. DDH MC-17 intersected the north dipping Mount Charter fault, or a splay from this structure, and the lower part of the QHV while DDH MC-18 confirmed the faulted contact between Central Volcanic Complex and Animal Creek Greywacke in this area.

8. South West Mount Charter

8.1 Introduction

The J_3 UTEM anomaly, defined by the 1983 survey, is associated with a major Pb/Zn soil anomaly. DDH MC-9 (see plate MAC 89 CC for location) tested this target and intersected a potential host horizon with syngenetic sulfides (1.17% Zn and 13 g/t Ag, from 159.6-160.0m [Hespe 1985]) that yielded a Cambrian lead isotope signature. This intersection was considered to be distal to a VMS deposit. Follow-up drilling, DDH MC-10, failed to intersect a potential host horizon and a further drill hole was proposed to test for mineralization further to the west.

8.2 Diamond Drilling

8.2.1 DDH MC-19

Geology

A change in the structural interpretation for the area around DDH MC-9, from a steeply west dipping sequence to a north plunging anticline, allowed for the HOP to continue toward the east. DDH MC-19 was targetted at the HOP beneath the limit of effective UTEM on the eastern limb of this structure.

A detailed log and petrographic report are included in Appendix 27 while a section of the hole is presented as plate MAC 207. A summary log is as follows:

0 - 6.3m	Tricone.
6.3 - 40.4m	Andesitic lava, flow-banded. Fault contact to:
40.4 - 118.0m	Feldspar-phyric andesitic lava breccia. Fault contact to:
118.0 - 186.5m	Andesitic feldspar-phyric lava.
186.5 - 190.8m	Basaltic lava.
190.8 - 443.2m	Andesitic lava breccia with minor basalt lava (236.2 - 239.5m).

No potential ore positions were intersected with the sequence dominated by lava and lava breccia, although some of these lava breccias appear to be monomict volcaniclastics, with a slumped and reworked ash matrix, rather than hyaloclastics. The failure of this hole to intersect the HOP indicates that the east limb of the syncline may dip more steeply than anticipated and that the HOP is at considerable depth, as the basaltic lava normally overlying the HOP had not been intersected at the end of the hole. Alternatively both the upper basalt and HOP lense out to the east.

Geochemistry

The complete length of DDH MC-19 was core ground and samples analysed for Cu, Pb, Zn, Ba, As, Ag, Au, Cr, Ti and Zr. Results are presented on plate MAC 207A and in Appendix 28.

Base and precious metal values are generally low with a maximum of 450 ppm Zn and 125 ppm Pb (200-210m) which has no obvious source.

Lithogeochemical indicator elements confirm that the hole is dominated by andesite and that the interval 186.5-190.8m is basalt, although the logged lower basalt (236.2-239.5m) has an andesitic character, low Cr and low Ti/Zr ratio and is probably massive aphyric andesite. The interval 6-40.4m logged as feldspar-silica altered andesite has a high Ti/Zr value and is flow-banded, more characteristic of dacite than andesite. Petrographically this interval is described as leuco-andesitic (Appendix 27) and may actually be dacitic.

Geophysics

DDH MC-19 was read with DHEM. A report is included in Appendix 7. No off-hole conductors were detected.

8.3 Summary and Recommendations

The mineralised HOP intersected in DDH MC-9 was followed by drilling on the eastern limb of an interpreted anticline. No mineralisation was intersected and the absence of hangingwall basalt suggests structural and/or stratigraphic complications that should be resolved by detailed mapping, possibly in conjunction with soil sampling for lithological indicator elements, prior to any further follow-up of the target.

9. South Hatfield

9.1 Introduction

This area, south of the Mount Charter fault, is dominantly underlain by felsic volcanics of the Central Volcanic Complex (Komyshan 1986) and prior to 1986 had not been explored. A programme of gridding (initially 400m spaced then closed to 200m) mapping, soil sampling and UTEM was completed to initiate exploration in this area.

9.2 Geology

Initial mapping at 1:2500, on 400m spaced lines was closed up in the boundary prospect area, see below, and then on 200m spaced lines with some re-mapping of earlier traverses. Outcrop geology is shown on plates MAC 89 MM, NN and UU (see plate MAC114 for legend and Appendix 35 for map sheet locations and geological abbreviations) while petrographic reports are included as Appendix 29.

The general distribution of rock type indicates an anticlinal closure, as suggested by Corbett and McNeill (1986). However, structual data is sparse, especially in the core of this structure where lithologies are dominated by massive to weakly flow-banded felsic feldspar-quartz-phyric dacitic-rhyolitic, with some possibly andesitic, lavas and intrusives and silicified eutaxitic lapilli-breccia volcaniclastics. Quartz+sericite-chlorite alteration of variable intensity is widespread and probably related to low-grade regional metamorphism. This complex is conformably and gradationally overlain by a sequence of interbedded feldspar-phyric ash to fine lapilli volcaniclastic which grade into the overlying mica sandstone and shale of the Animal Creek Greywacke (of Collins 1981). Around 2710N, 4600E the greywacke includes a lens of highly weathered basalt probably equivalent to the lower basalt of the QHV.

In a quarry at 2825E, 2990N a zone of strong silicification associated with quartz-sphalerite and abundant pyrite-barite veins and vug fillings in sericite-k-feldspar and manganese altered lava, is bounded by two shear zones (figure 10). This alteration is quite restricted in area and costeaning (see plate MAC 89 MM for location) and mapping have failed to locate any further alteration of this type. This alteration zone has been named the boundary prospect.

9.3 Geochemistry

9.3.1 Soil Sampling

"C" horizon sampling, by hand auger, was initially completed at 25m intervals on 400m spaced lines from 1400N-3800N (590 samples) and followed-up by infill sampling on 50m spaced lines around the boundary prospect (123 samples). Samples were analysed for Cu, Pb, Zn, Ba, As, Ag, Cr, Ni, Ti and Zr; results and sample locations are included in Appendix 30.

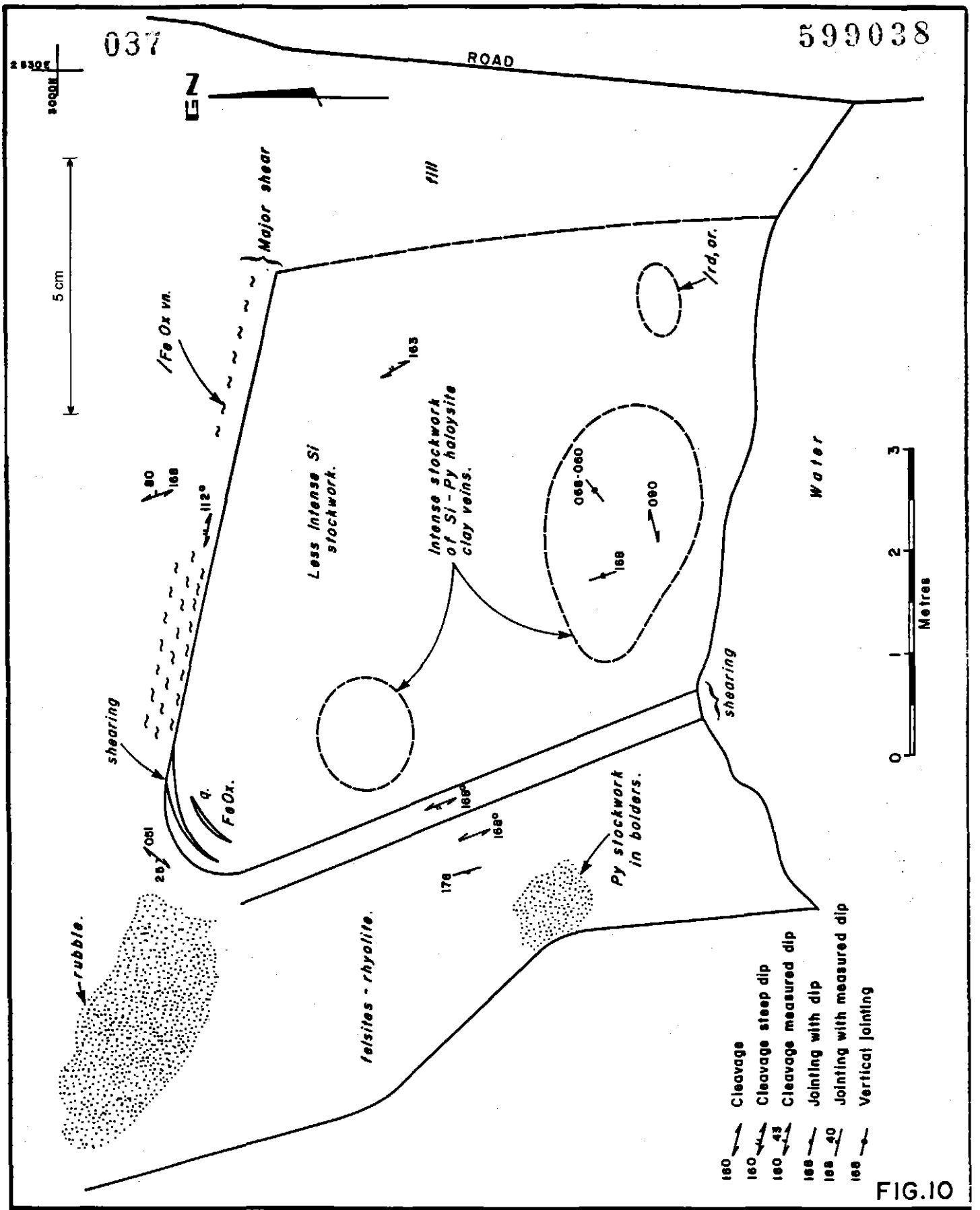


FIG.10

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

MACKINTOSH E.L.2/70 / HATFIELD E.L. 15/73

BOUNDARY QUARRY NORTH BANK

Enlarged Inset of Area as Located on Plan.: Mac 89/NN

Location Code:

Scale: 1:500

Date: Sep' 1986.

Compiled: D J J

Drawn: DJJ

Traced: BAN

Checked: DJJ

Plate No. Mac - 144.

Cu and Pb values are low throughout this area although weak-moderate Zn anomalies occur around 4300E, 1800-2200N and 3200N 2550E and are roughly coincident with units of ash volcaniclastic. As is generally low but a moderate anomaly is coincident with the 4300E Zn anomaly, with a further spiky high to the east. Ba values are high in this region and major highs are coincident with the Zn anomalies.

No anomalous values occur over the boundary prospect which appears to occur on the edge of a Ba anomaly and adjacent to a Ba low.

Cr defines the mica sandstone to the east with values generally >200 ppm. Ti and Zr do not appear to define any major lithological changes.

9.3.2 Rock Chip Sampling

This area has been extensively rock-chip sampled; results and sample locations are included as Appendix 31.

Samples from the boundary prospect generally yield low base and precious metal values, the exception being those from the most intense alteration with weakly anomalous Zn, 550 ppm, Pb, 225 ppm, and Ag, to 1.5 ppm. Gold values were all below detection limit (8 ppb). Base metal values outside the boundary prospect are low, with Cu and Pb often below detection limit, and a maximum of 215 ppm Zn from a dacitic volcaniclastic. Silver values are low while two weak Au values 25 ppb and 17 ppb (427320 and 427316 respectively) occur in apparently unaltered rhyolitic lava. Ti and Zr values confirm that lithologies are generally dacitic-rhyolitic.

9.3.3 Pb Isotopes

One sample (271234) from the boundary prospect was submitted for Pb isotope characterisation. A report is included as Appendix 32. Results are consistent with a Cambrian age but some uncertainty exists due to low Pb content.

9.4 Geophysics

9.4.1 Ground Magnetics

A total of 11.6 line km, on 400m lines, of 10m spaced ground magnetic data was collected using an omni EDA4 proton precession magnetometer. This data was dumped to a porta-pak computer and combined with data from a second omni magnetometer, in base station mode, to produce the stacked profiles on plate HT97.

This survey suggests there is a magnetic low surrounding the boundary prospect, possibly due to magnetite destructive alteration, that should be detailed by infill readings. Infill readings will also be required to aid in geological interpretation as the current data set is too widely spaced to define lithological units.

9.4.2 UTEM

A total of 30 line km of UTEM data was collected for 5 loops. Results are included in Appendix 4. No responses attributable to a VMS accumulation were detected.

9.5 Summary and Recommendations

Mapping has confirmed that the area is underlain by correlates of the Central Volcanic complex which have a conformable and gradational contact with the overlying Animal Creek Greywacke. A small area of k-feldspar-sericite-quartz alteration associated with quartz-sphalerite and barite-pyrite veins has some characteristics similar to the interpillow alteration hangingwall to Hellyer (D. Jack pers. comm.). This alteration occurs in an area of ineffective UTEM coverage and warrants further follow-up.

The lack of UTEM and major soil anomalies has downgraded the base metal prospectivey of much of this area, however it's gold potential remains to be tested.

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McNEILL A.W.	1989	Exploration Licence Mackintosh 2/70 Tasmania. Technical Progress Report for the period December 1985 to February 1988. Report to Dept. Mines Tasmania by Aberfoyle Resources Ltd. (In prep).

APPENDIX 1.

HELLYER TAILINGS DAM GRID - PETROLOGY SAMPLES

SAMPLE NO.	LOCATION	REMARKS
383621	10530N/3430E	Que River shale bleached by hydrothermal alteration. Describe alteration and compare with 383622.
383622	10760N/3280E	Que River shale showing hydrothermal bleaching proceeding outwards from veinlets. Compare with 383621.
383623	10850N/2790E	Weathered micaceous sandstone.
383624	11340N/2680E	Fresh micaceous sandstone.
383625	11040N/3115E	Quartz veined micaceous sandstone. Is this rock hydrothermally altered? Compare with altered shales.

599044

043

Central Mineralogical Services

39 Beulah Road
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Mr. A.M. Hespe
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Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

22nd May, 1987

REPORT CMS 87/5/17

YOUR REFERENCE:	Letter dated 14.5.1987
DATE RECEIVED:	15th May, 1987
SAMPLE NOS.:	383621 - 383625
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

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

599045

REPORT CMS 87/5/17

Five rock chip samples of Que River shale and micaceous sandstone were received for petrological examination, with emphasis on hydrothermal bleaching and alteration effects. Representative thin-sections were prepared and examined with the respective offcuts. Microscopic data is summarised in the attached tabulated descriptions.

Summary

The two samples of shale are similar, both rocks representing incipiently cleaved silty shales, with the clastic components dominated by white mica flakes. Both examples exhibit partial illitic degradation of the clastic mica flakes and more or less pervasive kaolinisation of the primarily sericitic/white micaceous matrix. Sample 383621 exhibits partial leaching of thin silty partings, with resultant microscopic cavities partly infilled with ultrafine kaolin (visible as whitish clots and films in stereobinocular examination of sawn surfaces). On this basis, the kaolinitic bleaching is considered as a weathering effect.

In contrast, the similarly kaolinitic-illitic 383622 exhibits distinctive bleaching effects in narrow zones adjacent to quartz veinlets. This phenomenon is due to destruction of carbonaceous matter. There are no microscopically detectable changes in mineralogy, apart from removal of carbonaceous matter, in the simple mica-kaolin-quartz assemblage.

The three sandstones are essentially quite similar and may be categorised as micaceous protoquartzites. These rocks include low-grade regional metapelite-derived carbonaceous lithic clasts and may be less prone to bleaching of carbonaceous matter than the incipiently metamorphosed carbonaceous pelites. Sample 383623 exhibits weathering-induced partial degradation of matrix mica. Sample 383624 is essentially fresh, but does exhibit partial removal of argillaceous (strictly micaceous) matrix components, and is consequently rather porous. In contrast, 383625 exhibits rather subtle sericitic and silicification alteration effects associated with sericitic quartz and crosscutting quartz veinlets respectively. There is no apparent associated bleaching of carbonaceous matter from the clast of metapelite.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
383621 (T.S. 57963)	Carbonaceous Pelite. Partly degraded/illitised silt-sized white mica flakes, minor quartz grains with a matrix of kaolinised semi-sericitic white mica. Minor carbonaceous matter. Sporadic quartzose silty partings.	Silty detrital, banded on a sub- to millimetric scale, incipiently concordantly cleaved.	Minor clasts of carbonaceous phyllite, detrital leucoxenic semi-opaques, rare zircons.	Exhibits kaolin and illite development after sericite matrix and detrital mica flakes. Silty partings are partly leached and infilled with secondary kaolin aggregates.
383622	Carbonaceous Pelite. Kaolinitic-illitic micaceous silty shale similar to 383621, but relatively quartzose-silty and strongly carbonaceous. Pervasive network of fine-scale granular to comb-structured quartz veinlets.	Analogous to 383621, with finer-grained quartzose silt partings, pervasive quartz veinlets (unstressed).	Detrital leucoxenic semi-opaques, carbonaceous pelite clasts, rare zircons.	Close affinities with 383621. Pale selvedges on quartz veinlets reflect bleaching of carbonaceous matter, with no apparent alteration of phyllosilicates.
383623	Micaceous Protoquartzite. Framework of subangular quartz grains, subordinate variably carbonaceous pelite and low-grade metapelite clasts, muscovite flakes. Weakly Fe-stained, fine to semi-sericitic white mica/minor quartz cement.	Poorly/trend bimodally sorted in silt to medium sand range. Weakly bedded. Incipiently stressed.	Minor clasts of metaquartzite, metachert. Sparse detrital tourmaline, leucoxene, zircon, chromite.	Lithoclastic protoquartzite with dominantly low-grade regional metasediment-derived lithic clasts. Reflects selective partial weathering Fe-staining of fine matrix mica.
383624	Micaceous Protoquartzite. Framework of subangular quartz grains, quartz-muscovite phyllite and subordinate carbonaceous pelite/low-grade metapelite clasts, muscovite flakes. Fine-grained quartz-muscovite matrix/cement.	Similar to 383623; slightly finer-grained. Very incipiently stressed.	Minor detrital leucoxene, rare zircon, very rare chromite. Sparse clasts of chert, chloritised biotite.	Close affinities with 383623, relatively lithoclastic in comparison devoid of weathering/partial ferruginisation effects, but with a partly leached matrix.
383625 (T.S. 57967)	Micaceous Protoquartzite. Framework of subangular quartz grains, subordinate carbonaceous pelite and metapelite clasts, muscovite flakes, with a quartz-sericite matrix/cement. Sporadic quartz veins, veinlets.	Poorly sorted silty fine sandstone, weakly bedded. Weakly stressed host rock, incipiently stressed veins.	Detrital leucoxene, rare chromite, zircon, tourmaline. Sparse stressed sericitic quartz veinlets.	Affinities with 383623, 383624. Reflects subtle sericitic alteration associated with early sericitic quart veinlets and incipient silicification marginal to later quartz veins.

59046

APPENDIX 2.

041

599048 (29)

Project TAILINGS DAM Analyses For

Ordinate	Sample No.	Depth	Colour	Ordinate	Sample No.	Depth	Colour
0800 N							
3000 E	396638	NO SAMPLE					
3012.5	396639	"	"				
3025	396640	NO SAMPLE					
3037.5	396641	"	"				
3050	396642	NO SAMPLE					
3062.5	396643	"	"				
3075	396644	NO SAMPLE					
3087.5	396645	"	"				
3100	396646	NO SAMPLE					
3112.5	396647	"	"				
25	396648	50	GY/BR.				
3137.5	396649	40	GY/BR				
3150	396650	50	GY/BR				
3162.5	396651	40	GY/BR				
3175	396652	40	GY/BR				
3187.5	396653	70	GY/BR				
3200	396654	70	GY/BR				
3212.5	396655	90	YW/GY				
3225	396656	70	GY/BR				
3237.5	396657	80	YW/GY				
3250	396658	60	OR/GY				
3262.5	396659	80	GY				
3275	396660	60	WH/GY				
3287.5	396661	60	GY				
3300	396662	30	GY				

048 599049 (28)

Project Tailings Dam Site Analysis For

Ordinate	Sample No.	Depth	Colour
000N			
3000E	396528	No Sample * STD	
12.5	529	80	gy/bk
25	396530	70	bk
37.5	531	70	gy/bk
50	532	90	bk
62.5	533	80	gy/bk
75	534	80	gy/bk
87.5	535	1.00	gy/bk
3100E	536	60	br/bk
12.5	537	70	gy/br
25	538	70	br/bk
37.5	539	60	yw/br
50	396540	60	gy/bk
62.5	541	90	gy/br
75	542	70	bk
87.5	543	1.00	gy/br
3200E	544	90	bk
3212.5	396545	70	gy/br

Ordinate	Sample No.	Depth	Colour

049 599050

Project Tailings Dam site Analyses for EVENS (27)

Ordinate	Sample No.	Depth	Colour
200N			
3000E	396402	90	94/br
12.5	403	80	94/br
25	404	80	94/br
37.5	405	70	94/br
50	406	50	94/wh/br
62.5	407	60	yw/br/94
75	408	60	94/br
87.5	409	1.00	94/br
100E	396410	60	94/br
12.5	411	80	94/br
25	412	70	94/br
37.5	413	60	94/br
50	414	70	94/br
62.5	415	60	94/br
75	416	80	dk/br
87.5	417	80	94/br
3200E	418	70	dk/94
12.5	419	40	br/bk
75	396420	80	94
37.5	421	1.00	yw/br
50	422	1.00	yw/94/br
62.5	423	1.00	yw/br
75	424	50	dk/94
87.5	425	60	94/br
3300E	426	90	94/br
12.5	427	1.00	94/br
25	428	90	dk/br
37.5	429	1.00	94/br
50	396430	80	dk/br
62.5	431	80	94/br
75	432	90	94/br

Ordinate	Sample No.	Depth	Colour
11200 N			
87.5	396433	90	94/br
3400E	434	70	94/br
12.5	435	70	94/br
25	436	60	94/br
37.5	437	70	94/br
50	438	70	dk/br
62.5	439	80	94/br
75	396440	60	dk/br
87.5	441	80	94/br
3500E	442	70	dk/br
12.5	443	60	94/br
25	444	70	dk/br
37.5	445	50	94/br
50	446	80	br/94
62.5	447	90	94/br/yw
75	448	60	br/94
87.5	449	No Sample	
3600E	396450	50	94/br
12.5	451	80	94
25	452	60	94
37.5	453	60	94
50	454	30	94
62.5	455	60	94/br
75	456	50	94
87.5	457	30	94/br
3700E	458	50	94
12.5	459	30	94
25	460	60	94
37.5	396461	80	94
50	462	70	94
62.5	463	60	yw/br

(050 599051 EVENS (27)

Project Tailings Dam Site Analyses for

Ordinate	Sample No.	Depth	Colour	to Ordinate	Sample No.	Depth	Colour
1200N							
3775E	396464	60	or/br				
875	465	70	br				
3800E	466	60	or/br				

Project 051 Tailings Dam Site Analyses for EVENS (27)

Coordinate	Sample No.	Depth	Colour
11100 N			
3000 E	396468	60	gy/br
12.5	469	No Sample	
25	396470	60	gy/br
37.5	471	80	gy/br
50	472	70	br
62.5	473	60	lgt/br
75	474	70	br
87.5	475	80	br
3100 E	476	70	br
12.5	477	70	lgt/br
25	478	70	br
37.5	479	No Sample	
50	396480	50	lgt/br
62.5	481	70	lgt/br
75	482	60	br/gy
87.5	483	80	dk/br/gy
3200 E	484	90	bk/gy
12.5	485	90	bk/gy
25	486	80	gy/br
37.5	487	1.00	gy/br
50	488	1.00	gy
62.5	489	80	bl/gy
75	396490	70	bl/gy
87.5	491	80	bl/gy
3300 E	492	80	bl/gy
12.5	493	70	gy/br
25	494	80	gy/br
37.5	495	80	gy/br
50	496	80	bk/gy
62.5	497	1.00	gy
75	498	80	bl/gy

Coordinate	Sample No.	Depth	Colour
11100 N			
87.5	499	80	bl/gy
3400 E	396500	90	bl/gy
12.5	501	90	bl/gy
25	502	1.00	bl/gy
37.5	503	1.00	bl/gy
50	504	1.00	gy
62.5	505	80	gy
75	506	1.00	gy/br
87.5	507	60	gy/br
3500 E	508	60	gy/br
12.5	509	70	gy
25	396510	70	gy/br
37.5	511	60	gy
50	512	70	lgt/br
62.5	513	70	gy/br
75	514	70	gy/br
87.5	515	80	dk/gy
3600 E	516	80	dk/gy/br
12.5	517	80	gy/bk
25	518	80	gy/bk
37.5	519	80	gy
50	396520	80	dk/gy/bk
62.5	521	No Sample	
75	522	50	gy
87.5	523	50	gy
3700 E	524	50	dk/gy
12.5	525	60	dk/gy
25	526	60	dk/br/bk

599052

Project 052 Tailings Dam Site — Analyst Evens — (27)

Co-ordinate	Sample No.	Depth	Colour
10900N			
3000E	396556	60	dk/gy
12.5	557	80	gy/br
25	558	50	dk/gy
37.5	559	60	gy
50	396560	No Sample * STD 2	
62.5	561	No Sample	
75	562	No Sample * SAND	
87.5	563	1.00	gy/br
3100E	564	60	gy/br
12.5	565	60	gy/br
25	566	70	gy/br
37.5	567	70	gy/br
50	568	60	gy/br/yw
62.5	569	1.00	gy/br
75	396570	90	gy/yw
87.5	571	80	yw/gy/br
3200E	572	80	gy/yw
12.5	573	1.00	gy/br
25	574	95	br
37.5	575	1.00	gy/br
50	576	60	gy/br
62.5	577	1.00	yw/gy/br
75	578	70	gy/br
87.5	579	90	yw/br
3300	396580	80	gy/wh
12.5	581	50	gy/br
25	582	80	gy/wh
37.5	583	1.00	gy/br
50	584	80	gy/br
62.5	585	80	gy/br
75	586	80	gy/br

Co-ordinate	Sample No.	Depth	Colour
10900N			
87.5	396587	1.00	gy/br
3400E	588	60	br
12.5	589	70	br/bk
25	396590	70	gy/br
37.5	591	60	gy/br
50	592	80	gy/yw
62.5	593	70	gy/br
75	594	90	gy/br
87.5	595	80	gy/br
3500E	596	70	gy/br
12.5	597	90	yw/br/gy
25	598	60	gy/yw/br
37.5	599	80	gy/br
50	396600	80	gy/br
62.5	396601	1.00	gy/br
75	602	70	br/bk
87.5	603	60	gy/br
3600E	604	70	gy/br/yw
12.5	605	40	yw/br
25	606	60	gy/br
37.5	607	70	gy/br
50	608	80	gy/yw/br
62.5	609	30	yw/br
75	396610	70	gy/yw/br
87.5	611	80	gy/yw/br
3700E	612	80	br/bk
12.5	613	80	gy
25	614	70	gy/bk
37.5	615	80	dk/gy/br
50	616	90	dk/gy
62.5	617	80	gy

599053

Project 053 Tailings Dam Site Analyses For EVANS (27)

Co-ordinate	Sample No.	Depth	Colour
10900N 3775E	396618	70	bk/gy
87.5	619	80	gy
3800E	396620	80	bk
12.5	621	90	gy
25	622	80	bk/gy
37.5	623	80	dk/gy/br
50	624	90	dk/gy
62.5	625	1.00	dk/gy/br
75	626	70	dk/gy
87.5	627	90	gy
3900E	628	80	gy/bk
12.5	629	80	gy
25	396630	80	gy/bk
37.5	631	90	gy/br
50	632	90	gy/bk
62.5	633	90	gy
75	634	90	gy/bk
87.5	635	90	gy
4000	636	70	gy/br

Co-ordinate	Sample No.	Depth	Colour
10900 N			

599054

Project 054 Tailings Dam. Analysis for EVENS (27)

Co-ordinate	Sample No.	Depth	Colour
10700 Nth.			
3000E	396664		
12.5	665	50	gy/BR
25	666	60	wh/gy/BR.
37.5	667	60	wh/gy
50	668	1.00	gy/BR.
62.5	669	70	wh/gy
75	670	1.00	gy/BR.
87.5	671	60	Yw/wh/gy
3100E	672	1.00	gy/BR.
12.5	673	70	wh/gy
25	674	1.00	gy/BR.
37.5	675	60	BR.
50	676	80	gy/BR
62.5	677	90	BR
75 *	678 SAMPLE MISSING	1.00	gy/BR * STD 2
87.5	679	NO	Sample
3200E *	680	NO	Sample * SAND
12.5	681	NO	Sample
25 *	682	NO	Sample * STD 2
37.5	683	NO	Sample
50	684	90	gy/BR
62.5	685	80	BR/gy
75 *	686	NO	Sample * STD 2
87.5	687	NO	Sample
3300E *	688	NO	Sample * SAND
12.5	689	90	wh/gy
25	690	60	gy/BR
37.5	691	90	wh/gy
50	692	90	gy/BR
62.5	693	80	gy/BR
75	694	80	gy/BR

Co-ordinate	Sample No.	Depth	Colour
10700 Nth. 87.5	396695	90	gy/BR
3400E *	696	1.00	gy/BR.
12.5	697	90	gy/BR
25 *	698	1.00	gy/BR
37.5	699	90	gy/BR
50	700	1.00	yw/gy/BR
62.5	701	80	BR.
75	702	90	gy/BR
87.5	703	80	BR.
3500E	704	1.00	gy/BR
12.5	705	90	gy
25	706	1.00	gy/BR
37.5	707	90	gy/BR
50	708	90	gy/BR
62.5	709	80	gy/BR
75	710	90	gy/BR
87.5	711	80	gy/BR
3600E	712	1.00	gy/BR
12.5	713	90	gy/BR
25	714	90	gy/BR
37.5	715	90	gy/BR
50	716	1.00	gy/BR
62.5	717	90	gy/BR
75	718	1.00	gy/BR
87.5	719	90	gy/BR
3700E	720	90	gy/BR
12.5	721	90	gy/BR
25	722	1.00	gy/BR
37.5	723	90	gy/BR
50	724	70	BR/BK
62.5	725	90	gy/BR
75	726	80	BR/BK

599055

Project Tailings Dam. Analyses for EVANS (27)

Ordinate	Sample No.	Depth	Colour	Co Ordinate	Sample No.	Depth	Colour
0700	Nth.						
3787·5	396727	90	gy/BR				
3800E	728	60	BR/BK				
12·5	729	80	BR				
25	730	60	BR/BK				
37·5	731	90	BR				
50	732	80	gy/BR				
62·5	733	70	BR				
75	734	60	gy/BR				
87·5	735	80	BR/gy				
3900E	736	50	gy/BR				
12·5	737	50	BR/gy				
25	738	90	gy/BR				
37·5	739	70	BR/gy				
50	740	1·00	gy/BR				
62·5	741	70	BR/gy				
75	742	90	gy/BR				
87·5	743	50	BR				
4000E	744	1·00	gy/BR				

599056

Project Tailings Dam Site Analyses for EVENS

(26)

Ordinate	Sample No.	Depth	Colour
11000N			
3150E	395402		
62.5	403		
75	404		
87.5	405		
3200E	406		
12.5	407		
25	408	1.00	94
37.5	409	1.00	94
50	395 410	1.00	94
62.5	411	90	94
75	412	1.00	94
87.5	413	90	94
3300E	414	90	br/94
12.5	415	70	94/br
25	416	60	4w/br/94
37.5	417	90	94/4w/br
50	418	90	4w/br/94
62.5	419	90	94
75	395420	90	br/94
87.5	421	90	94
3400E	422	90	94
12.5	423	90	94/wh
25	424	80	94/wh
37.5	425	90	94
50	426	80	94/br
62.5	427	40	94
75	428	90	94/br
87.5	429	90	94/br
3500E	395430	1.00	94/4w
12.5	395431	70	94/br
25	432	1.00	94/br

Ordinate	Sample No.	Depth	Colour
11000 N		70	94
3537.5	433	70	94
50	434	90	94/br
62.5	435	70	94/br
75	436	1.00	94/bk
87.5	437	90	94/br
3600E	438	60	94/br
12.5	439	70	br
25	395440	80	br/bk
37.5	441	80	bk/br
50	442	90	br/bk
67.5	443	80	94/br
75	444	1.00	br/bk
87.5	445	90	94
3700E	*STD 446	No Sample creek	
12.5	447	" "	"
25	*STD 448	" "	"
37.5	449	" "	"
50	395450	1.00	br
62.5	451	1.00	4w/br/94
75	*STD 452	No Sample creek	
87.5	453	80	94/br
3800E	454	40	br
12.5	455	50	br
25	456	80	94/br
37.5	457	50	94
50	458	80	94/br
62.5	459	80	94
75	395460	90	94/br
87.5	461	70	94/br
3900E	462	80	94/br/4w
12.5	463	80	94/br

Project 057 Tailings Dam Site Analyses for EVENS (26)

Ordinate	Sample No:	Depth	Colour
11 000N			
3925E	395464	1·00	94/br/4w
37·5	465	90	94/br
50	466	90	94/br/4w
62·5	467	80	4w/br/94
75	468	80	94/br
87·5	469	70	br
4000E	470	1·00	94/br
12·5	471	80	94/br
25	472	1·00	94/br
37·5	473	50	bk
50	474	50	bk
62·5	475	90	94/or/br
75	476	60	94/br
87·5	477	70	bk
4100E	478	80	bk
12·5	479	50	bk
25	480	80	4w/br
37·5	481	60	94
50	482	60	bk
62·5	483	30	bk
75	484	70	br/bk
87·5	485	60	94/br
4200E	486	1·00	94/br
12·5	487	70	94
25	488	60	94/br
37·5	489	80	94/4w
50	490	1·00	4w/94/br
62·5	491	1·00	94
75	492	70	bk
87·5	493	90	94/br
4300E	494	1·00	4w/br

Ordinate	Sample No:	Depth	Colour
11 000N			
4312·5E	395495	1·00	94/4w
25	496	No Sample	creek
37·5	497	60	4w/or
50	498	50	4w/or/br
62·5	499	60	94/4w
75	500	40	4w/or/br
87·5	501	70	4w/94
4400E	502	30	4w/br
12·5	503	60	94/4w
25	504	70	or/br
37·5	505	60	4w
50	506	60	4w/br
62·5	507	70	4w/94/br
75	508	1·00	br/wh
87·5	509	90	4w/94
4500E	510	90	94/br
12·5	511	90	4w/94
25	512	60	4w/94/br
37·5	513	50	94
50	514	70	4w/br
62·5	515	50	or
75	516	20	4w/br
87·5	517	60	or
4600E	518	60	or/br
12·5	519	No Sample	creek
25	520	" "	"
37·5	521	50	red/br
50	522	70	red/br
62·5	523	90	bk
75	524	60	bk
87·5	525	1·00	br/bk

599058

C 058

Project Tailings Dam Site Analyses for EVANS (26)

Ordinate	Sample No.	Depth	Colour	Ordinate	Sample No.	Depth	Colour
1000N							
4700E	395526	90	gy/bk				
12.5	527	90	yw/br				
25	528	1.00	yw/br				
37.5	529	90	yw/br				
50	530	70	yw/br				
62.5	531	70	yw/or				
75	532	70	yw/gy				
87.5	533	70	yw/or				
4800E	534	90	yw/br				
[illegible]	535	70	yw/or				
25	536	70	yw/or				
37.5	537	60	or/br				
50	538	80	or/br				
62.5	539	90	or/br				
75	540	60	br				
87.5	541	70	red/br				
4900E	542	1.00	red/br				

599059

059

Project Tailings Dam Site Analysis for EVENS (26)

Coordinate	Sample No.	Depth	Colour
10800N			
3250E	395543		
62.5	544		
75	545		
87.5	546		
3300E	547		
12.5	548		
25	395549	1m	gy
37.5	550	60	gy/br
50	551	50	gy
62.5	552	70	dk/gy
75	553	30	gy
87.5	554	80	gy
3400E	555	90	gy
12.5	556	90	gy
25	557	1m	gy
37.5	558	80	gy
50	559	1m	gy/br
62.5	560	80	gy
75	561	90	gy/br
87.5	562	70	gy
3500E	563	80	yw/br
12.5	564	80	gy
25	565	1m	gy/br
37.5	566	70	bl/gy
50	567	1m	gy/br
62.5	568	80	br/gy
75	569	90	br
87.5	570	80	gy/br
3600E	571	90	br
12.5	572	80	bl/gy
25	573	1m	br/gy

Coordinate	Sample No.	Depth	Colour
10800N			
36 37.5	395574	80	bl/gy
50	575	1m	bk/br
62.5	576	80	bk/gy
75	577	90	bk/br
87.5	578	90	bk/gy/br
3700E	579	90	bk
12.5	580	90	bk
25	581	1m	bk
37.5	582	70	bl/gy/br
50	583	90	bk
62.5	584	90	bk
75	585	1m	bk
87.5	586	80	gy/br
3800E	587	1m	bk/gy
12.5	588	80	bk/gy
25	589	90	bk/gy
37.5	590	60	gy
50	591	90	bk/gy
62.5	592	60	gy
75	593	90	bk/gy
87.5	594	80	gy/br
3900E	595	80	bk/gy
12.5	596	70	gy/br
25	597	1m	bk
37.5	598	80	gy/bk
50	599	1m	bk
62.5	600	80	bk
75	601	1m	bk/br
87.5	602	80	bk
4000E	603	80	bk/gy
12.5	604	90	gy/bk

599060

Project 060 Tailings Dam Site Analyses Ltd EVENS (26)

Co-Ordinate	Sample No.	Depth	Colour
10800N			
4025E	395605	90	bk/gy
37.5	606	70	br/gy
50	607	80	bk
62.5	608	70	gy/bk
75	609	90	bk/gy
87.5	610	90	bk/gy
4100E	611	80	bk
12.5	612	80	bk/gy
25	613	80	bk/gy
37.5	614	90	bk/gy
50	615	90	bk/gy
62.5	616	70	gy
75	617	70	bk/gy
87.5	618	70	bk
4200E	619	70	bk
12.5	620	70	bk/br
25	621	80	yw/br
37.5	622	60	gy/br
50	623	90	or/br
62.5	624	50	or/br/gy
75	625	lm	br
87.5	626	50	or/br/gy
4300E	627	90	gy/br/yw
12.5	628	80	gy/br
25	629	90	gy
37.5	630	lm	gy/bk
50	631	lm	yw/br
62.5	632	lm	gy/br
75	633	90	yw/br
87.5	634	60	br
4400E	635	70	red/br

Co-Ordinate	Sample No.	Depth	Colour
10800N			
4412.5E	395636	60	or/br
25	637	No Sample	
37.5	638	No Sample	
50	639	70	yw/br
62.5	640	50	or/br
75	641	70	yw/br
87.5	642	60	gy/br
4500E	643	70	yw br
12.5	644	70	or/br/gy
25	645	70	yw/br
37.5	646	70	yw/gy
50	647	70	yw/br
62.5	648	60	yw/gy
75	649	70	yw/br
87.5	650	60	gy/br/yw
4600E	651	90	yw
12.5	652	70	or/br/yw
25	653	80	red/yw
37.5	654	60	or/br/gy
50	655	lm	yw/br
62.5	656	60	or/br/gy
75	657	70	yw/br
87.5	658	70	or/br
4700E	659	90	yw/br
12.5	660	80	or
25	661	lm	yw/br
37.5	662	70	or/br
50	663	90	yw/br
62.5	664	70	yw/or
75	665	90	or/yw/br
87.5	666	60	or/br

599061

061

Project Tailings Dam Site Analyses for EVENS (26)

Ordinate	Sample No.	Depth	Colour
800N			
400E	395 667	60	or/br
12.5	668	50	yw/or
25	669	1m	or/br
37.5	670	60	or/br
50	671	70	or/yw/br
62.5	672	70	or/br
75	673	70	or/br
87.5	674	60	or/br
900E	395 675	60	or/br

Ordinate	Sample No.	Depth	Colour

599062

599063

Project 062 Tailings Dam Site Analysis For (EVEN) (26)

Ordinate	Sample No.	Depth	Colour
10700N			
3400E	395676	70	bk/gy
12.5	677	90	gy/bk
25	678	90	bk/gy
37.5	679	1.00	bk/gy
50	680	90	gy
62.5	681	1.00	gy/br
75	682	80	gy
87.5	683	80	gy/br
3500E	395684	70	gy
12.5	685	70	gy/br
25	686	70	gy
37.5	687	1.00	bk
50	688	80	gy/bk
62.5	689	90	bk/gy
75	690	80	gy/bk
87.5	691	1.00	bk/gy
3600E	395 692	80	bk
12.5	693	1.00	bk/gy
25	694	80	bk
37.5	695	1.00	bk/gy
50	696	90	bk/gy
62.5	697	1.00	bk/gy
75	698	90	bk/gy
87.5	699	1.00	bk
3700E	395 700	80	bk/gy
12.5	701	1.00	bk/gy
25	702	70	gy
37.5	703	80	gy
50	704	60	gy
62.5	705	90	yw/br
75	706	80	bk
87.5	707	1.00	bk

Ordinate	Sample No.	Depth	Colour
10600N			
3800E	395708	80	bk
12.5	709	1.00	bk
25	710	70	gy/bk
37.5	711	1.00	gy/bk
50	712	90	bl/bk
62.5	713	1.00	gy
75	714	70	gy
87.5	715	1.00	gy/br
3900E	395 716	60	gy
12.5	717	90	yw/br
25	718	70	dk/gy
37.5	719	90	yw/br
50	720	60	or/br
62.5	721	1.00	yw/br
75	722	70	gy
87.5	723	1.00	yw/br
4000E	395 724	90	gy
12.5	725	1.00	gy
25	726	1.00	gy
37.5	727	1.00	gy
50	728	1.00	gy/bk
62.5	729	1.00	gy/bk
75	730	80	gy
87.5	731	1.00	gy/yw
4100E	395 732	90	gy
12.5	733	90	gy/br
25	734	90	gy/bl
37.5	735	1.00	gy/yw
50	736	70	gy
62.5	737	90	yw/br
75	738	70	gy
87.5	739	90	yw/br

063 599064

Project Tailings Dam Site Analyses For EVANS. (26)

Ordinate	Sample No.	Depth	Colour
10600N			
4200E	395740	80	gy
12.5	741	1.00	yw
25	*STD 742	No Sample creek	
37.5	743	" "	"
50	*STD 744	" "	"
62.5	745	1.00	yw
75	746	90	br
87.5	747	1.00	or/br
4300E	395748	80	or/br/gy
12.5	749	1.00	br/gy
25	750	70	gy/wh
37.5	751	80	br/gy
50	752	70	gy
62.5	753	80	or/yw
75	754	70	or/br
87.5	755	70	or/yw
4400E	395756	70	yw/or
12.5	757	80	or/yw
25	*STD 758	No Sample creek	
37.5	759	80	or
50	760	60	or/yw
62.5	761	90	or
75	762	60	or/br
87.5	763	70	or
4500E	395764	70	gy/br/br
12.5	765	70	or/br
25	766	70	gy/br
37.5	767	80	or/br
50	768	70	or/br
62.5	769	80	or/br
75	770	60	gy/br
87.5	395771	70	or/br

Ordinate	Sample No.	Depth	Colour
10600N			
4600E	395772	70	or/br
12.5	773	80	yw/or/br
25	774	50	or/br
37.5	775	90	yw/or/br
50	776	50	gy/or/br
62.5	777	50	yw/gy/br
75	778	70	gy/yw/br
87.5	779	70	yw/gy/br
4700E	395780	60	gy/br
12.5	781	60	or/bk
25	782	60	gy/br
37.5	783	80	gy/br
50	784	70	gy/yw/br
62.5	785	70	or/gy/br
75	786	70	gy/yw/br
87.5	787	1.00	gy/br
4800E	395788	80	gy/br
12.5	789	70	gy/br
25	790	90	gy
37.5	791	90	gy/br
50	792	70	gy/br
62.5	793	1.00	gy/br
75	794	70	lgt/gy/br
87.5	795	1.00	gy/br
4900E	395796	80	gy

Project Tailings Dam Site 064 Analyses For EVENS (26)

Ordinate	Sample No.	Depth	Colour
10400N			
3600E	395798	100 c	BK
12.5	99	80 c	GY/BK
25	395800	100 c	GY/BK
37.5	01	90 c	" "
50	02	100	" "
62.5	03	90	" "
75	04	100	BK
87.5	05	90	GY/BK
3700E	06	80	BK
12.5	07	30	"
25	08	90	BR
37.5	09	40	" "
50	395810	90	GY/BK
62.5	11	90	GY/BK
75	12	80	" "
87.5	13	70	" "
3800E	14	90	" "
12.5	15	60	" "
25	16	80	" "
37.5	17	90	" "
50	*STD' 18	no sample	
62.5	19	70	GY/BR
75	395820	40	" "
87.5	21	80	" "
3900E	22	80	" "
12.5	23	80	" "
25	24	100	GY
37.5	25	60	GY/OR/BR
50	26	100	YW/GY/BR
62.5	27	70	GY/BK
75	28	80	" "
87.5	395829	70	GY

Ordinate	Sample No.	Depth	Colour
10400N			
4000E	395830	90	GY
12.5	31	70	GY/OR/BR
25	32	90	YW/BR
37.5	33	70	OR/BR
50	34	60	YW/OR
62.5	35	30	OR/BR
75	36	40	" "
87.5	37	60	RED/OR/BR
4100E	38	100	RED/OR
12.5	39	40	RED/BR
25	395840	100	GY/YW
37.5	41	100	OR/YW
50	42	90	GY/YW
62.5	43	60	GY/OR/BR
75	44	100	OR/GY
87.5	45	100	OR/YW
4200E	46	100	RED/BR
12.5	47	no sample	
25	48	100	RED/BR
37.5	49	70	BR
50	395850	90	GY/YW
62.5	51	100	GY
75	52	100	BR/BK
87.5	53	70	BR
4300E	54	80	RED/BR
12.5	55	70	GY/OR
25	56	100	BK
37.5	57	80	GY/BK
50	58	100	BK/GY
62.5	59	100	GY/BK
75	395860	40	GY/BK
87.5	61	90	BR

065 599066

Project Tailings Dam Site Analyses For EVENS (26)

Ordinate	Sample No.	Depth	Colour
10400N			
4400E	395862	100	BLK
12.5	63	80	BLK
25	64	80	GY/BLK
37.5	65	80	GY/BLK
50	66	80	GY/BLK
62.5	67	80	GY
75	68	90	GY/BLK
87.5	69	90	GY
4500E	395870	100	GY/BLK/OR
12.5	71	80	GY
25	72	90	BLK/GY
37.5	73	80	GY/BLK
50	74	80	" "
625	75	80	GY
75	76	60	GY/BLK
87.5	77	80	GY
4600E	78	60	GY/BK
12.5	79	80	" "
25	395880	100	" "
37.5	81	60	GY
50	82	100	GY/BK
625	83	70	" "
75	84	50	" "
87.5	85	40	" "
4700E	86	70	" "
12.5	87	30	" "
25	88	30	" "
37.5	99	50	" "
50	395890	70	" "
62.5	91	50	" "
75	92	60	" "
87.5	93	60	" "

Ordinate	Sample No.	Depth	Colour
10400N			
4600E	395894	80	GY/WH
12.5	95	70	OR/BR/GY
25	96	100	GY/RW/BR
37.5	97	no sample	
50	~~ASTD~~ 98	"	"
62.5	99	60	GY
75	395900	90	" "
87.5	01	80	" "
4900E	395902	100	GY/BR

066 599067

Project Tailings Dam Site Analyst For EVENS (26)

Ordinate	Sample No.	Depth	Colour
42000N			
3750E	395904	70	gy/or/br
625	05	70	yw/br
75	06	80	gy/or/br
875	07	80	gy/br/yw
4000E	395908	80	gy/or/br
3812.5	09	60	gy/br
75	10	70	gy
375	11	70	gy/br
50	12	60	gy
62.5	13	1·00	yw/gy/br
75	14	80	gy/or/br
87.5	15	1·00	yw/gy/br
3900E	395916	90	gy
12.5	17	1·00	gy/br
25	18	90	gy
37.5	19	90	gy/br
50	20	70	gy
62.5	21	80	yw/gy
75	22	50	or/br/gy
87.5	23	60	yw/br
4000E	395924	60	br
12.5	25	60	yw/br
25	26	60	or/br
37.5	27	1·00	gy
50	28	1·00	gy
62.5	29	90	gy
75	30	60	or/br
87.5	31	1·00	red/br
4100E	395932	70	or/br
12.5	33	70	yw/br
25	34	40	br
37.5	35	60	red/br

Ordinate	Sample No.	Depth	Colour
10700N			
41 50	395936	* STD No Sample	creek
62.5	37	1·00	br
75	38	1·00	or/br/gy
87.5	39	90	or/br
4200E	395940	90	or/br/gy
12.5	41	90	lgt/br
25	42	20	or/br
37.5	43	70	red/br
50	44	30	or/br
62.5	45	50	red/br
75	46	30	or/br
87.5	47	60	red/br
4300E	395948	30	or/br
12.5	949	60	or/yw/gy
25	950	20	or/br
37.5	951	40	red/yw/b
50	952	50	red/br
62.5	953	20	red/br
75	954	80	gy/bk
87.5	955	1·00	yw/br
4400E	395956	80	gy
12.5	957	80	br
25	958	20	gy
37.5	959	40	br/gy
50	960	90	bk
62.5	961	70	br/gy
75	962	70	gy/br/b
87.5	963	90	br/gy
4500E	395964	70	gy
12.5	965	60	br/gy
25	966	70	gy/wh
37.5	967	60	br/gy

067 599068

Project Tailings Dam Site Analyst for EVENS (26)

Ordinate	Sample No.	Depth	Colour	Ordinate	Sample No.	Depth	Colour
7200N							
4550	395968	40	gy				
625	969	80	br/bk				
75	970	60	gy/bl				
87.5	971	70	br				
6000E	395972	50	gy				
12.5	973	50	gy/bk				
25	974	50	gy/br				
37.5	975	70	gy/bk				
50	976	60	gy				
625	977	70	gy				
75	978	60	gy/br				
87.5	979	1.00	br/gy				
4700E	395980	80	gy				
12.5	981	1.00	bk/gy				
25	982	80	gy				
37.5	983	1.00	bk/gy				
50	984	80	gy/bk				
62.5	985	1.00	br/gy				
75	986	60	br/gy				
87.5	987	90	br/gy				
4800E	395988	60	gy/yw/br				
12.5	989	80	yw/br/gy				
25	990	60	gy				
37.5	991	80	yw/gy				
50	992	60	gy/br				
62.5	993	1.00	gy/br				
75	994	70	gy				
87.5	995	70	gy				
4900E	395996	70	gy/br				

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A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04473

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
2379	

DATE RECEIVED	RESULTS REQUIRED
12/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	21/05/87	1	9

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
	396646/62/2	SO Prep: 016							Cu,Pb,Zn,Ag/101		
	396646/62/2	SO							Hg/122		

RESULTS TO

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

RESULTS TO

REMARKS

DAMSITE SOILS
10800N

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
.	23.3.08.04473	21/05/87	2379	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	396646 *STD2	20	135	130	<0.5	0.185				
2	396648	5	10	10	<0.5	0.075				
3	396650	5	<5	10	<0.5	0.025				
4	396652	5	<5	10	<0.5	0.040				
5	396654	5	15	70	<0.5	0.070				
6	396656	20	40	15	<0.5	0.100				
7	396658	25	25	10	<0.5	0.075				
8	396660	10	55	10	<0.5	0.070				
9	396662	5	40	15	<0.5	0.075				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.005				
24	UNITS	PPM	PPM	PPM	PPM	PPM				
25	METHOD	101	101	101	101	122				

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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(-070 599071

MACK (28)

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ANALYTICAL REPORT No. 23.3.08.04426

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
2363	

DATE RECEIVED	RESULTS REQUIRED
22/04/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	24/04/87	1	9

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	396528/44/2	50	Prep: 01						Cu,Pb,Zn,Ag/101		
	396528/44/2	50							Hg/122		

RESULTS TO

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

RESULTS TO

REMARKS

Tailings Dam Site

11 000N

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
	23.3.08.04426	24/04/87	2363	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	396528 *STD 2	20	180	125	<0.5	0.185				
2	396530	5	5	5	<0.5	0.065				
3	396532	<5	5	20	<0.5	0.040				
4	396534	<5	10	10	0.5	0.040				
5	396536	<5	5	25	<0.5	0.065				
6	396538	<5	5	10	<0.5	0.040				
7	396540	<5	<5	10	<0.5	0.015				
8	396542	<5	<5	10	<0.5	0.025				
9	396544	<5	15	35	<0.5	<0.005				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.005				
24	UNITS	PPM	PPM	PPM	PPM	PPM				
25	METHOD	101	101	101	101	122				

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

072 599073

ANALABS

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ANALYTICAL REPORT No. 23.3.08.04384

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
2352	

DATE RECEIVED	RESULTS REQUIRED
02/04/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	11/05/87	1	145

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SO	Prep: 013,016						Cu,Pb,Zn,Ag/101		
	Various	SO							Hg/122		

RESULTS TO

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

RESULTS TO

REMARKS

Rossite Soils
11200 N
11100 N
10900 N
10700 N

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
	23.3.08.04384	11/05/87	2352	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg
1	396402	<5	20	20	<0.5	0.010
2	396404	<5	10	10	<0.5	0.025
3	396406	<5	10	15	<0.5	0.025
4	396408	<5	<5	20	<0.5	0.020
5	396410	<5	25	20	<0.5	0.025
6	396412	<5	15	15	<0.5	0.020
7	396414	<5	10	10	<0.5	0.025
8	396416	<5	<5	10	<0.5	0.020
9	396418	<5	<5	5	<0.5	0.010
10	396420	<5	<5	5	<0.5	0.025
11	396422	<5	65	35	<0.5	0.030
12	396424	<5	65	25	<0.5	0.035
13	396426	15	45	25	<0.5	0.075
14	396428	<5	55	30	<0.5	0.035
15	396430	5	35	20	<0.5	0.045
16	396432	10	40	10	<0.5	0.035
17	396434	5	40	10	<0.5	0.040
18	396436	10	55	15	<0.5	0.040
19	396438	5	25	15	<0.5	0.060
20	396440	10	45	10	<0.5	0.035
21	396442	15	45	10	<0.5	0.045
22	396444	<5	45	10	<0.5	0.025
23	396446	<5	40	20	<0.5	0.025
24	396448	15	50	25	<0.5	0.060
25	396450	<5	65	20	<0.5	0.045

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04384	11/05/87	2352	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	396452	<5	90	15	<0.5	0.050				
2	396454	5	80	15	<0.5	0.055				
3	396456	<5	90	20	<0.5	0.045				
4	396458	<5	185	25	<0.5	0.070				
5	396460	<5	175	20	<0.5	0.070				
6	396462	10	85	40	<0.5	0.070				
7	396464	25	45	65	<0.5	0.135				
8	396466	25	35	65	<0.5	0.105				
9	396468	<5	60	30	<0.5	0.050				
10	396470	<5	25	10	<0.5	0.020				
11	396472	<5	10	15	<0.5	0.025				
12	396474	<5	<5	10	<0.5	0.015				
13	396476	<5	5	10	<0.5	0.015				
14	396478	<5	<5	10	<0.5	0.025				
15	396480	<5	15	10	<0.5	0.005				
16	396482	<5	15	5	<0.5	0.010				
17	396484	<5	10	15	<0.5	0.010				
18	396486	35	60	110	<0.5	0.020				
19	396488	50	45	30	<0.5	0.075				
20	396490	45	90	40	<0.5	0.095				
21	396492	25	60	25	<0.5	0.065				
22	396494	15	80	30	<0.5	0.065				
23	396496	30	65	35	<0.5	0.065				
24	396498	30	40	35	<0.5	0.080				
25	396500	55	50	50	<0.5	0.065				

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

075 599076

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04384	11/05/87	2352	3 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	396502	25	55	65	<0.5	0.075				
2	396504	25	50	95	<0.5	0.075				
3	396506	25	65	50	<0.5	0.080				
4	396508	10	85	15	<0.5	0.055				
5	396510	10	50	15	<0.5	0.055				
6	396512	<5	45	15	<0.5	0.040				
7	396514	15	80	15	<0.5	0.115				
8	396516	<5	60	5	<0.5	0.055				
9	396518	<5	45	10	<0.5	0.055				
10	396520	5	40	15	<0.5	0.085				
11	396522	<5	90	20	<0.5	0.035				
12	396524	<5	75	15	<0.5	0.045				
13	396526	<5	105	10	<0.5	0.025				
14	396556	<5	10	15	<0.5	0.020				
15	396558	<5	20	10	<0.5	0.010				
16	396560 X STD R	15	190	135	<0.5	0.185				
17	396562 JGND	<5	25	20	<0.5	0.005				
18	396564	<5	35	15	<0.5	0.030				
19	396566	<5	25	10	<0.5	0.055				
20	396568	15	40	25	<0.5	0.030				
21	396570	30	60	25	<0.5	0.015				
22	396572	10	40	20	<0.5	0.045				
23	396574	40	150	75	<0.5	0.075				
24	396576	40	90	230	<0.5	0.200				
25	396578	30	195	35	<0.5	0.165				

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
	23.3.08.04384	11/05/87	2352	4 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	396580	35	145	45	<0.5	0.085				
2	396582	80	185	200	<0.5	0.065				
3	396584	5	325	30	<0.5	0.235				
4	396586	20	220	30	<0.5	0.080				
5	396588	25	165	30	<0.5	0.065				
6	396590	20	120	35	<0.5	0.230				
7	396592	40	85	85	<0.5	0.065				
8	396594	10	85	30	<0.5	0.040				
9	396596	15	80	20	<0.5	0.040				
10	396598	80	145	160	<0.5	0.085				
11	396600	25	75	35	<0.5	0.055				
12	396602	40	70	60	<0.5	0.095				
13	396604	15	70	20	<0.5	0.110				
14	396606	10	80	25	<0.5	0.085				
15	396608	25	95	85	<0.5	0.055				
16	396610	25	95	50	<0.5	0.035				
17	396612	5	85	10	<0.5	0.045				
18	396614	15	60	10	<0.5	0.050				
19	396616	5	50	10	<0.5	0.055				
20	396618	<5	50	10	<0.5	0.030				
21	396620	5	75	15	<0.5	0.065				
22	396622	40	130	15	<0.5	0.085				
23	396624	20	180	15	<0.5	0.055				
24	396626	<5	200	10	<0.5	0.030				
25	396628	<5	110	10	<0.5	0.030				

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

599078 **ANALABS**

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

077

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04384	11/05/87	2352	5 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg
1	396630	<5	80	10	<0.5	0.050
2	396632	5	75	15	<0.5	0.060
3	396634	<5	50	30	<0.5	0.050
4	396636	<5	125	20	<0.5	0.035
5	396664	<5	55	15	<0.5	0.100
6	396666	15	95	25	<0.5	0.075
7	396668	25	155	30	<0.5	0.220
8	396670	5	175	15	<0.5	0.090
9	396672	<5	100	15	<0.5	0.060
10	396674	5	80	10	<0.5	0.075
11	396676	15	95	15	<0.5	0.090
12	396678 ASTD 2	15	175	120	<0.5	0.195
13	396680 SAND	<5	20	25	<0.5	0.015
14	396682 ASTD 2	20	160	130	<0.5	0.195
15	396684	<5	35	10	<0.5	0.105
16	396686 ASTD 2	20	175	140	<0.5	0.205
17	396688 SAND	<5	30	20	<0.5	0.020
18	396690	10	80	15	<0.5	0.055
19	396692	5	90	30	<0.5	0.075
20	396694	<5	85	20	<0.5	0.060
21	396696	<5	120	15	<0.5	0.040
22	396698	<5	250	15	<0.5	0.075
23	396700	25	225	80	<0.5	0.075
24	396702	<5	100	20	<0.5	0.035
25	396704	<5	75	30	<0.5	0.045

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
	23.3.08.04384	11/05/87	2352	6 OF 6

TUBE No.	SAMPLE No.	Cu	Rb	In	Ag	Hg				
1	396706	<5	60	15	<0.5	0.035				
2	396708	<5	50	15	<0.5	0.035				
3	396710	<5	40	15	<0.5	0.030				
4	396712	<5	45	20	<0.5	0.035				
5	396714	<5	40	25	<0.5	0.040				
6	396716	<5	45	15	<0.5	0.035				
7	396718	<5	40	15	<0.5	0.045				
8	396720	10	50	25	<0.5	0.100				
9	396722	40	35	10	<0.5	0.105				
10	396724	<5	45	25	<0.5	0.035				
11	396726	<5	55	35	<0.5	0.035				
12	396728	<5	55	20	<0.5	0.030				
13	396730	5	60	15	<0.5	0.075				
14	396732	10	55	15	<0.5	0.035				
15	396734	10	50	15	<0.5	0.035				
16	396736	5	60	15	<0.5	0.040				
17	396738	20	75	10	<0.5	0.030				
18	396740	10	55	10	<0.5	0.040				
19	396742	20	190	25	<0.5	0.190				
20	396744	15	180	30	<0.5	0.145				
21										
22										
23	DETECTION	5	5	5	0.5	0.005				
24	UNITS	PPM	PPM	PPM	PPM	PPM				
25	METHOD	101	101	101	101	122				

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

599080

MACK. (26)

079

ANALABS

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Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04284

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
2325	

DATE RECEIVED	RESULTS REQUIRED
03/03/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
12	20/05/87	1	290

DATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER ROW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SO	Prep: 005,013,016						Cu,Pb,Zn,Ag/101		
	Various	SO							Hg/122		

RESULTS TO

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

RESULTS TO

REMARKS

DAMSITE SOILS

10200 N
10400 N
10600 N
10800 N
11000 N

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
hole 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
issue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

AUTHORISED OFFICER

080 599081

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04284	20/05/87	2325	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
	395408	85	75	280	<0.5	0.205				
	395410	30	65	90	<0.5	0.085				
3	395412	10	65	980	<0.5	0.045				
	395414	15	55	45	<0.5	0.085				
5	395416	20	85	50	<0.5	0.065				
	395418	50	365	155	<0.5	0.265				
	395420	25	130	75	<0.5	0.095				
8	395422	50	75	150	<0.5	0.055				
	395424	50	75	70	<0.5	0.060				
10	395426	40	70	100	<0.5	0.055				
	395428	25	45	80	<0.5	0.055				
	395430	80	105	150	<0.5	0.085				
13	395432	25	50	20	<0.5	0.115				
	395434	25	60	25	<0.5	0.125				
15	395436	10	90	10	<0.5	0.050				
	395438	10	45	15	<0.5	0.045				
	395440	5	40	20	<0.5	0.040				
18	395442	<5	70	20	<0.5	0.045				
	395444	35	60	110	<0.5	0.065				
20	395446 X STD'	25	215	165	<0.5	0.175				
	395448 X STD'	20	210	160	<0.5	0.165				
22	395450	5	70	25	<0.5	0.050				
	395452 X STD'	20	190	140	<0.5	0.175				
	395454	<5	155	20	<0.5	0.060				
25	395456	25	170	20	<0.5	0.145				

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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599082 **ANALABS**

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

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
[redacted]	23.3.08.04284	20/05/87	2325	2 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
[redacted]	395458	15	110	15	<0.5	0.045				
[redacted]	395460	15	90	20	<0.5	0.045				
3	395462	30	110	20	<0.5	0.090				
[redacted]	395464	25	75	15	<0.5	0.035				
5	395466	10	80	25	<0.5	0.040				
[redacted]	395468	10	80	20	<0.5	0.045				
[redacted]	395470	10	65	15	<0.5	0.050				
8	395472	10	65	20	<0.5	0.075				
[redacted]	395474	<5	55	15	<0.5	0.045				
10	395476	20	90	15	<0.5	0.055				
[redacted]	395478	10	45	15	<0.5	0.045				
[redacted]	395480	25	60	35	<0.5	0.070				
13	395482	15	40	20	<0.5	0.060				
[redacted]	395484	20	35	15	<0.5	0.060				
15	395486	20	40	20	<0.5	0.070				
[redacted]	395488	15	45	20	<0.5	0.080				
[redacted]	395490	30	40	25	<0.5	0.075				
[redacted]	395492	15	35	25	<0.5	0.055				
[redacted]	395494	20	90	50	<0.5	0.070				
20	395498	10	10	30	<0.5	0.050				
[redacted]	395500	<5	15	20	<0.5	0.025				
22	395502	<5	10	30	<0.5	0.035				
[redacted]	395504	<5	10	25	<0.5	0.045				
[redacted]	395506	<5	10	15	<0.5	0.020				
25	395508	<5	<5	20	<0.5	0.045				

Results in ppm unless otherwise specified
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

082

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.88.04284	20/05/87	2325	3 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395510	20	30	25	<0.5	0.045				
2	395512	20	20	25	<0.5	0.040				
3	395514	25	25	20	<0.5	0.045				
4	395516	25	15	25	<0.5	0.050				
5	395518	35	20	40	<0.5	0.060				
6	395522	20	20	60	<0.5	0.070				
7	395524	<5	15	25	<0.5	0.055				
8	395526	<5	15	50	<0.5	0.050				
9	395528	<5	20	40	<0.5	0.020				
10	395530	<5	40	30	<0.5	0.035				
11	395532	10	65	70	<0.5	0.045				
12	395534	10	55	75	<0.5	0.045				
13	395536	<5	60	125	<0.5	0.045				
14	395538	<5	105	110	<0.5	0.060				
15	395540	<5	120	110	<0.5	0.095				
16	395542	<5	115	75	<0.5	0.070				
17	395549	<5	40	35	<0.5	0.105				
18	395551	80	210	60	<0.5	0.110				
19	395553	30	155	35	<0.5	0.075				
20	395555	40	90	25	<0.5	0.195				
21	395557	60	430	160	<0.5	0.190				
22	395559	25	170	55	<0.5	0.055				
23	395561	10	140	70	<0.5	0.035				
24	395563	10	110	65	<0.5	0.030				
25	395565	20	70	50	<0.5	0.050				

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04284	20/05/87	2325	4 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
	395567	50	85	90	<0.5	0.060				
	395569	40	90	120	<0.5	0.050				
3	395571	40	75	80	<0.5	0.055				
	395573	35	60	100	<0.5	0.095				
5	395575	15	40	40	<0.5	0.050				
	395577	20	45	40	<0.5	0.090				
	395579	160	335	55	<0.5	0.115				
8	395581	55	75	40	<0.5	0.065				
	395583	40	60	40	<0.5	0.060				
10	395585	25	50	30	<0.5	0.045				
	395587	10	70	120	<0.5	0.040				
	395589	<5	195	20	<0.5	0.020				
13	395591	5	175	30	<0.5	0.035				
	395593	5	60	20	<0.5	0.030				
15	395595	<5	35	15	<0.5	0.030				
	395597	<5	70	195	<0.5	0.035				
	395599	5	45	30	<0.5	0.040				
18	395601	5	70	25	<0.5	0.065				
	395603	20	65	25	<0.5	0.065				
20	395605	<5	35	25	<0.5	0.045				
	395607	15	35	65	<0.5	0.045				
22	395609	15	40	30	<0.5	0.045				
23	395611	<5	10	30	<0.5	0.045				
	395613	10	45	25	<0.5	0.035				
25	395615	<5	40	30	<0.5	0.060				

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
	23.3.08.04284	20/05/87	2325	5 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
	395617	<5	65	30	<0.5	0.045				
	395619	35	45	60	<0.5	0.065				
3	395621	20	45	35	<0.5	0.075				
	395623	15	30	25	<0.5	0.060				
5	395625	15	55	20	<0.5	0.065				
	395627	15	80	35	<0.5	0.065				
	395629	15	50	40	<0.5	0.050				
8	395631	15	85	75	<0.5	0.040				
	395633	35	95	70	<0.5	0.060				
10	395635	65	40	95	<0.5	0.075				
	395639	10	60	145	<0.5	0.085				
	395641	<5	45	40	<0.5	0.045				
13	395643	<5	30	45	<0.5	0.035				
	395645	<5	40	25	<0.5	0.015				
15	395647	<5	60	60	<0.5	0.095				
	395649	20	75	100	<0.5	0.020				
	395651	<5	25	35	<0.5	0.020				
18	395653	55	200	235	<0.5	0.055				
	395655	10	35	130	<0.5	0.045				
20	395657	10	50	80	<0.5	0.055				
	395659	5	55	35	<0.5	0.035				
22	395661	5	75	60	<0.5	0.055				
23	395663	5	60	65	<0.5	0.035				
	395665	5	55	80	<0.5	0.095				
25	395667	5	50	85	<0.5	0.095				

Results in ppm unless otherwise specified
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085 599086 **ANALABS**

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04284	20/05/87	2325	6 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
	395669	5	35	90	<0.5	0.065				
	395671	5	150	130	<0.5	0.075				
3	395673	5	130	120	<0.5	0.095				
	395675	<5	60	105	<0.5	0.055				
5	395676	<5	50	15	<0.5	0.055				
	395678	5	55	20	<0.5	0.060				
	395680	5	35	25	<0.5	0.095				
8	395682	<5	45	20	<0.5	0.045				
	395684	<5	35	20	<0.5	0.025				
10	395686	5	55	10	<0.5	0.010				
	395688	<5	35	15	<0.5	0.015				
	395690	5	45	20	<0.5	0.035				
13	395692	5	95	20	<0.5	0.035				
	395694	5	75	20	<0.5	0.040				
15	395696	10	50	25	<0.5	0.045				
	395698	5	50	15	<0.5	0.025				
	395700	10	50	30	<0.5	0.020				
18	395702	10	45	20	<0.5	0.045				
	395704	10	60	15	<0.5	0.040				
20	395706	5	45	20	<0.5	0.030				
	395708	30	140	25	<0.5	0.125				
22	395710	20	50	15	<0.5	0.065				
23	395712	20	75	30	<0.5	0.055				
	395714	25	75	20	<0.5	0.095				
25	395716	20	70	25	<0.5	0.065				

Results in ppm unless otherwise specified
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ANALABS

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

086

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04284	20/05/87	2325	7 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395718	25	85	25	<0.5	0.065				
2	395720	45	95	55	<0.5	0.055				
3	395722	35	75	35	<0.5	0.055				
4	395724	25	80	40	<0.5	0.040				
5	395726	35	70	50	<0.5	0.060				
6	395728	20	70	25	<0.5	0.040				
7	395730	25	90	25	<0.5	0.055				
8	395732	35	40	30	<0.5	0.055				
9	395734	40	70	35	<0.5	0.105				
10	395736	5	40	25	<0.5	0.035				
11	395738	25	75	25	<0.5	0.030				
12	395740	40	40	30	<0.5	0.060				
13	395742 *STD'	25	170	160	<0.5	0.180				
14	395744 *STD'	20	195	170	<0.5	0.170				
15	395746	25	25	45	<0.5	0.090				
16	395748	40	10	75	<0.5	0.060				
17	395750	5	<5	15	<0.5	0.015				
18	395752	5	5	20	<0.5	0.025				
19	395754	25	15	25	<0.5	0.035				
20	395756	55	15	30	<0.5	0.035				
21	395758 *STD'	25	170	140	<0.5	0.180				
22	395760	5	45	55	<0.5	0.095				
23	395762	5	130	60	<0.5	0.055				
24	395764	<5	10	20	<0.5	0.015				
25	395766	<5	90	35	<0.5	0.030				

Results in ppm unless otherwise specified
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087

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04264	20/05/87	2325	8 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
	395768	<5	45	65	<0.5	0.065				
2	395770	<5	110	60	<0.5	0.065				
3	395772	<5	15	40	<0.5	0.030				
	395774	<5	15	50	<0.5	0.085				
5	395776	<5	10	25	<0.5	0.040				
	395778	5	10	25	<0.5	0.055				
	395780	<5	<5	30	<0.5	0.035				
8	395782	<5	<5	30	<0.5	0.035				
	395784	<5	30	70	<0.5	0.035				
10	395786	<5	10	40	<0.5	0.050				
	395788	<5	25	50	<0.5	0.035				
	395790	<5	15	30	<0.5	0.035				
13	395792	<5	15	25	<0.5	0.045				
	395794	<5	35	25	<0.5	0.030				
15	395796	<5	30	25	<0.5	0.040				
	395798	15	25	35	<0.5	0.055				
	395800	35	15	35	<0.5	0.060				
	395802	5	25	15	<0.5	0.050				
	395804	20	10	15	<0.5	0.055				
20	395806	25	30	20	<0.5	0.090				
	395808	15	30	25	<0.5	0.070				
22	395810	30	40	50	<0.5	0.090				
	395812	30	175	30	<0.5	0.100				
	395814	30	45	30	<0.5	0.080				
25	395816	30	45	30	<0.5	0.090				

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

599089 **ANALABS**

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

088

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.5.06.04284	20/05/87	2325	9 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395818 *STD'	25	180	140	<0.5	0.230				
2	395820	15	45	30	<0.5	0.060				
3	395822	15	75	35	<0.5	0.100				
4	395824	20	45	20	<0.5	0.090				
5	395826	50	45	20	<0.5	0.095				
6	395828	20	30	20	<0.5	0.065				
7	395830	25	25	50	<0.5	0.055				
8	395832	35	25	55	<0.5	0.060				
9	395834	50	30	55	<0.5	0.075				
10	395836	85	105	60	<0.5	0.090				
11	395838	55	145	50	<0.5	0.120				
12	395840	20	65	50	<0.5	0.040				
13	395842	25	65	100	<0.5	0.025				
14	395844	25	65	75	<0.5	0.065				
15	395846	20	55	55	<0.5	0.060				
16	395848	15	65	60	<0.5	0.060				
17	395850	20	70	165	<0.5	0.050				
18	395852	55	115	160	<0.5	0.105				
19	395854	30	70	90	<0.5	0.075				
20	395856	5	30	50	<0.5	0.040				
21	395858	10	80	215	<0.5	0.040				
22	395860	<5	15	15	<0.5	0.020				
23	395862	<5	<5	20	<0.5	0.015				
24	395864	<5	10	15	<0.5	0.015				
25	395866	<5	10	15	<0.5	0.030				

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AUTHORISED OFFICER

089 599090 **ANALABS**

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04284	20/05/87	2325	10 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395868	35	25	25	<0.5	0.035				
2	395870	5	25	20	<0.5	0.015				
3	395872	<5	<5	10	<0.5	0.025				
4	395874	<5	15	15	<0.5	0.030				
5	395876	<5	<5	15	<0.5	0.035				
6	395878	<5	<5	15	<0.5	0.035				
7	395880	<5	<5	25	<0.5	0.030				
8	395882	<5	<5	15	<0.5	0.015				
9	395884	<5	<5	15	<0.5	0.015				
10	395886	<5	<5	5	<0.5	0.005				
11	395888	<5	<5	15	<0.5	0.015				
12	395890	<5	<5	20	<0.5	0.015				
13	395892	<5	<5	10	<0.5	0.015				
14	395894	<5	<5	25	<0.5	0.015				
15	395896	<5	10	20	<0.5	0.045				
16	395898	25	185	145	<0.5	0.215				
	395900	<5	<5	15	<0.5	0.010				
18	395902	<5	5	25	<0.5	0.025				
19	395904	20	95	15	<0.5	0.095				
20	395906	20	30	20	<0.5	0.080				
21	395908	15	25	15	<0.5	0.045				
22	395910	30	30	25	<0.5	0.080				
23	395912	30	125	30	<0.5	0.100				
24	395914	20	40	35	<0.5	0.110				
25	395916	25	35	30	<0.5	0.090				

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090 599091

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.05.04284	20/05/87	2325	11 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395918	30	25	35	<0.5	0.135				
2	395920	5	20	15	<0.5	0.070				
3	395922	10	35	20	<0.5	0.070				
4	395924	20	80	25	<0.5	0.075				
5	395926	20	55	30	<0.5	0.075				
6	395928	45	75	55	<0.5	0.100				
7	395930	105	60	55	<0.5	0.115				
8	395932	95	65	40	<0.5	0.125				
9	395934	105	35	65	<0.5	0.100				
10	395936 XSTD'	25	190	145	<0.5	0.125				
11	395938	15	60	65	<0.5	0.135				
12	395940	15	45	70	<0.5	0.045				
13	395942	45	45	105	<0.5	0.075				
14	395944	45	25	80	<0.5	0.095				
15	395946	45	20	90	<0.5	0.070				
16	395948	40	25	90	<0.5	0.075				
17	395950	25	20	80	<0.5	0.075				
18	395952	40	55	150	<0.5	0.075				
19	395954	<5	10	20	<0.5	0.035				
20	395956	<5	<5	10	<0.5	0.025				
21	395958	<5	<5	5	<0.5	0.015				
22	395960	<5	<5	30	<0.5	0.015				
23	395962	10	15	20	<0.5	0.035				
24	395964	<5	10	10	<0.5	0.015				
25	395966	<5	<5	10	<0.5	0.015				

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
	23.3.08.04204	20/05/87	2325	12 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Hg				
1	395968	<5	<5	10	<0.5	0.025				
2	395970	<5	<5	10	<0.5	0.005				
3	395972	<5	<5	10	<0.5	0.020				
4	395974	<5	<5	20	<0.5	0.020				
5	395976	<5	<5	15	<0.5	0.010				
6	395978	<5	25	10	<0.5	0.010				
7	395980	10	20	15	<0.5	0.030				
8	395982	<5	5	15	<0.5	0.025				
9	395984	<5	5	10	<0.5	0.015				
10	395986	<5	10	10	<0.5	0.025				
11	395988	<5	<5	15	<0.5	0.025				
12	395990	<5	10	10	<0.5	0.025				
13	395992	<5	10	20	<0.5	0.025				
14	395994	<5	<5	15	<0.5	0.020				
15	395996	<5	<5	10	<0.5	0.020				
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.005				
24	UNITS	PPM	PPM	PPM	PPM	PPM				
25	METHOD	101	101	101	101	122				

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 3.

TAILINGS DAM

ROCK CHIP SAMPLES

Sample Nos:	Northing	Easting
379388	10280	3600
379389	40340	3530
379390	10400	3480
379391	10470	3430
379392	10530	3440
379393	10530	3400
379394	10520	3340
379395	10670	3200
379396	10690	2220
379397	10720	3250
379398	10740	3260
379399	10760	3280
379400	10700	3140
379401	10780	2940
379402	10790	2850
379403	10770	2820
379404	10750	2820
379405	10730	2830
379406	10710	2830
379407	10690	2840
379408	10670	2850
379409	10640	2860
379410	10620	2860
379411	10590	2870
379412	10810	2810
379413	10830	2810
379414	10850	2800
379415	10870	2780
379416	10780	3030
379417	10790	3020
379418	11040	3100
379419	11080	3030
379420	11100	3000
379421	11120	2910
379422	11330	2680
379423	11330	2690
379424	11310	2700

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ANALABS

HAT ROCKCHIPS (28)

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04503

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
2389	

DATE RECEIVED	RESULTS REQUIRED
22/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	03/06/87	1	37

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
	379388/424	RC	Frep: 012,013,016						Cu,Pb,Zn,Ag/101,As/114		
	379388/424	RC							Ba,Cr/401		
	379388/424	RC							Hg/122		

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	
hole 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
il	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
lp	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
avy mineral	HM					inductively coupled plasma	ICP

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599096

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04503	03/06/87	2389	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Ba	Cr	Hg	
1	379388	80	120	140	<0.5	5	1150	120	0.020	
2	379389	20	40	45	<0.5	8	870	140	0.225	
3	379390	35	30	40	<0.5	16	850	120	0.150	
4	379391	30	735	25	<0.5	17	690	120	0.125	
5	379392	10	200	20	<0.5	8	790	100	0.135	
6	379393	40	225	20	<0.5	8	700	140	0.075	
7	379394	50	330	40	<0.5	10	740	120	0.115	
8	379395	25	30	25	<0.5	5	680	140	0.180	
9	379396	25	20	20	<0.5	5	730	110	0.180	
10	379397	10	90	15	<0.5	2	760	130	0.145	
11	379398	35	255	15	<0.5	6	780	120	0.150	
12	379399	5	85	15	<0.5	2	550	150	0.115	
13	379400	10	40	60	<0.5	1	730	110	0.095	
14	379401	100	35	20	<0.5	18	800	130	0.180	
15	379402	30	30	15	<0.5	9	820	140	0.125	
16	379403	20	40	10	<0.5	2	810	120	0.110	
17	379404	10	125	10	<0.5	1	850	110	0.135	
18	379405	10	155	15	<0.5	4	950	120	0.160	
19	379406	10	330	15	<0.5	2	910	110	0.260	
20	379407	20	130	20	<0.5	2	950	110	0.135	
21	379408	25	125	20	<0.5	6	950	110	0.110	
22	379409	60	175	30	<0.5	14	960	140	0.235	
23	379410	60	265	65	<0.5	15	1100	140	0.130	
24	379411	60	225	50	<0.5	12	1050	140	0.135	
25	379412	15	155	10	<0.5	1	690	120	0.345	

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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599097

ANALABS

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

096

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04503	03/06/87	2389	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Ba	Cr	Hg	
1	379413	25	60	5	<0.5	3	610	130	0.250	
2	379414	30	15	10	<0.5	22	490	410	0.080	
3	379415	45	15	10	<0.5	12	510	470	0.040	
4	379416	20	10	10	<0.5	8	530	140	0.370	
5	379417	10	20	15	<0.5	15	330	590	0.070	
6	379418	<5	<5	15	<0.5	1	220	440	0.070	
7	379419	5	15	55	<0.5	1	430	450	0.050	
8	379420	5	<5	25	<0.5	2	270	430	0.095	
9	379421	<5	<5	15	<0.5	1	270	360	0.090	
10	379422	10	20	40	<0.5	5	280	490	0.090	
11	379423	75	45	110	<0.5	10	410	340	0.110	
12	379424	10	20	20	<0.5	4	270	470	0.110	
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	1	10	5	0.005	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	114	401	401	122	

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 4.

599099

098

INTERPRETATION REPORT

UTEM SURVEY

HELLYER TAILING PONDS GRID

MACKINTOSH EL 2/70

Prepared by:

J Silic

Distribution

Hawthorn (1)
Burnie (1)

Issued by:

J Silic

LIST OF CONTENTS

INTRODUCTION

SURVEY SPECIFICATIONS

DISCUSSION OF RESULTS

CONCLUSION

REFERENCES

PLATE

MAC 113B

APPENDIX 1

UTEM DATA SECTIONS

INTRODUCTION

Electromagnetic techniques have played important roles in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery Aberfoyle Resources has further refined the use of these techniques in the search for Hellyer and Que River type targets (Silic, 1989).

The purpose of this report is to discuss the results of a UTEM (West et al, 1984) survey over the Tailings pond grid on the Mackintosh licence. (Plate 1)

SURVEY SPECIFICATIONS

A one loop, five line UTEM survey covered the planned Hellyer Tailings Dam area from 4100E to 4900E on lines 10200N, 10400N, 10600N and 10800N. Vertical component data (Hz) was collected on 50 metre station spacing. Extra care had to be taken when collecting the data because of interfering effects from the nearby power line.

DISCUSSION OF RESULTS

No features indicative of sulphide accumulations were detected by this survey. A formational near the surface conductor which is identified by the second derivative technique from Silic, 1989, exists on most lines and is to the west of approximately 4300E.

CONCLUSION

No conductor which could be attributed to sulphide accumulations were detected by this survey.

REFERENCES

Eadie, E. T., Silic, J. and Jack, D. J. (1985), 'The application of geophysics to the discovery of the Hellyer ore depost, Tasmania', Explor. Geophys. 16, 207-209.

Silic, J. (1989), 'Interpretation of TDEM data using spatial derivatives and decay analysis', Explor. Geophys. 20

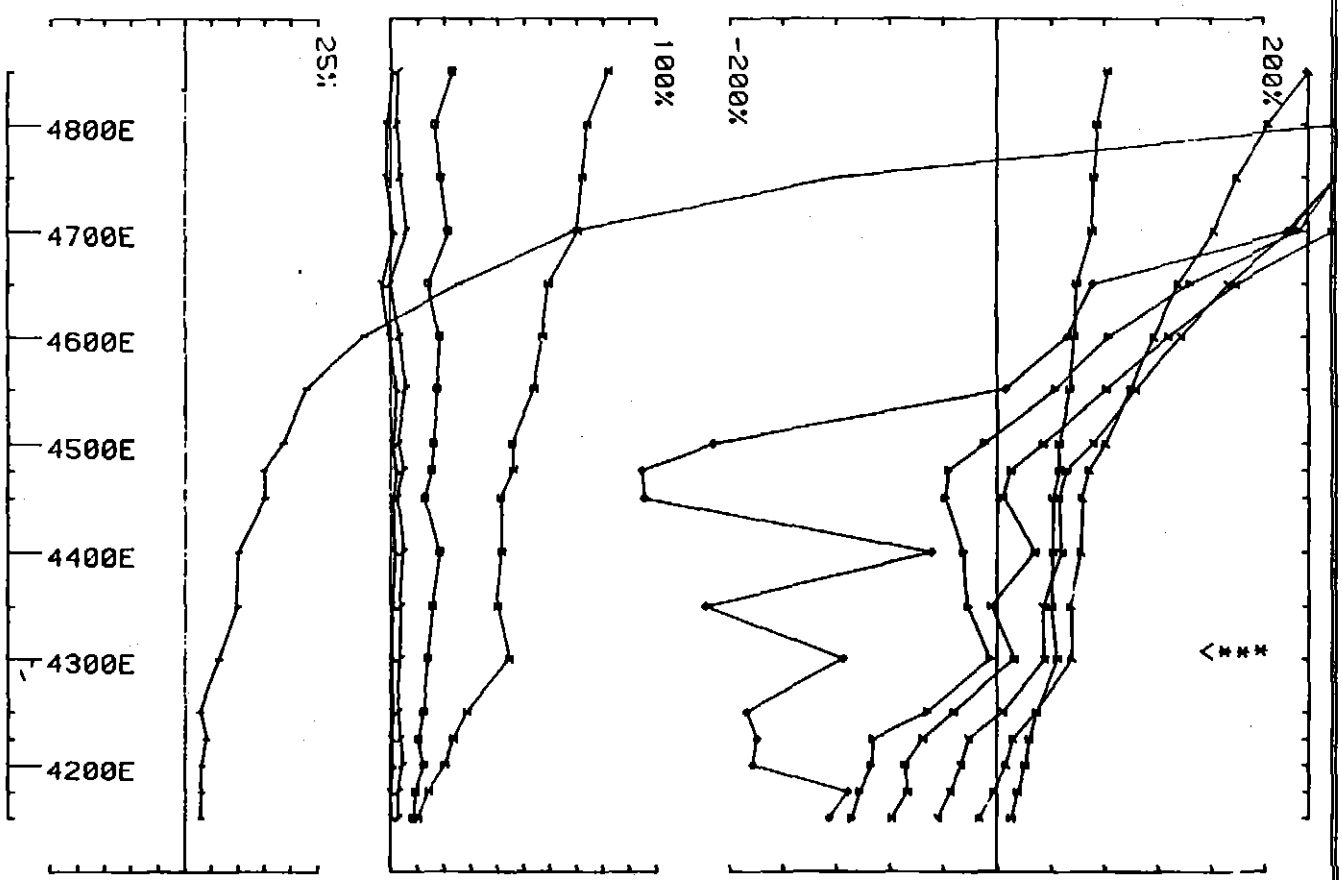
Silic, J., Eadie, E. T., and Jack, D. J. (1985), 'Application of time domain electromagnetic methods in the discovery of the Hellyer ore deposit, Tasmania, Australia', in volume of Extended Abstracts of the 55th SEG meeting, Washington, DC.

Webster, S. S. and Skey, E. H. (1979), 'Geophysical and geochemical case history of the Que River deposit, Tasmania', in Geophysics and Geochemistry in the Search for Metallic Ores; Peter J. Hood, editor, Geological Survey of Canada, Economic Geology Report 31, 697-720.

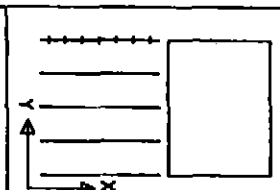
West, G. F., MacNae J. C. and Lamontagne Y. (1984), 'A time domain EM system measuring the step response of the ground', Geophys., 49, 1010-1026.

APPENDIX 1

103

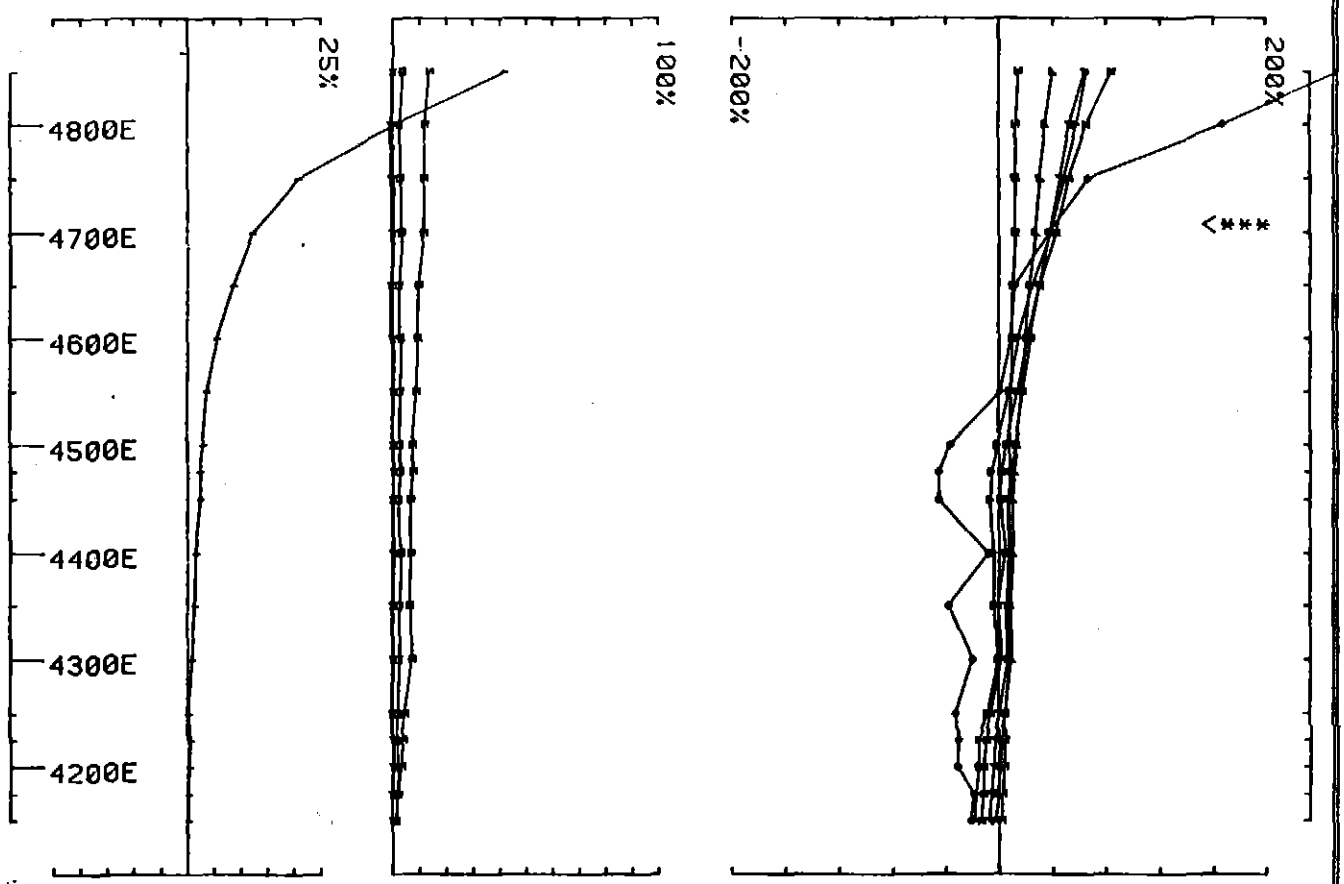


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 11000N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

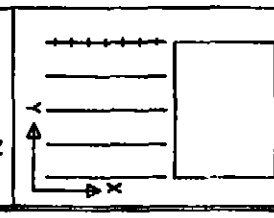


Hellyer Mine
LOOP 8001
LINE 11000
Hz

104

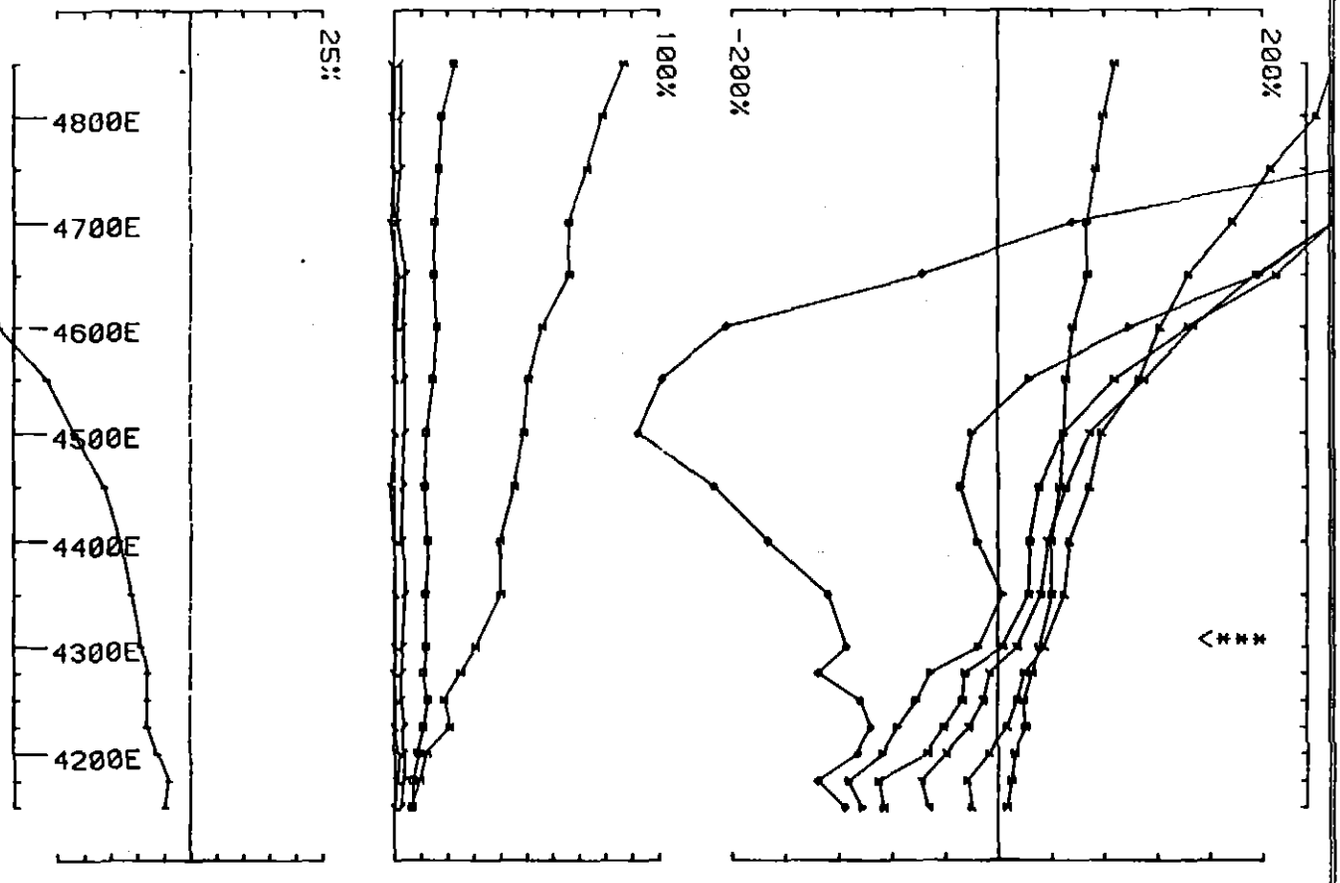


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
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Line 11000N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

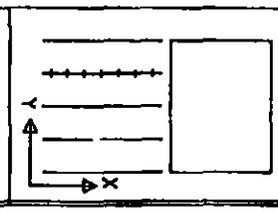


Hellyer Mine
LOOP 8001
LINE 11000
Hz

105

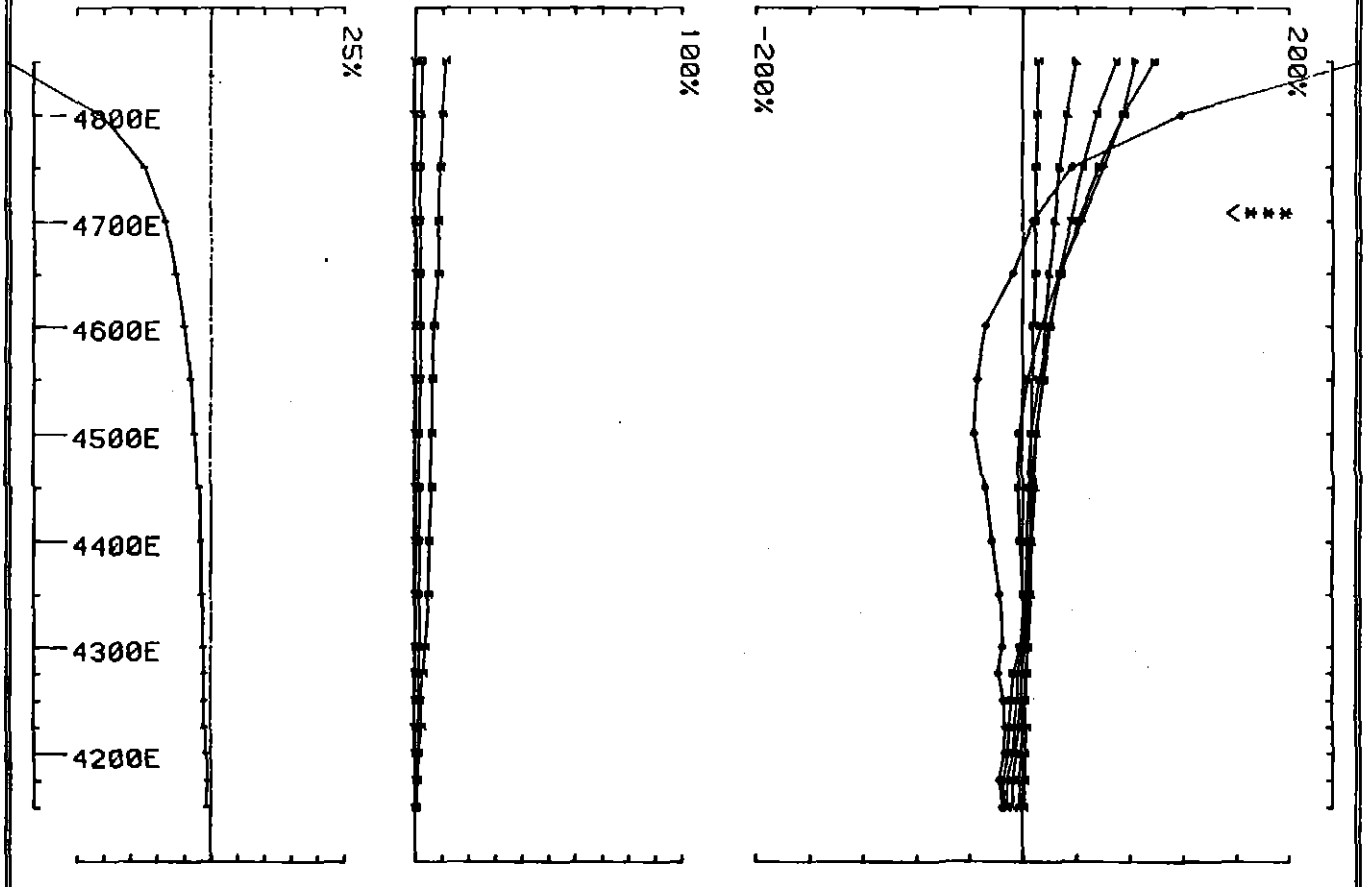


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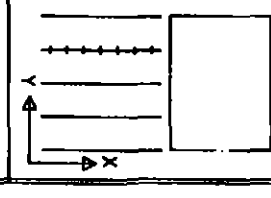


Hellyer Mine
LOOP 8001
LINE 10800
Hz

(106

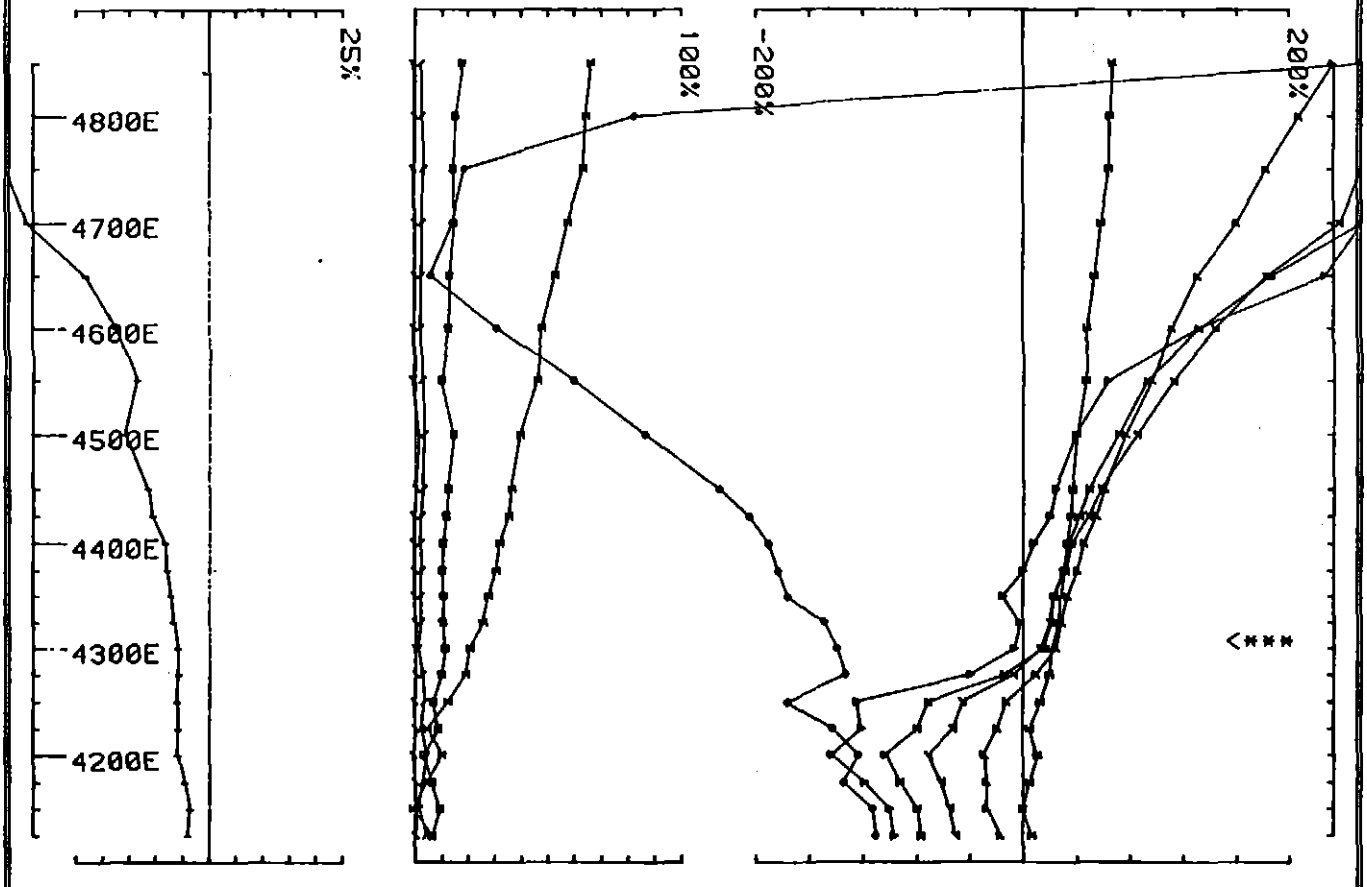


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
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Line 10800N Hz COMPONENT BASE FREQ :- 26.230HERTZ
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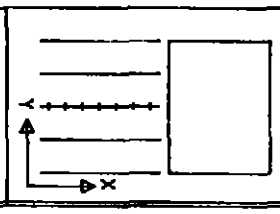


Hellyer Mine
LOOP 8001
LINE 10800
Hz

107

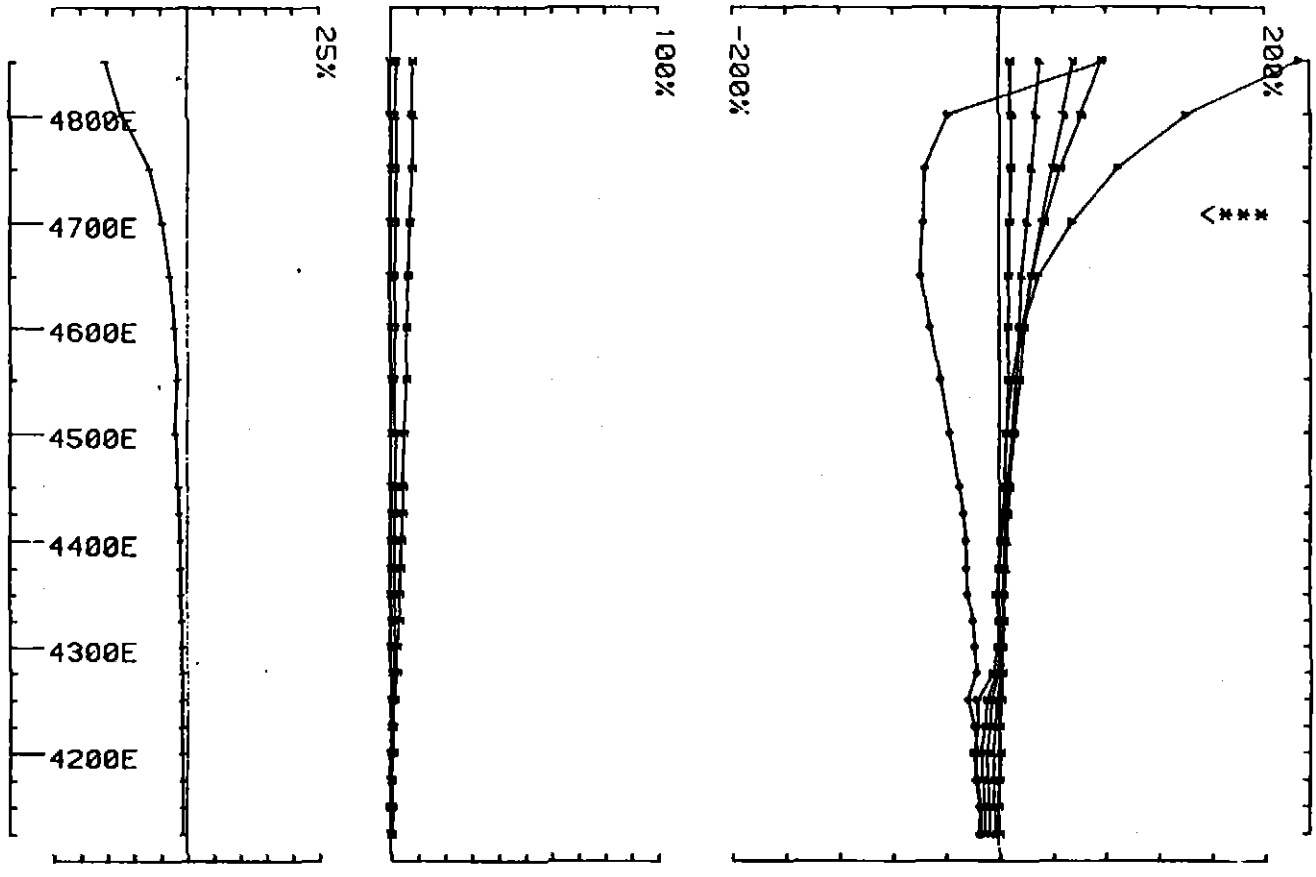


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Line 10600N Hz COMPONENT BASE FREQ :- 26.230HERTZ
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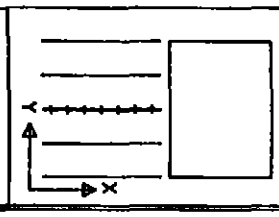


Hellyer Mine
LOOP 8001
LINE 10600
Hz

108

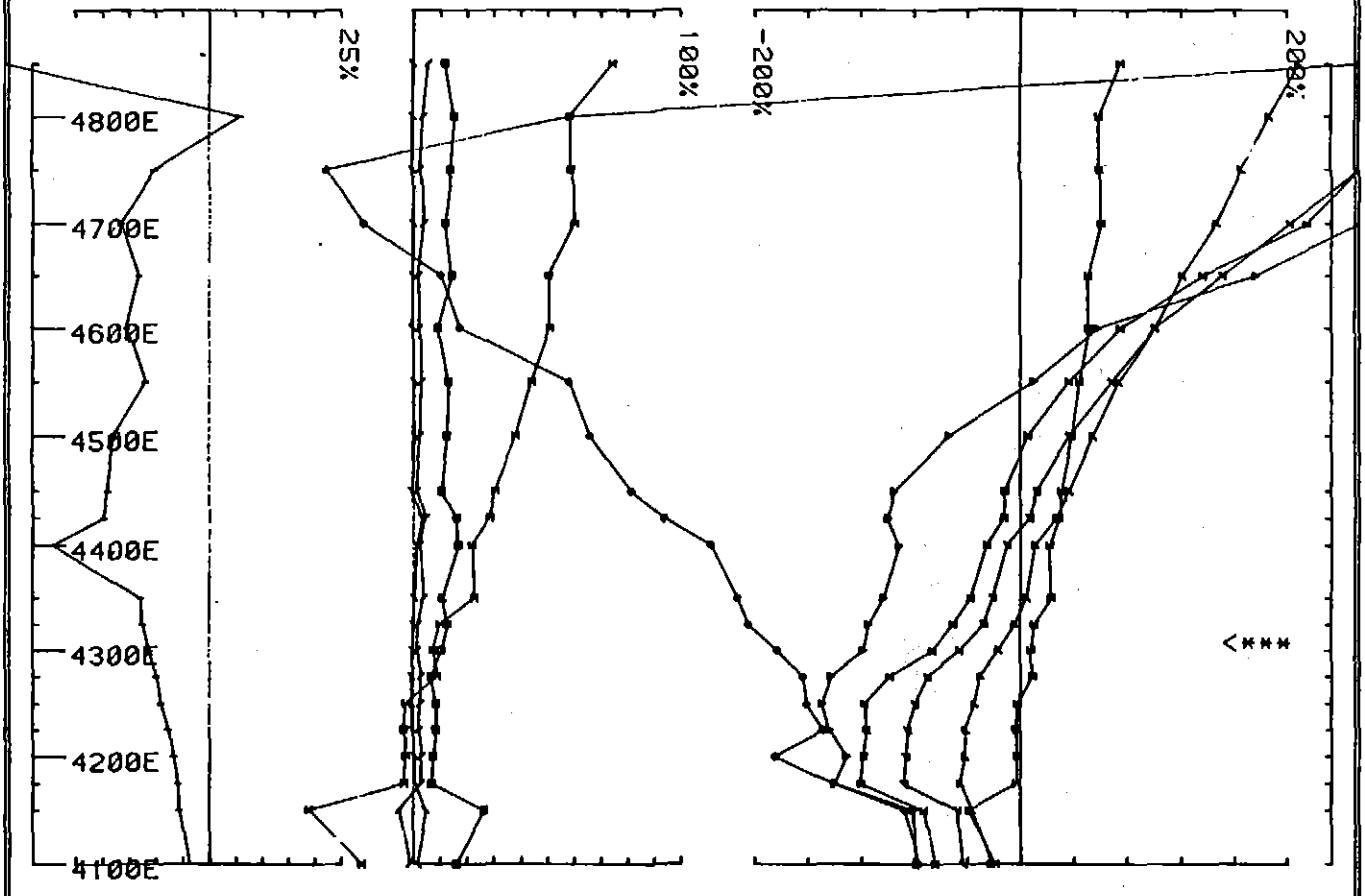


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Line 10600N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

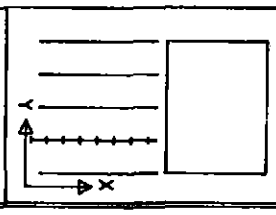


Hellyer Mine
LOOP 8001
LINE 10600
Hz

109



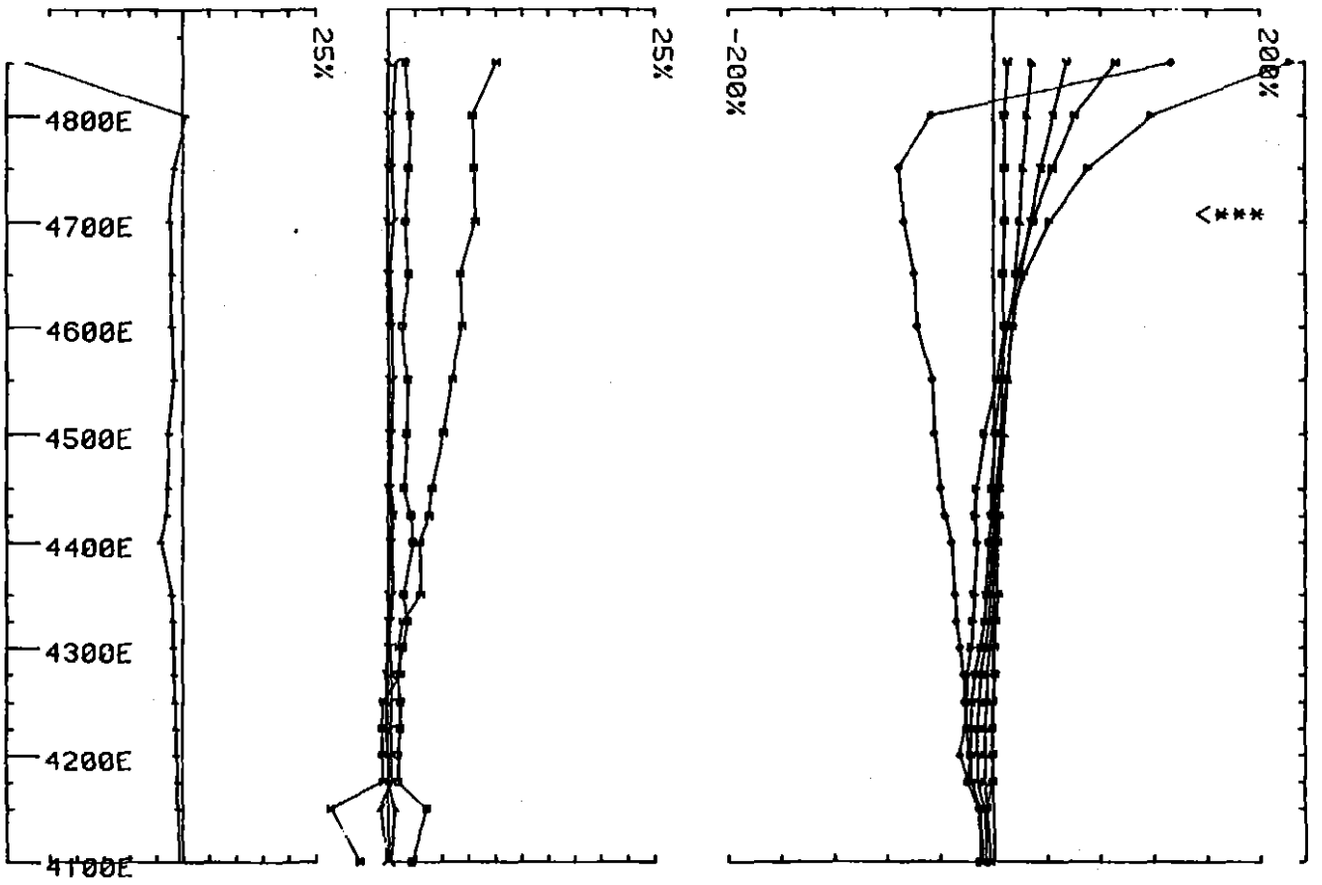
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Line 10400N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION



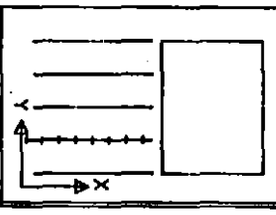
Hellyer Mine
LOOP 8001
LINE 10400
Hz

599111

110



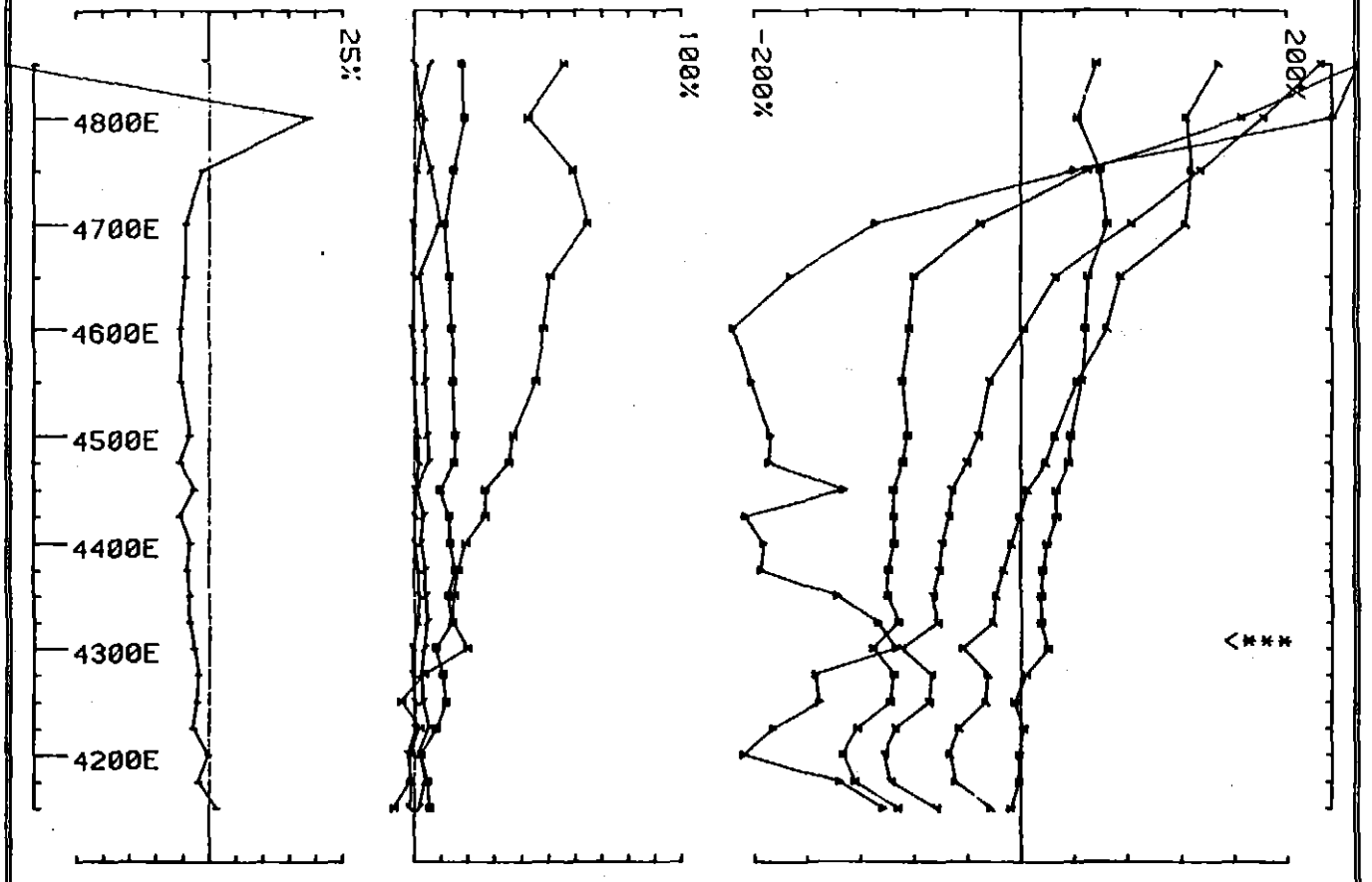
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SECONDARY FIELD POINT Ch 1 NORMALIZATION



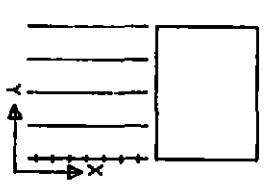
Hellyer Mine
LOOP 0001
LINE 10400
Hz

599112

111

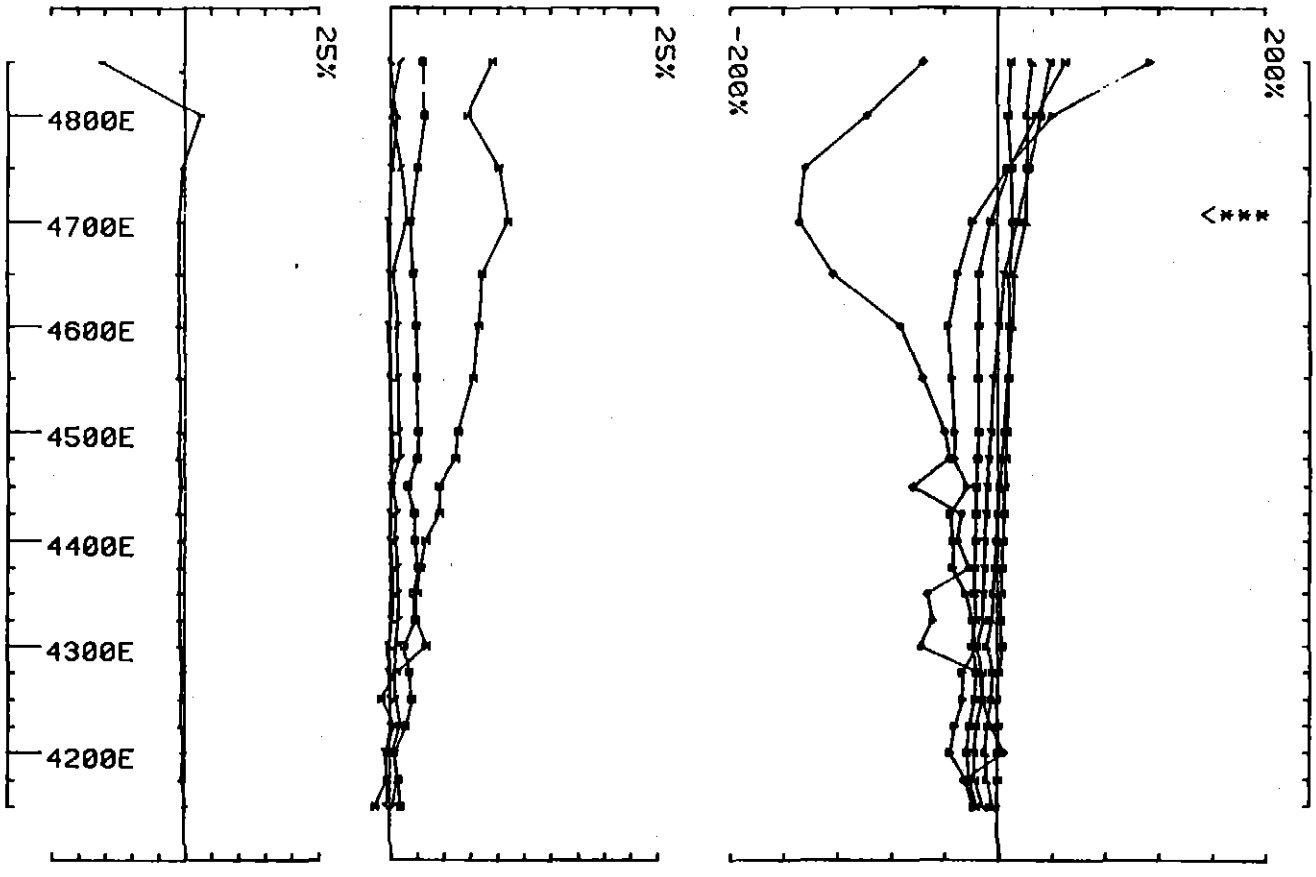


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Line 10200N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

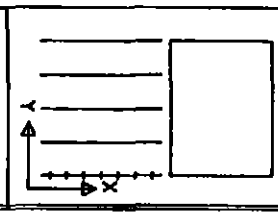


Hellyer Mine
LOOP 6001
LINE 10200
Hz

112



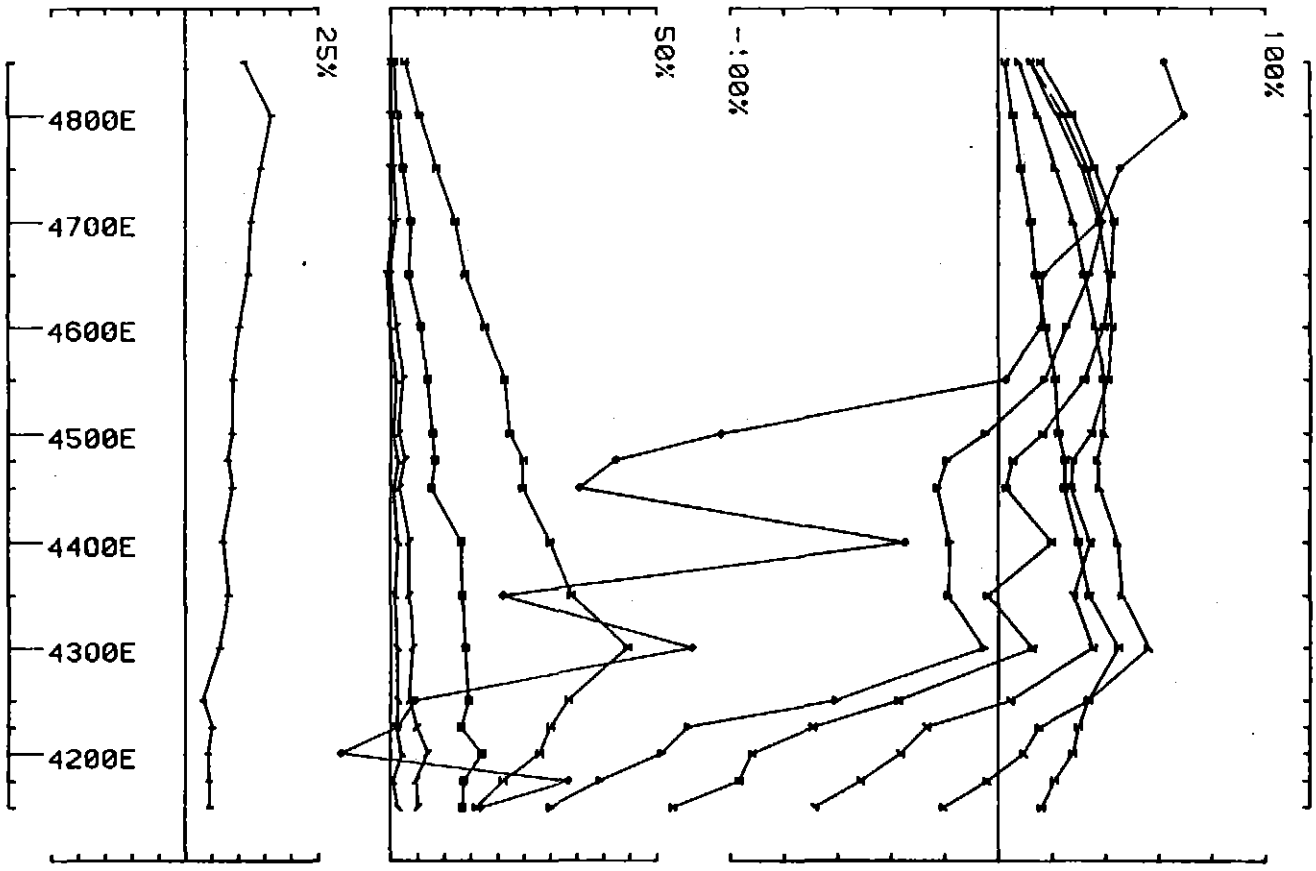
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10200N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION



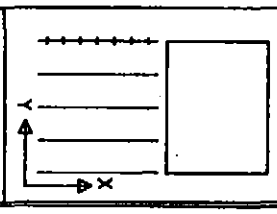
Hellyer Mine
LOOP 8801
LINE 10200
Hz

599114

113

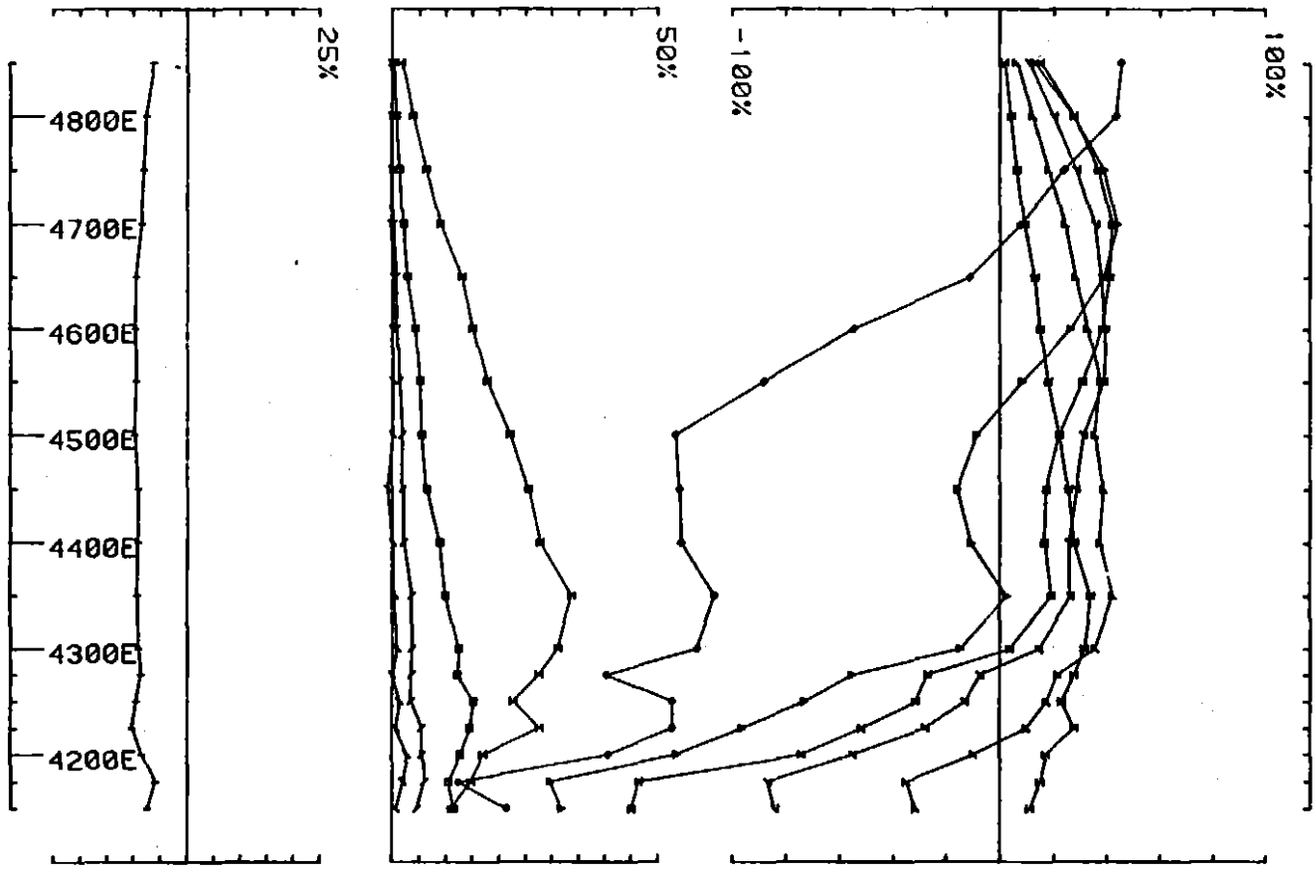


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
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Line 11000N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

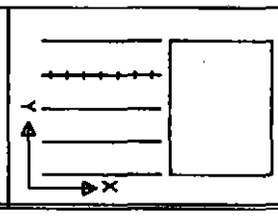


Hellyer Mine
LOOP 8001
LINE 11000
Hz

114

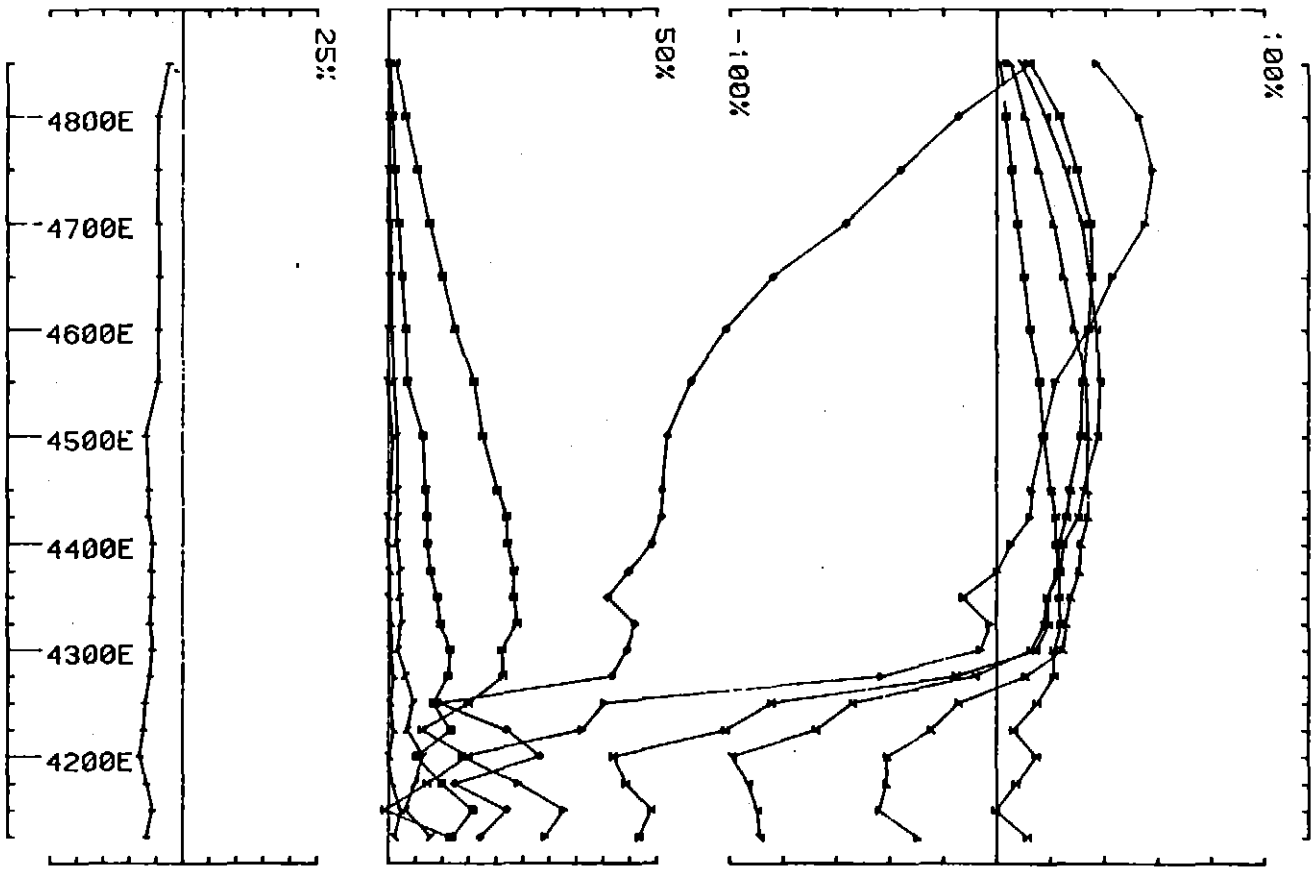


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AREA :- Hellyer Mine
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Line 10800N Hz COMPONENT BASE FREQ :- 26.230HERTZ
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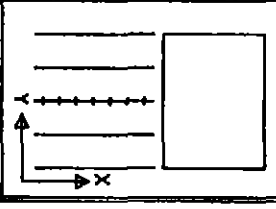


Hellyer Mine
LOOP 8001
LINE 10800
Hz

115

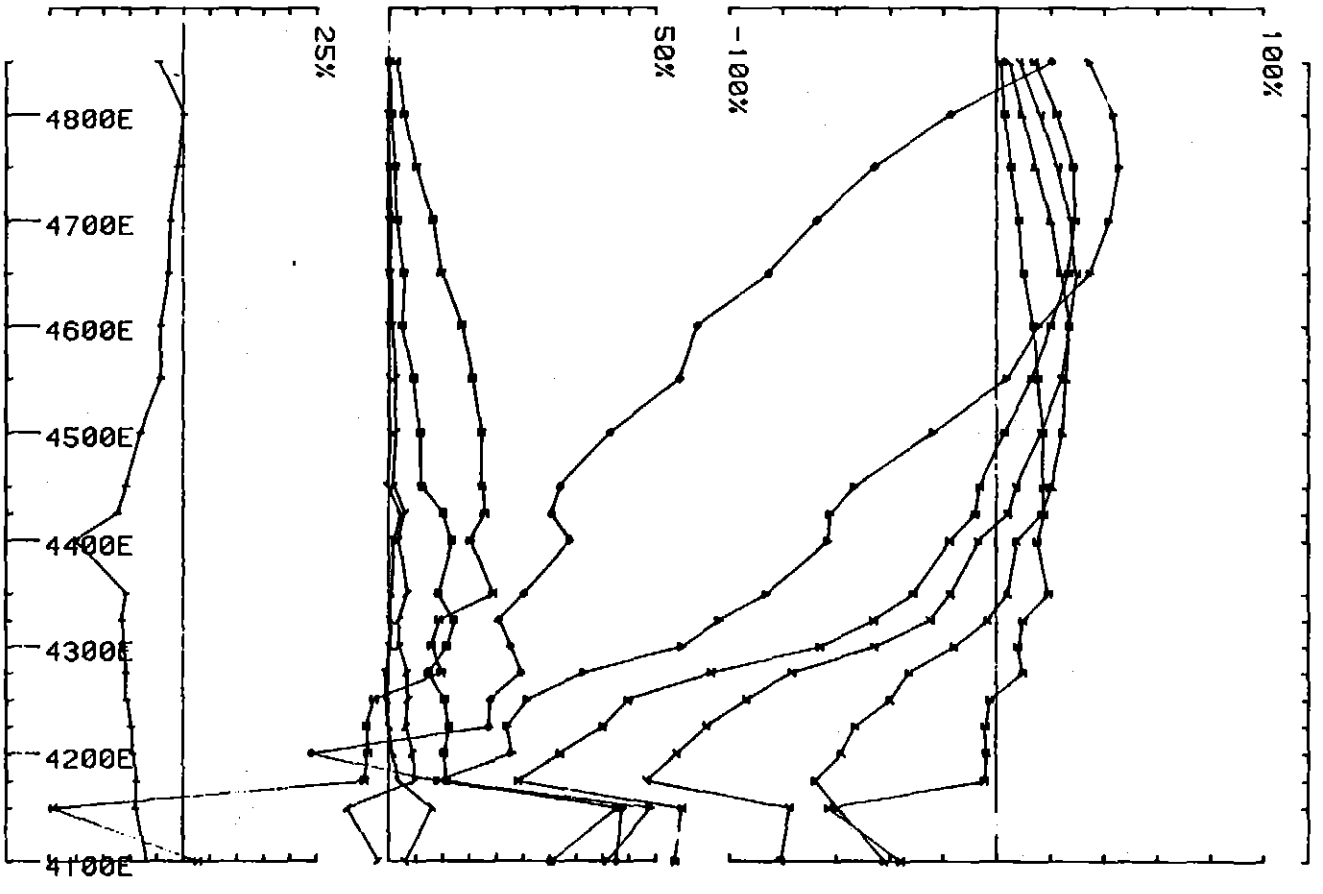


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10600N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

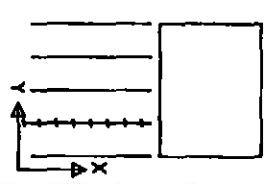


Hellyer Mine
LOOP 0001
LINE 10600
Hz

116

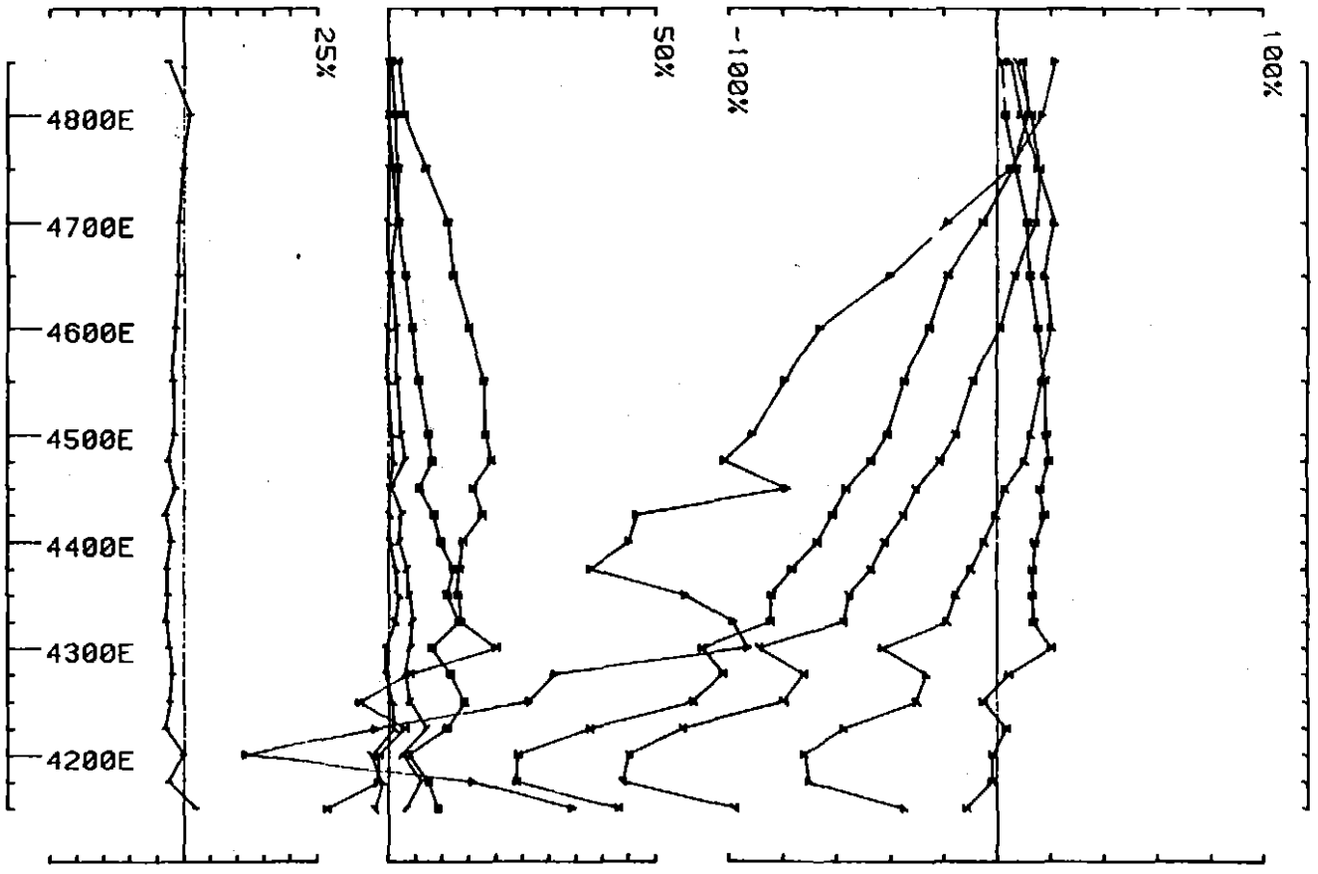


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10400N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

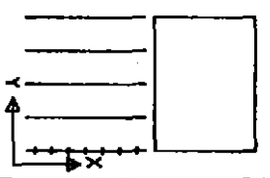


Hellyer Mine
LOOP 8081
LINE 10400
Hz

117



LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10200N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



Hellyer Mine
LOOP 8001
LINE 10200
Hz

(110

599119

INTERPRETATION REPORT

UTEM SURVEY

HELLYER TAILINGS DAM GRID

HATFIELD EL 15/73

Prepared by:

J Silic

Distribution

Hawthorn (1)
Burnie (1)

Issued by:

J Silic

LIST OF CONTENTS

INTRODUCTION

SURVEY SPECIFICATIONS

DISCUSSION OF RESULTS

CONCLUSION

REFERENCES

PLATE

MAC 113B

APPENDIX 1

UTEM DATA SECTIONS

REFERENCES

Eadie, E. T., Silic, J. and Jack, D. J. (1985), 'The application of geophysics to the discovery of the Hellyer ore depost, Tasmania', Explor. Geophys. 16, 207-209.

Silic, J. (1989), 'Interpretation of TDEM data using spatial derivatives and decay analysis', Explor. Geophys. 20

Silic, J., Eadie, E. T., and Jack, D. J. (1985), 'Application of time domain electromagnetic methods in the discovery of the Hellyer ore deposit, Tasmania, Australia', in volume of Extended Abstracts of the 55th SEG meeting, Washington, DC.

Webster, S. S. and Skey, E. H. (1979), 'Geophysical and geochemical case history of the Que River deposit, Tasmania', in Geophysics and Geochemistry in the Search for Metallic Ores; Peter J. Hood, editor, Geological Survey of Canada, Economic Geology Report 31, 697-720.

West, G. F., MacNae J. C. and Lamontagne Y. (1984), 'A time domain EM system measuring the step response of the ground', Geophys., 49, 1010-1026.

INTRODUCTION

Electromagnetic techniques have played important roles in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery Aberfoyle Resources has further refined the use of these techniques in the search for Hellyer and Que River type targets (Silic, 1989).

The purpose of this report is to discuss the results of a UTEM (West et al, 1984) survey over the Tailings pond grid on the Hatfield licence. (Plate 1)

SURVEY SPECIFICATIONS

A one loop, five line UTEM survey was conducted over the proposed Hellyer Tailings Dam area, west of 4000E on line 11000N, 10800N, 10600N 10400N and 10200N.

Vertical component data (Hz) was collected at 50 metre station spacings.

DISCUSSION OF RESULTS

The UTEM data is of acceptable quality despite the fact that the nearby powerline was somewhat affecting the data quality. However, no targets worthy of follow up were detected by this survey.

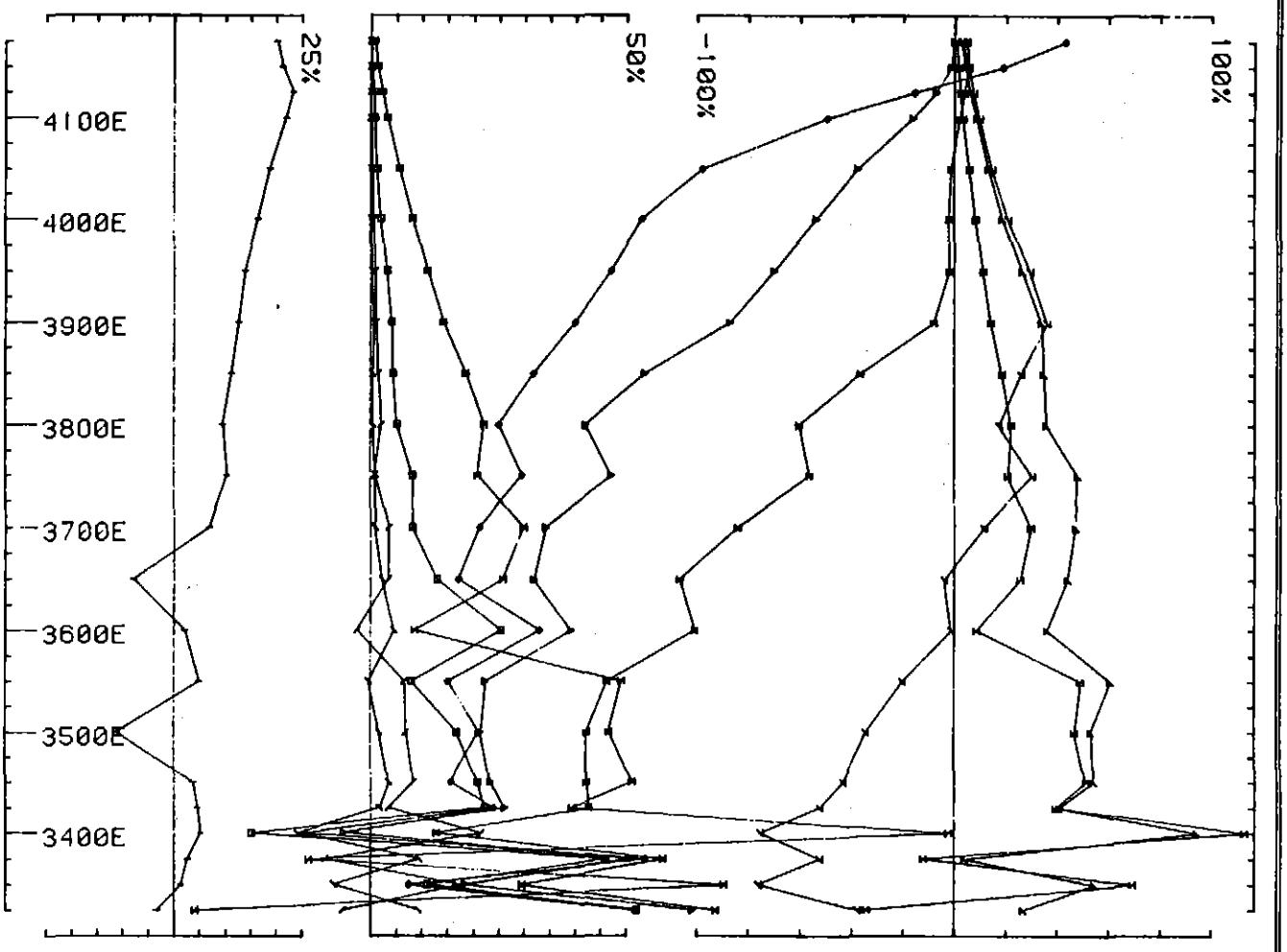
CONCLUSION

No targets worthy of follow up were detected by this survey.

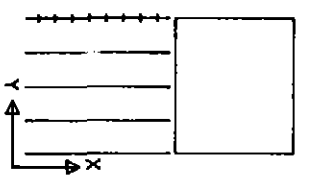
APPENDIX 1

599124

123

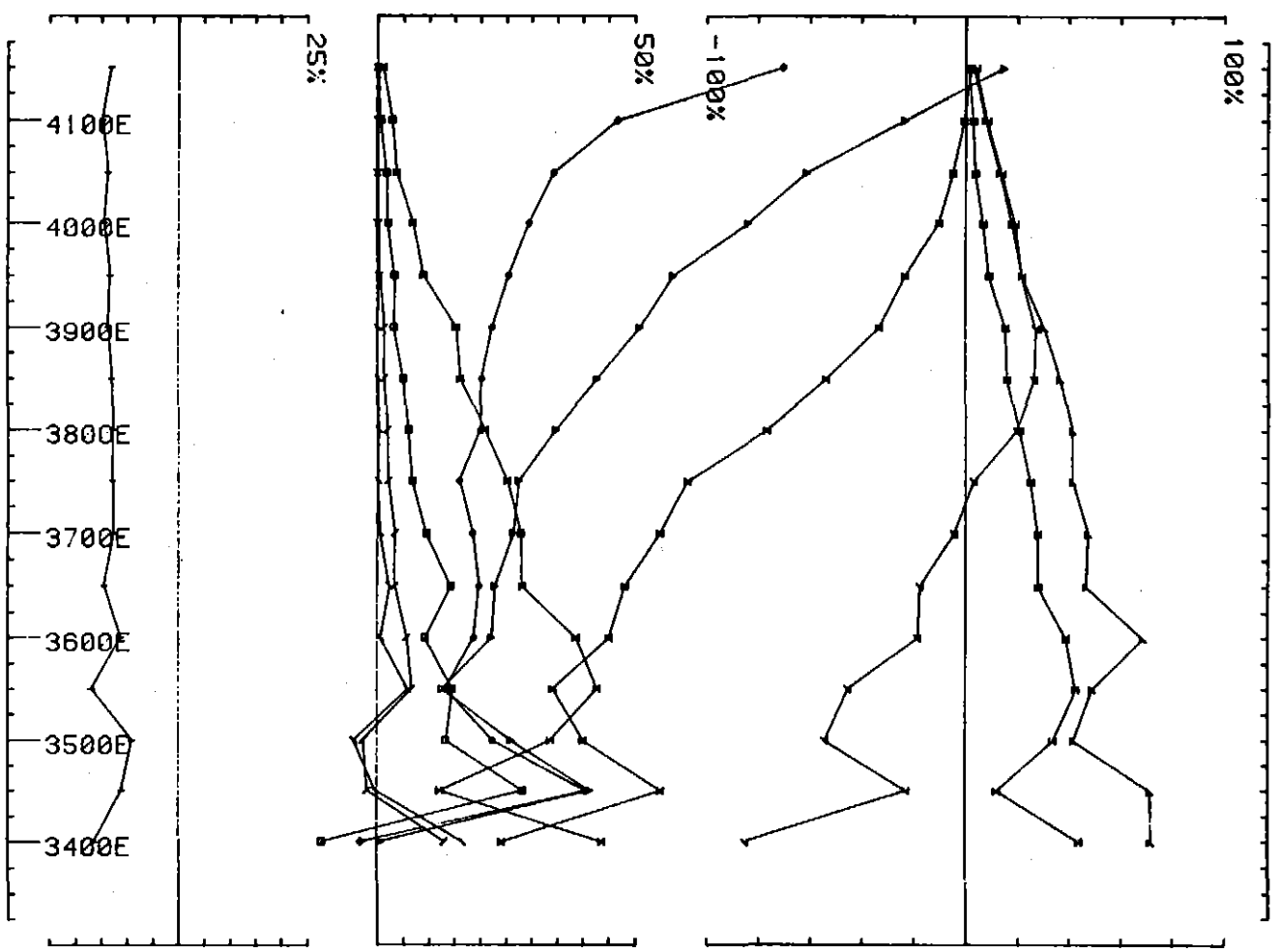


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 11000N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

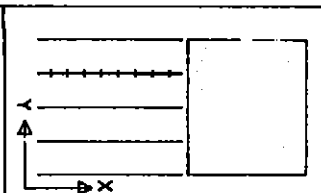


Hellyer Mine
LOOP 0002
LINE 11000
Hz

124

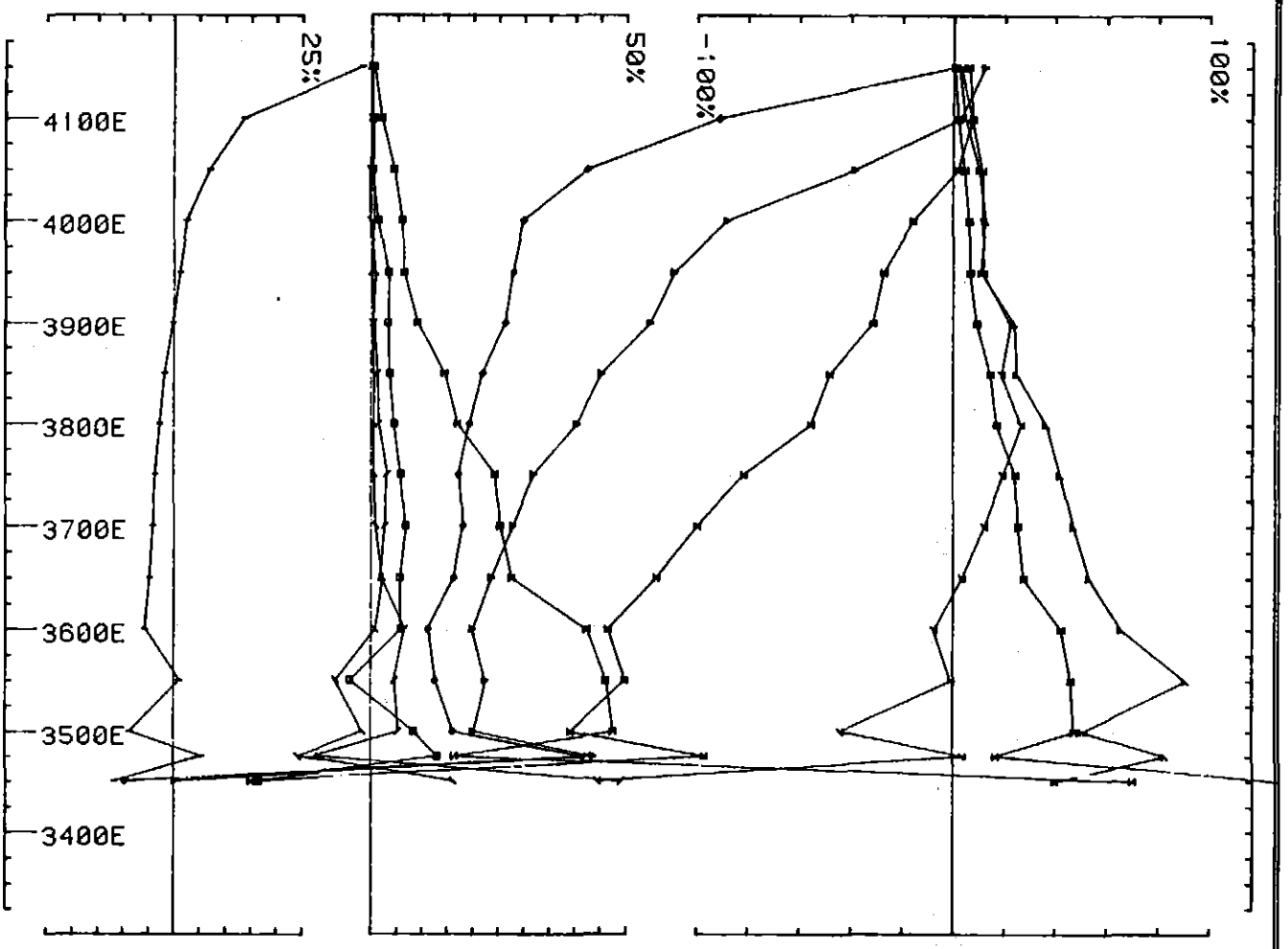


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10800N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

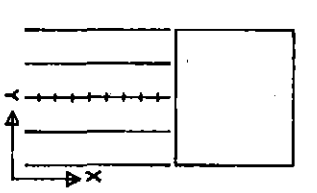


Hellyer Mine
LOOP 0002
LINE 10800
Hz

125

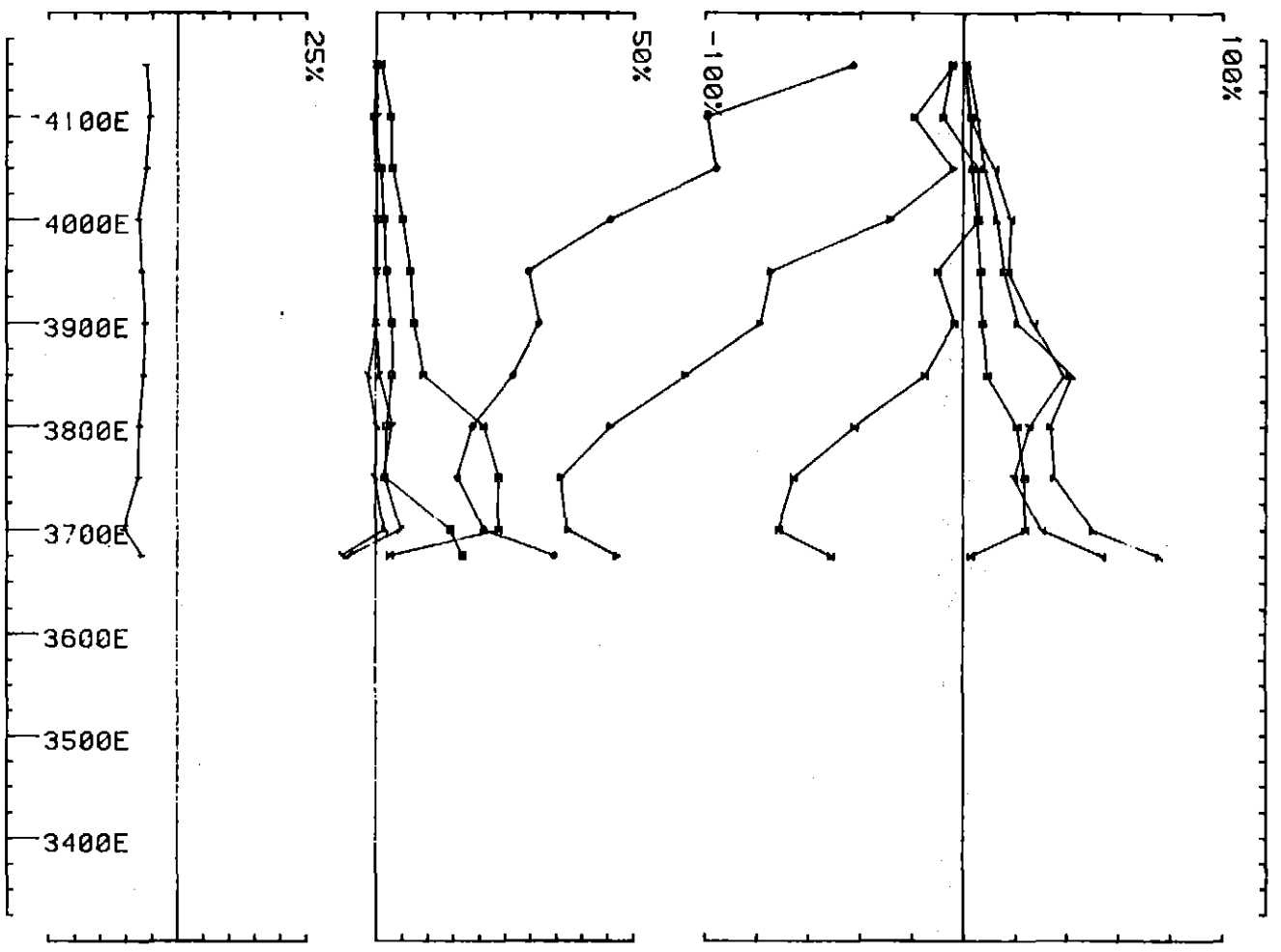


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AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10600N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

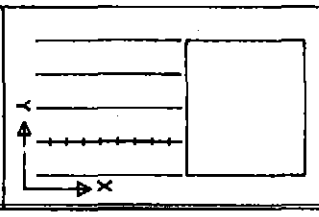


Hellyer Mine
LOOP 0002
LINE 10600
Hz

126



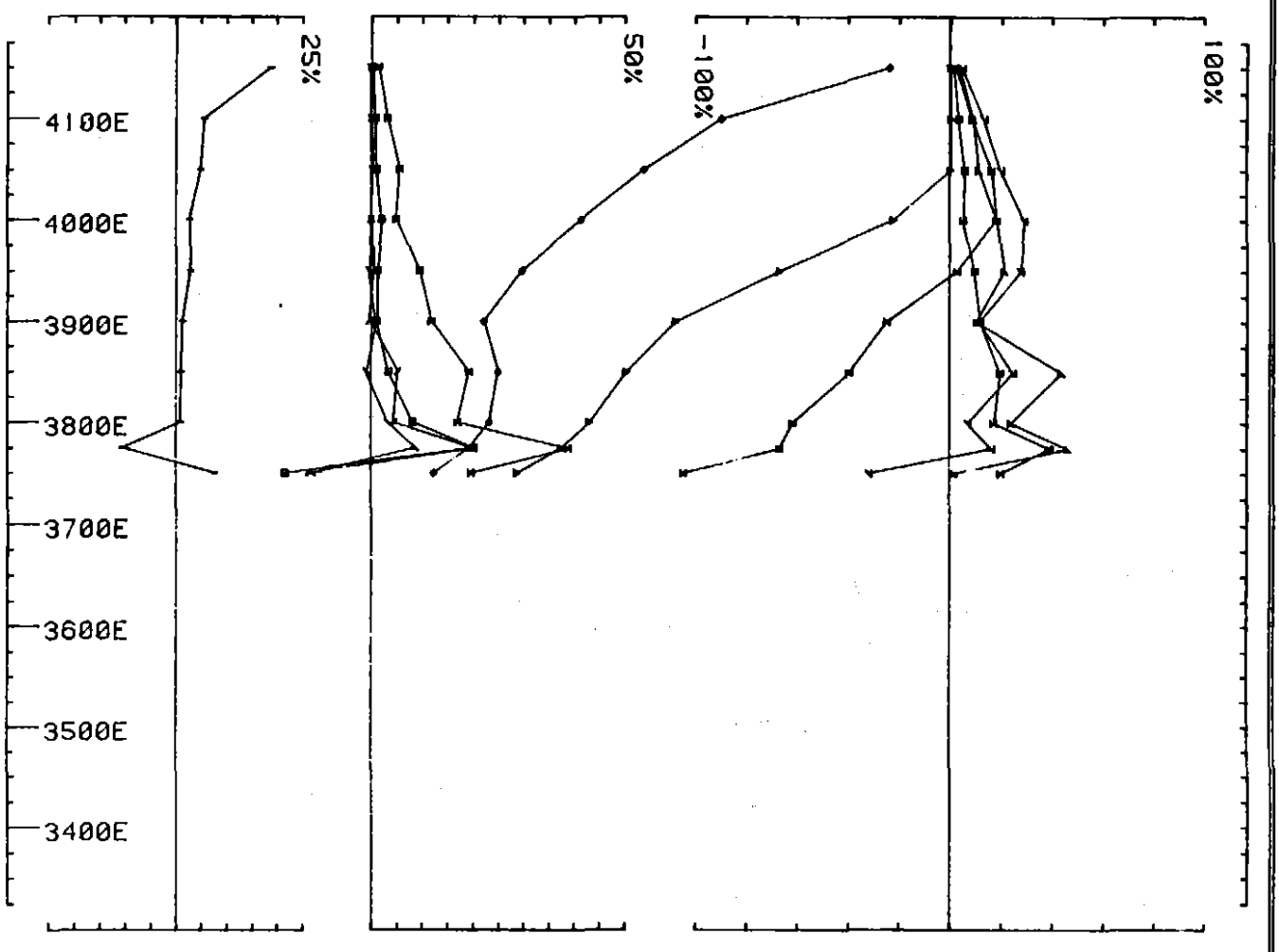
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AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10400N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



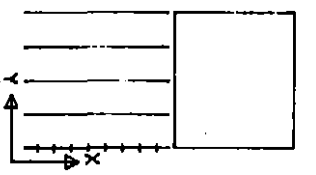
Hellyer Mine
LOOP 0002
LINE 10400
Hz

599128

127



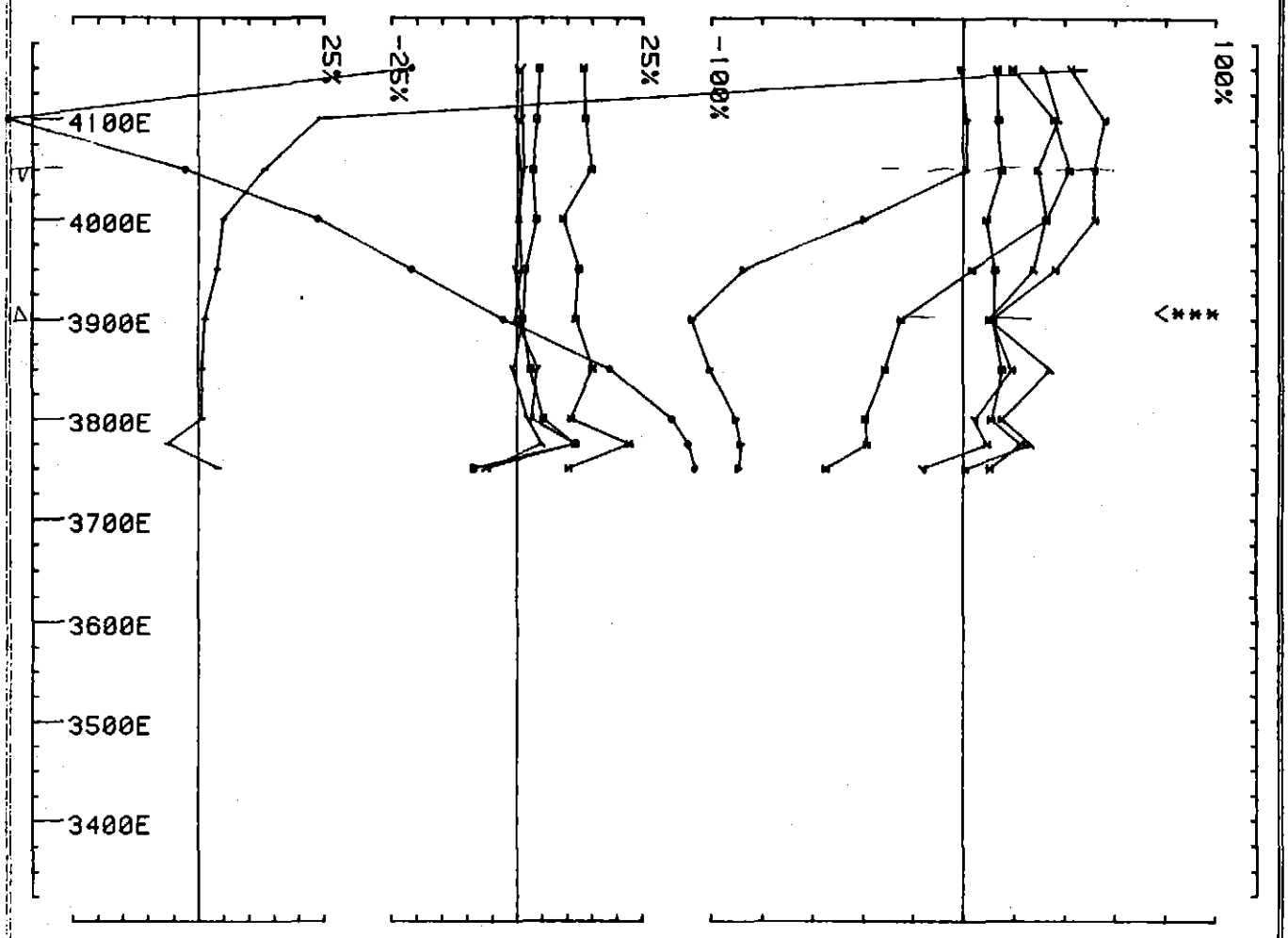
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AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10200N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



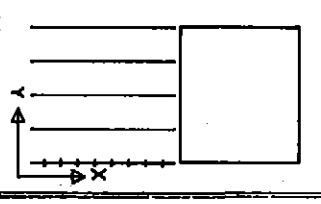
Hellyer Mine
LOOP 0002
LINE 10200
Hz

599129

128

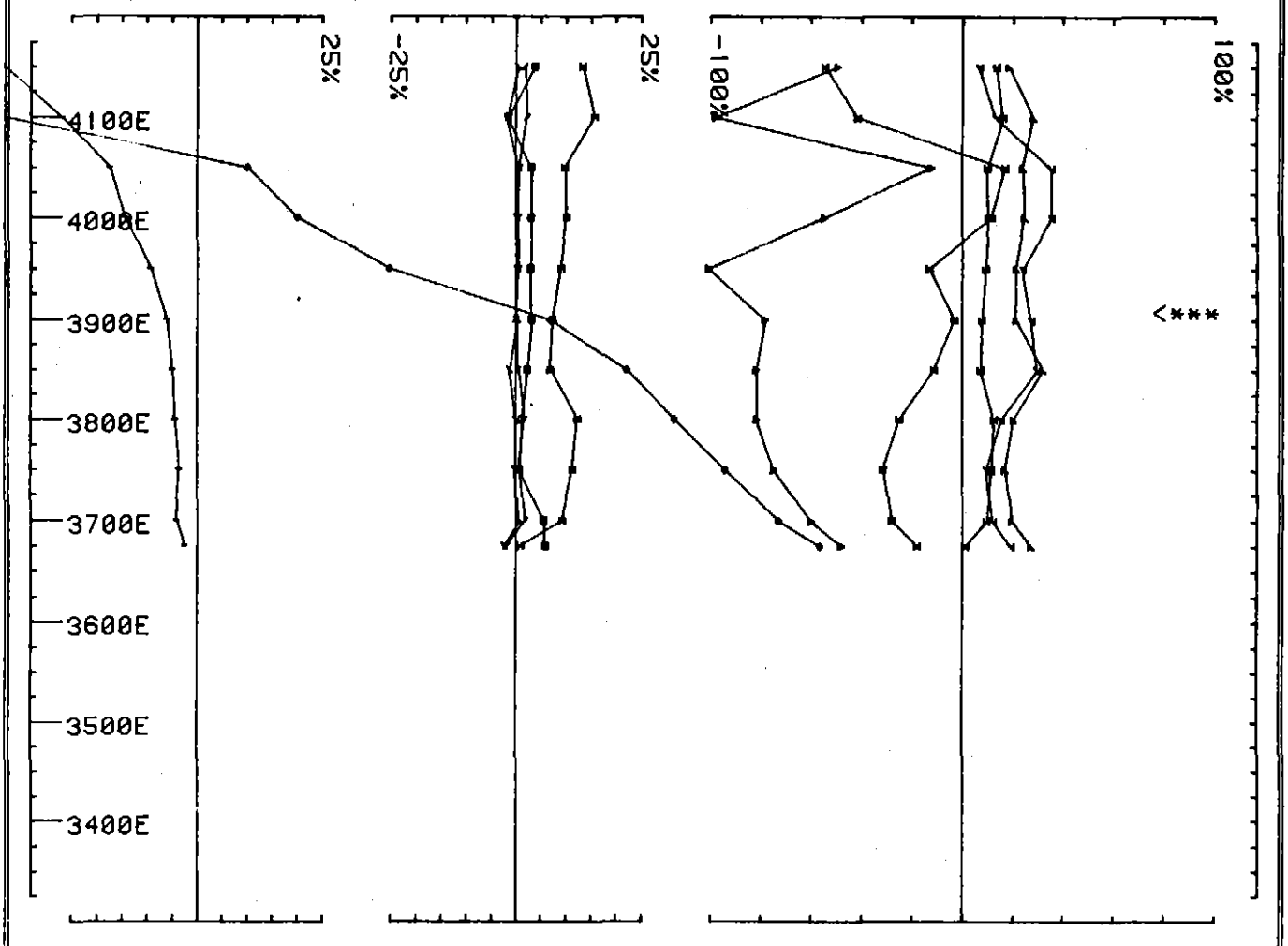


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10200N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

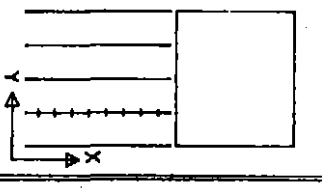


Hellyer Mine
LOOP 8002
LINE 10200
Hz

129

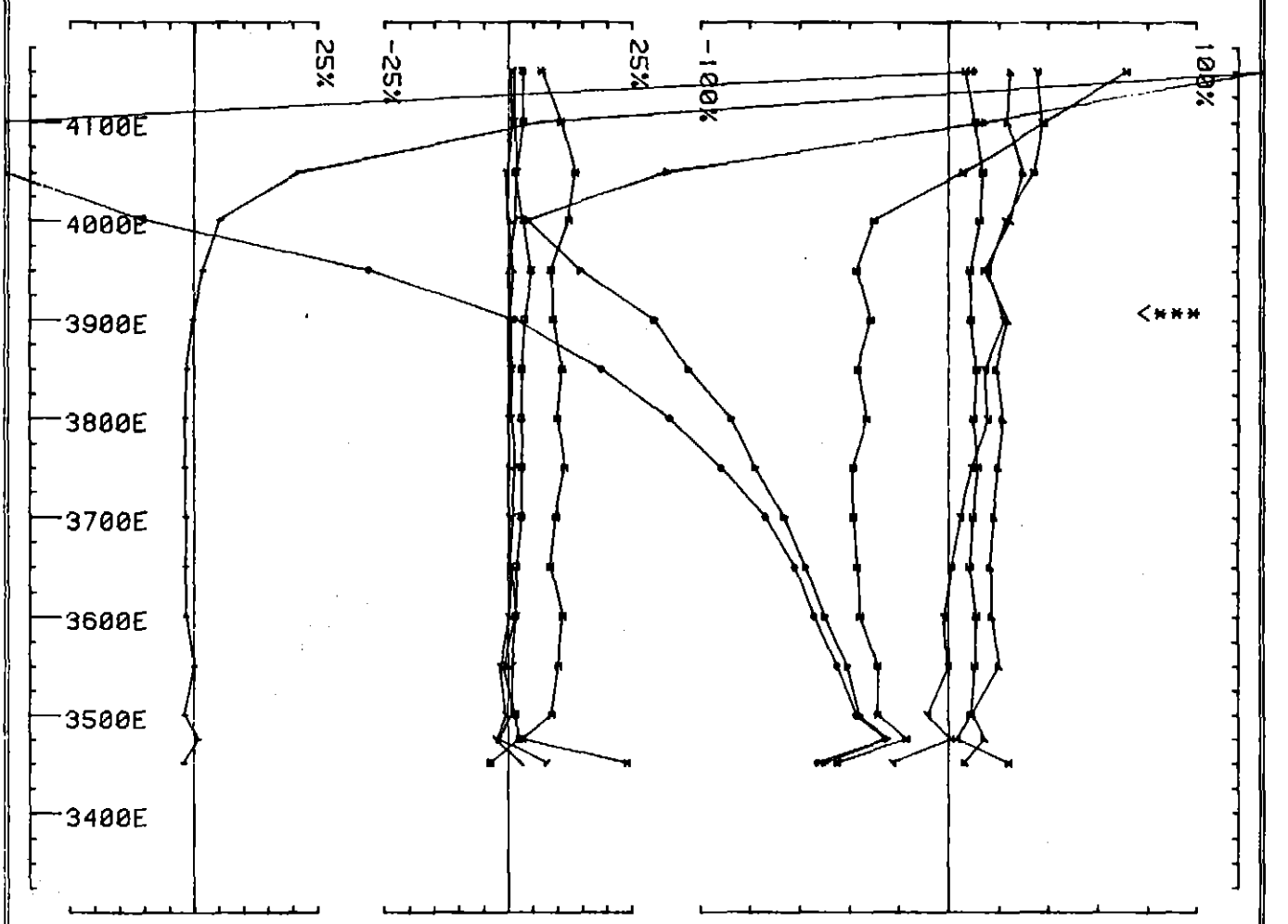


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10400N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

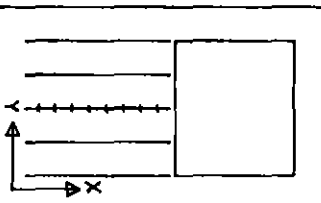


Hellyer Mine
LOOP 8002
LINE 10400
Hz

130



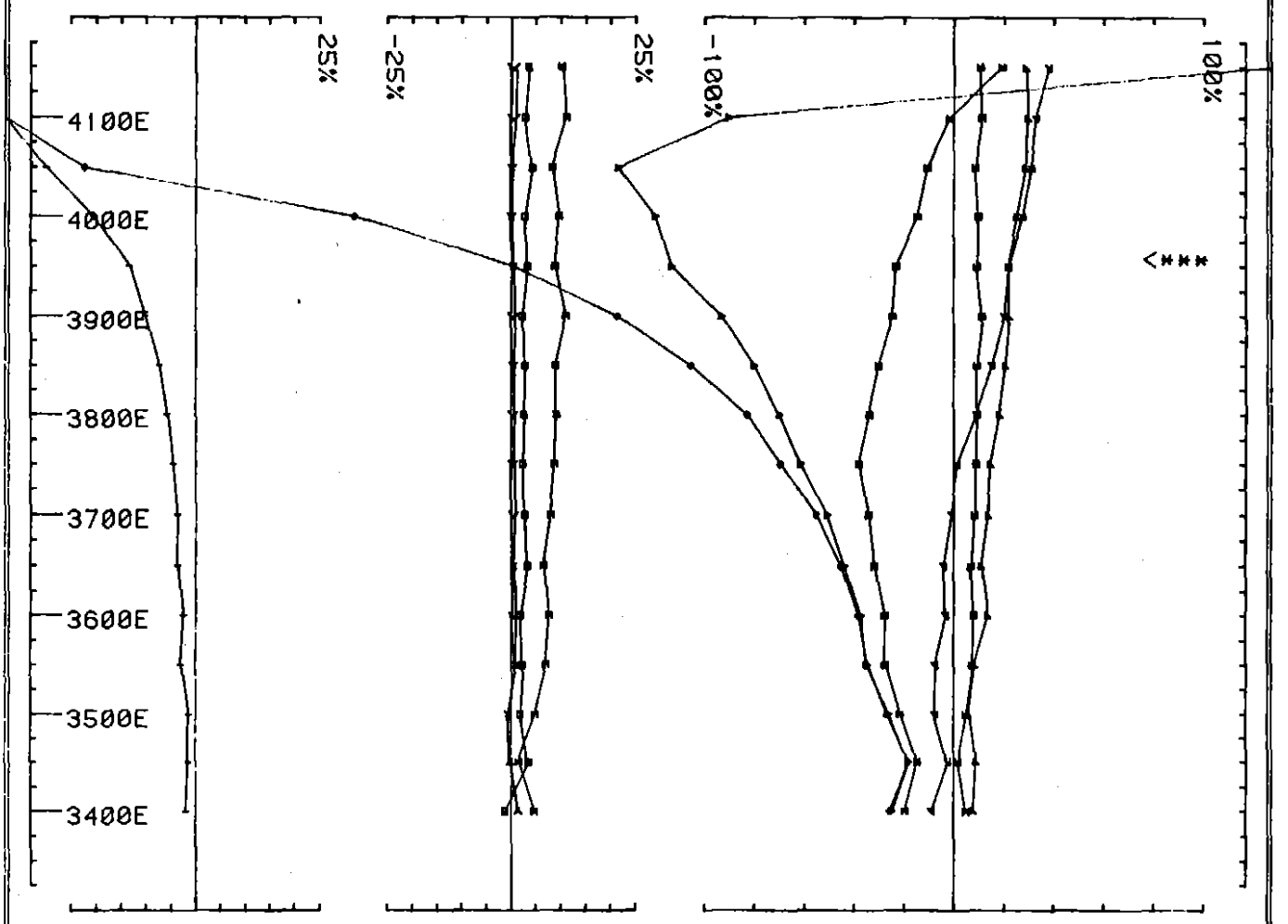
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AREA :- Hellyer Mine
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Line 10600N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION



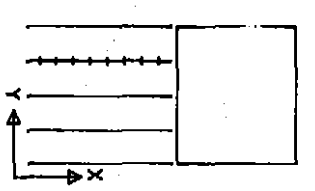
Hellyer Mine
LOOP 0002
LINE 10600
Hz

599132

131



LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8704
AREA :- Hellyer Mine
CLIENT :- Aberfoyle Pty. Ltd. CREW :- BM
Line 10800N Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION



Hellyer Mine
LOOP 8002
LINE 10800
Hz

132

INTERPRETATION REPORT

UTEM SURVEY

MOUNT CHARTER DOLERITE GRID

HATFIELD EL 15/73

Prepared By:

J. Silic

Issued By:

J. Silic

Distribution

Hawthorn (1)

Burnie (1)

LIST OF CONTENTS

INTRODUCTION

SURVEY SPECIFICATIONS

DISCUSSION OF RESULTS

CONCLUSION

REFERENCES

PLATE — UTEM and EM-37 COVERAGE - MAC 113C

APPENDIX 1 — UTEM DATA SECTIONS

INTRODUCTION

Electromagnetic techniques have played important roles in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery Aberfoyle Resources has further refined the use of these techniques in the search for Hellyer and Que River type targets (Silic, 1989).

The purpose of this report is to discuss the results of a UTEM (West et al, 1984) survey over the Mount Charter Dolerite grid on the Hatfield licence. (Plate 1)

SURVEY SPECIFICATIONS

A two loop, eight line UTEM survey, covering lines 2800E to 3500E from 3800N to 4600N was conducted over the Mount Charter dolerite grid.

Vertical component data (Hz) was collected at 25-50 meter station spacing.

The purpose of the survey was to search for possible mineralised systems, which could be associated with the anomalous base metal geochemistry along the Mount Charter fault.

DISCUSSION OF THE RESULTS

The most notable features of this survey are a set of anomalous cross-overs at approximately 4500N, lasting beyond 1 millisecond on lines 2800E, 2900E, 3000E, 3100E and 3200E. Superficially, this anomalous response is similar to the Hellyer deposit response, in particularly, that it lasts to similar times. Using the second derivative technique from Silic, 1989, however, the response is identified as being due to a broad near the surface moderately conductive formation. In this case it is interpreted that this formation is the Que River shale, and as such the overlying dolerite must be a sill.

CONCLUSION

The anomalous response, noted over the westerly part of the grid is interpreted to be due to the Que River shales, below the overlaying dolerite sill.

REFERENCES

Eadie, E. T., Silic J. and Jack, D. J. (1985), 'The application of geophysics to the discovery of the Hellyer ore deposit, Tasmania', Explor. Geophys. 16, 207-209.

Silic J. (1989), 'Interpretation of TDEM data using spatial derivatives and decay analysis', Explor. Geophys. 20

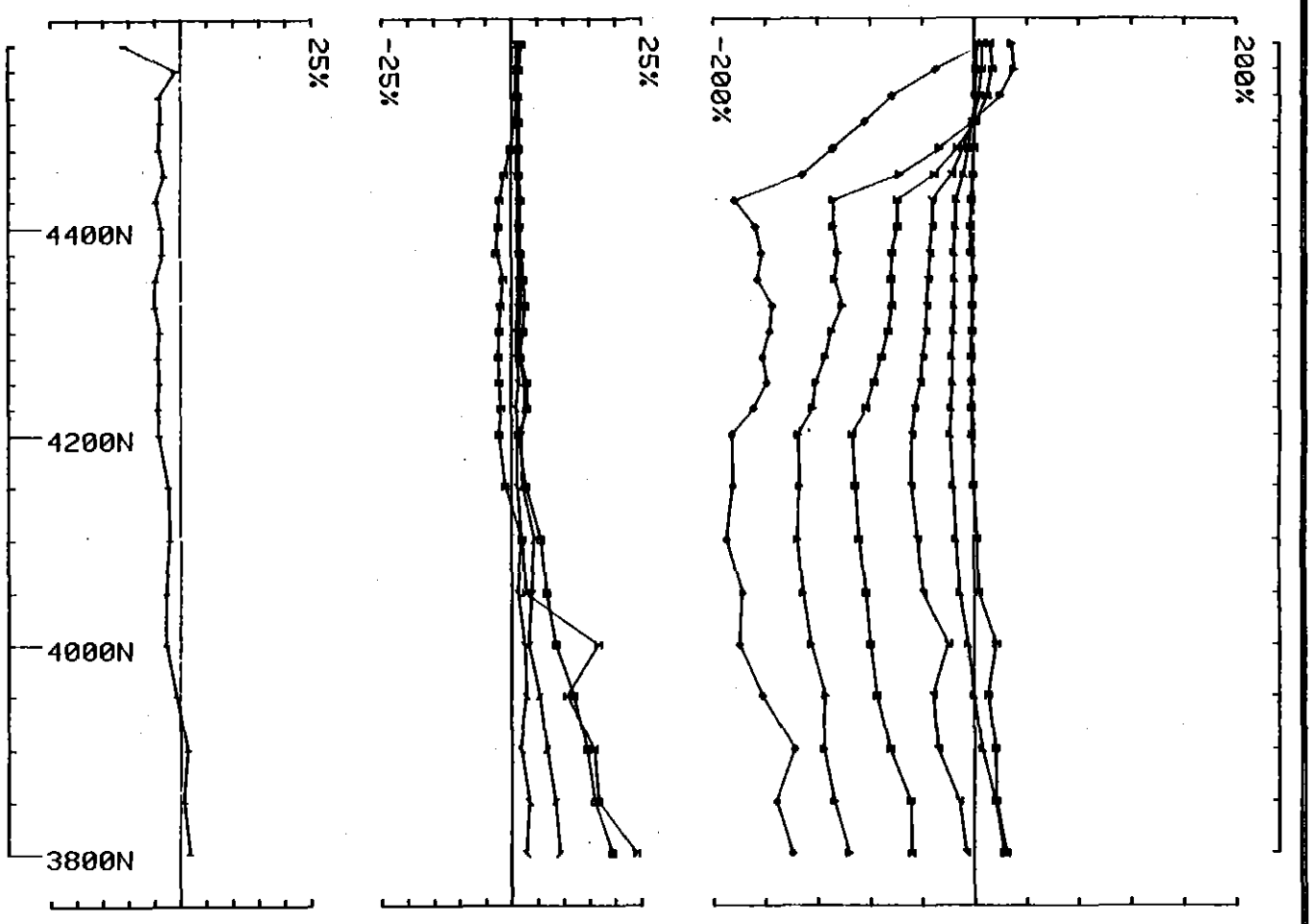
Silic J., Eadie, E. T., and Jack, D. J. (1985), 'Application of time domain electromagnetic methods in the discovery of the Hellyer ore deposit, Tasmania, Australia', in volume of Extended Abstracts of the 55th SEG meeting, Washington, DC.

Webster, S. S. and Skey, E. H. (1979), 'Geophysical and geochemical case history of the Que River deposit, Tasmania', in Geophysics and Geochemistry in the Search for Metallic Ores; Peter J. Hood, editor, Geological Survey of Canada, Economic Geology Report 31, 697-720.

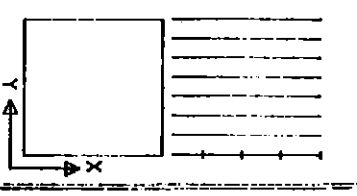
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APPENDIX 1

137

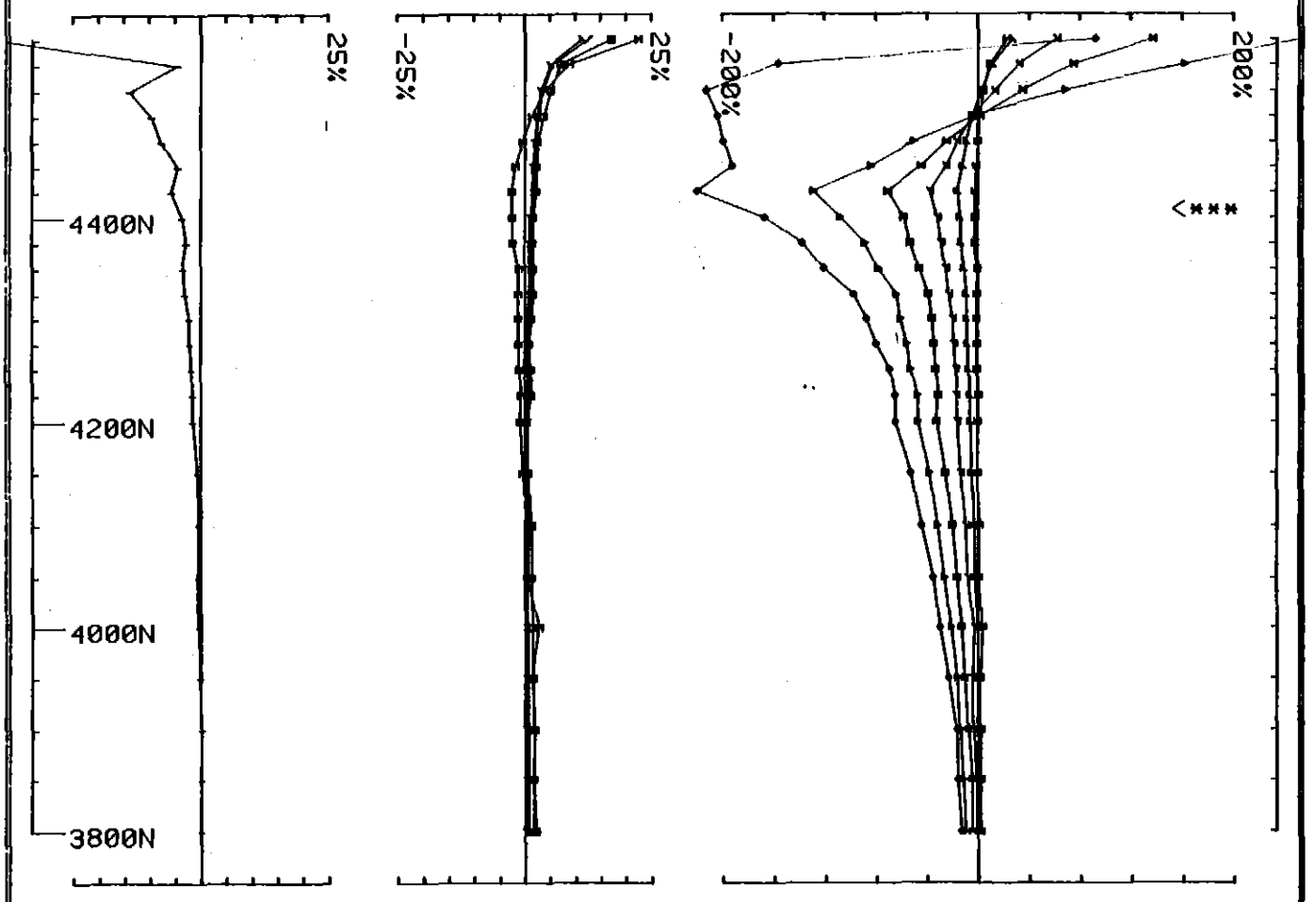


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L2800E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

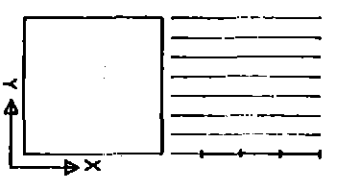


HATFIELD
LOOP 8033
LINE 2800E
Hz

138

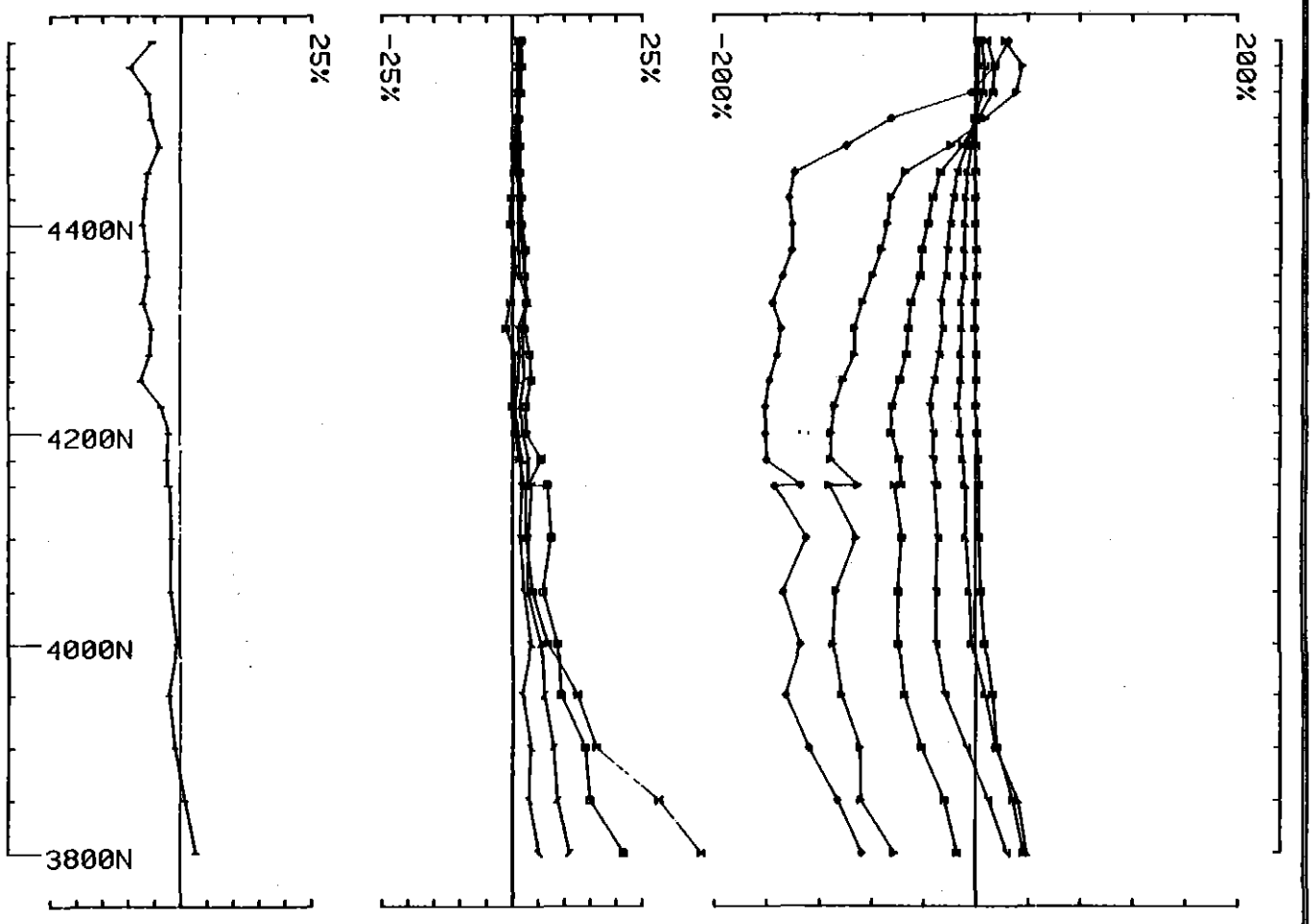


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
Line 2800E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

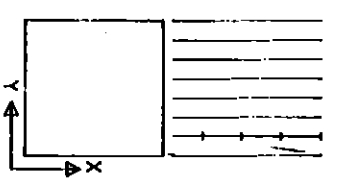


HATFIELD
LOOP 8003
LINE 2800
Hz

139

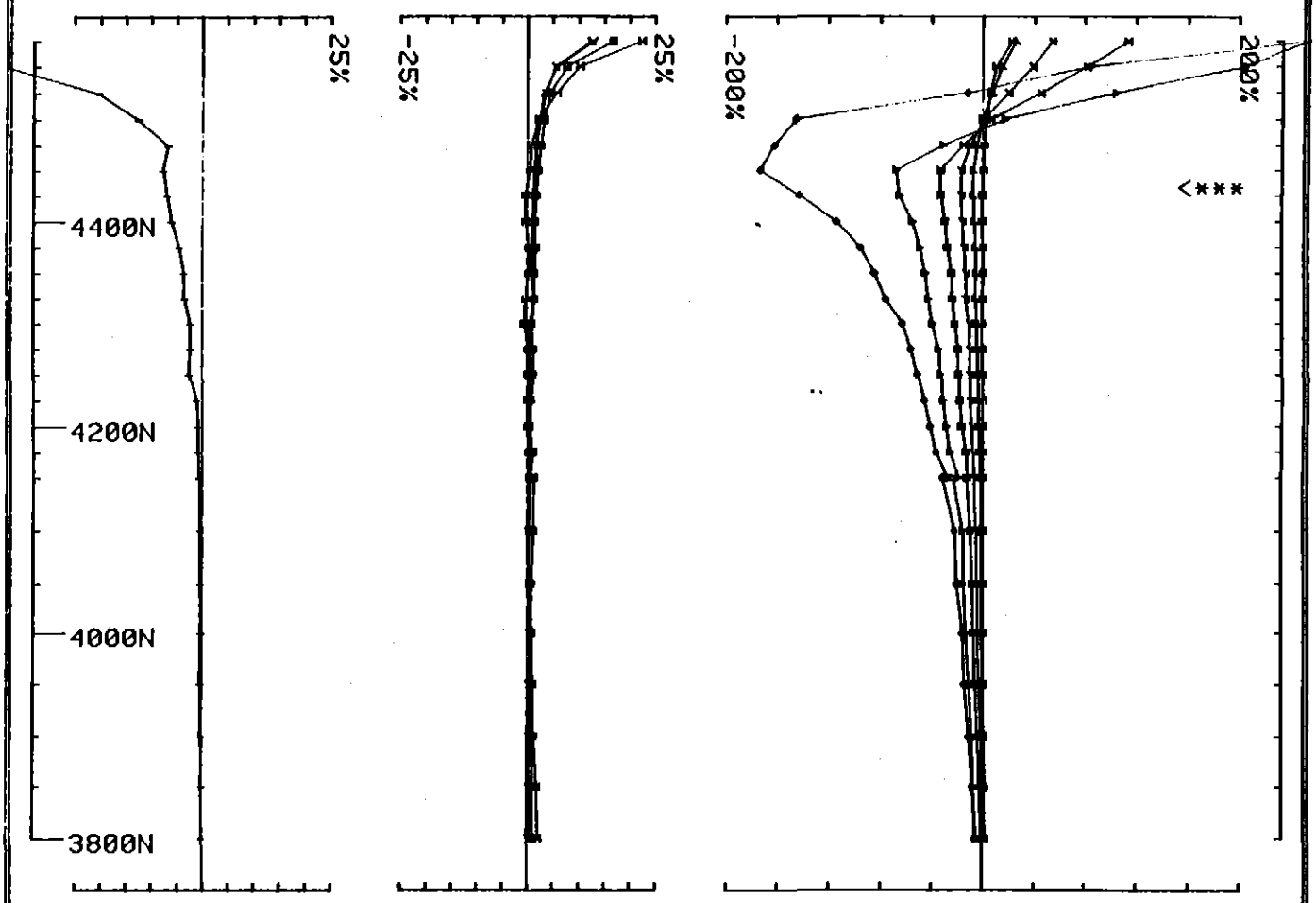


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L2900E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

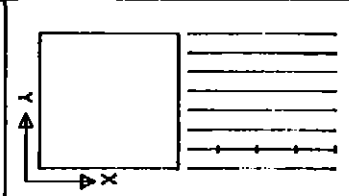


HATFIELD
LOOP 8033
LINE 2900E
Hz

140

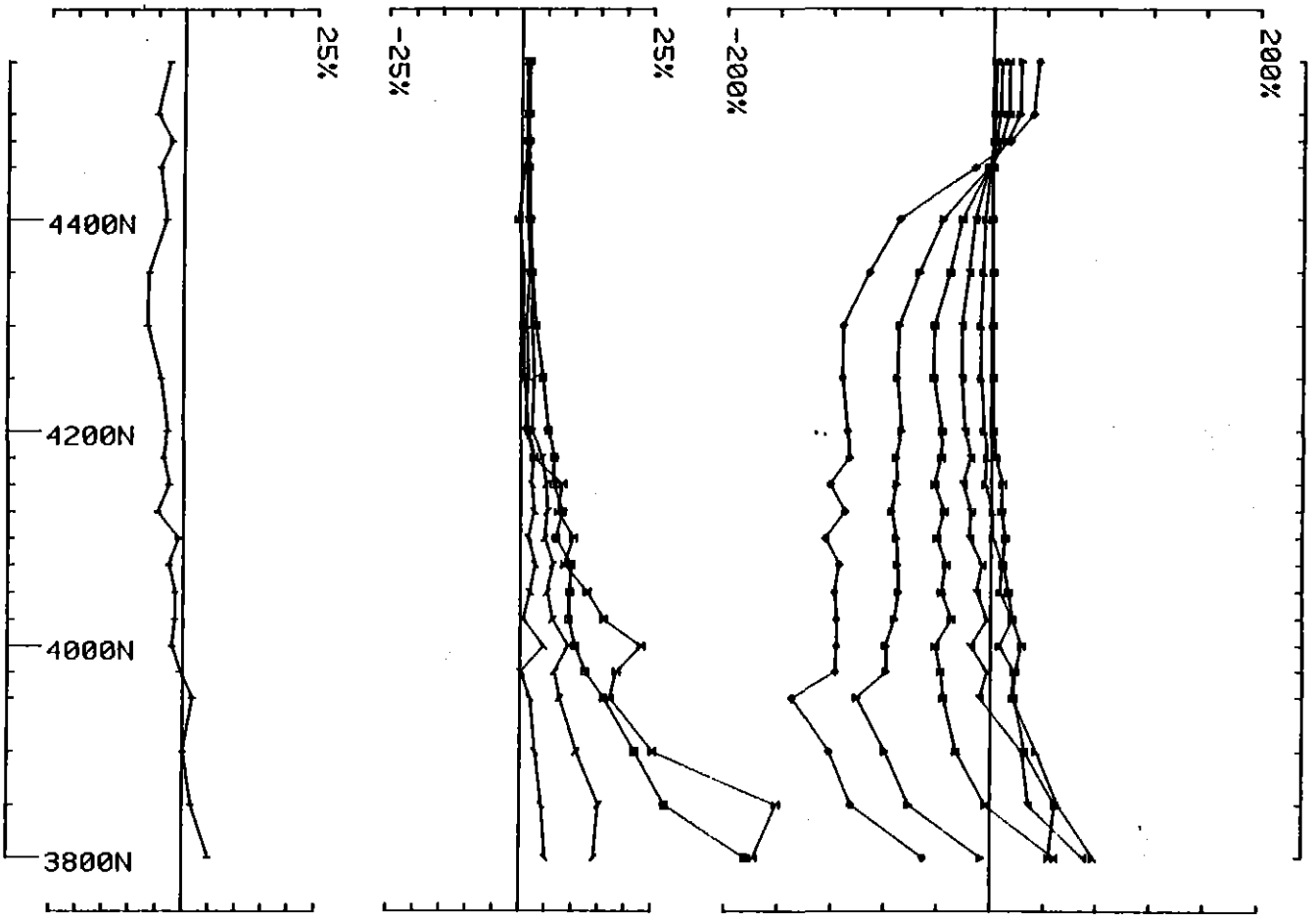


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
Line 2900E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

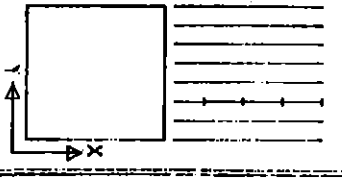


HATFIELD
LOOP 8033
LINE 2900
Hz

141

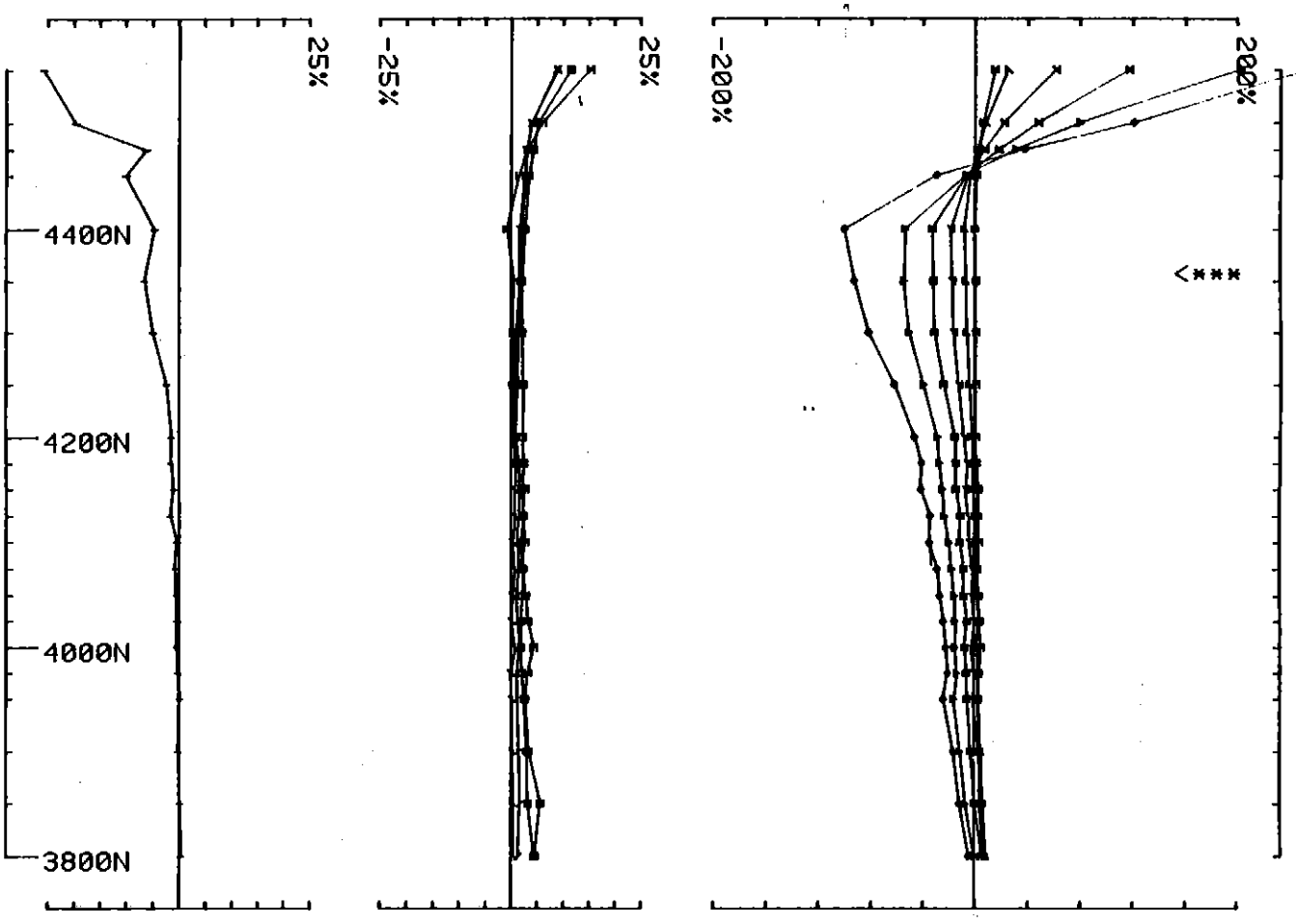


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8001
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3000E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

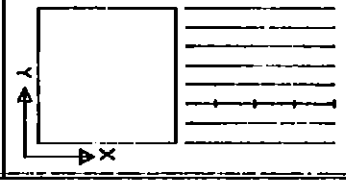


HATFIELD
LOOP 0023
LINE 3000E
Hz

142

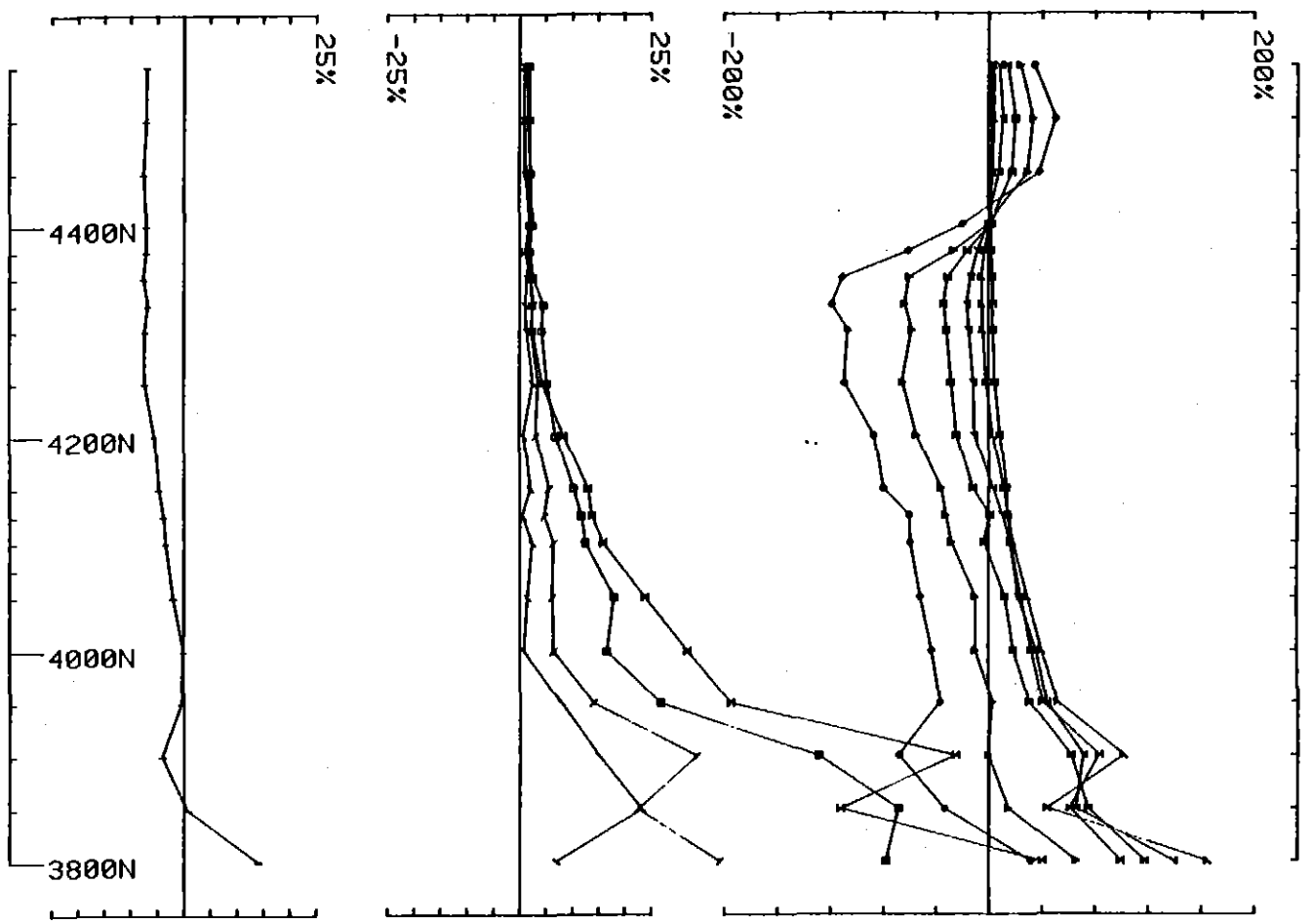


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
Line 3000E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

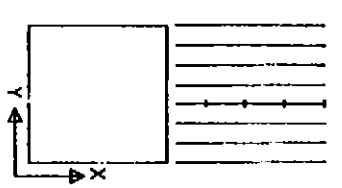


HATFIELD
LOOP 8603
LINE 3000
Hz

143



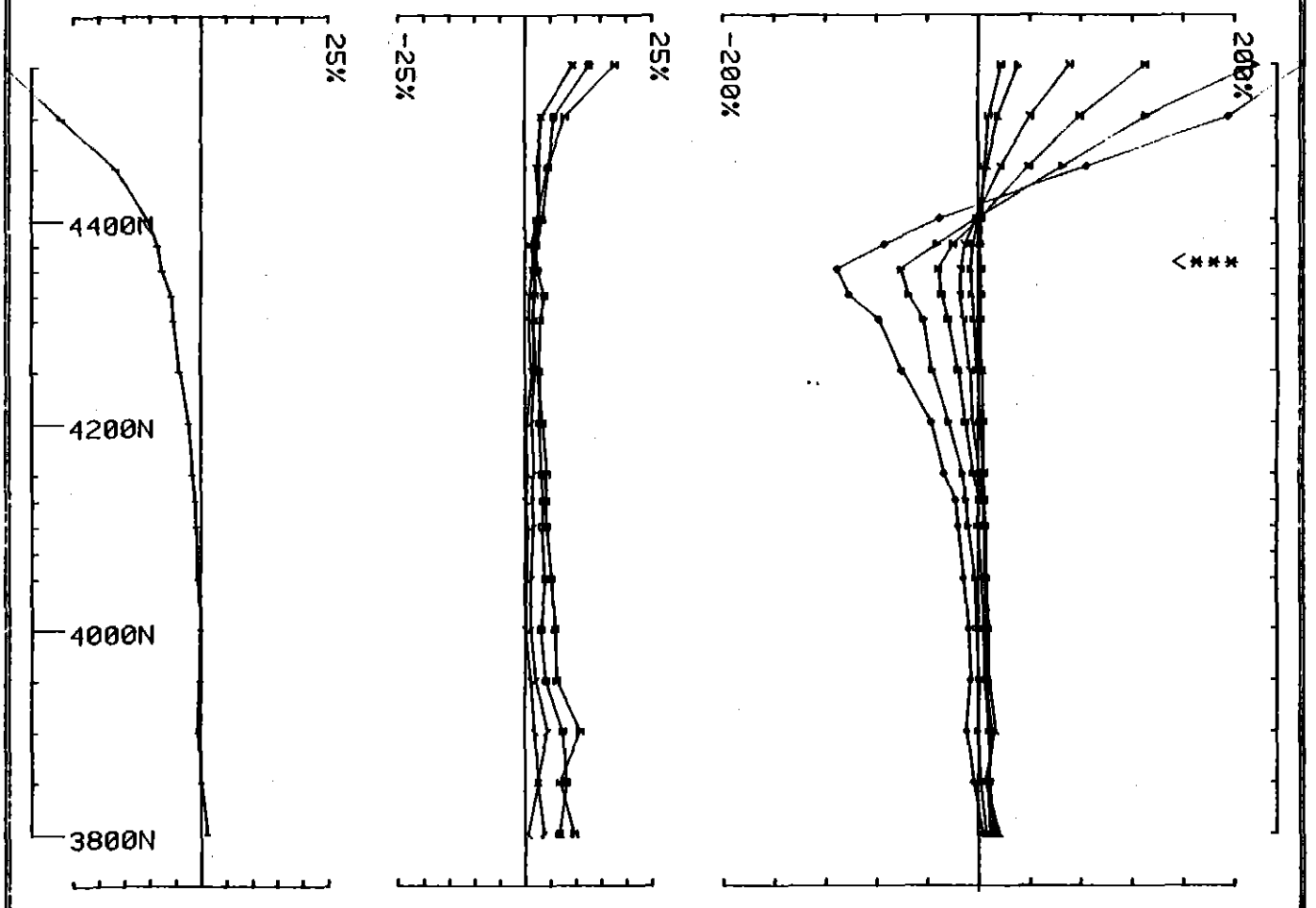
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3100E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



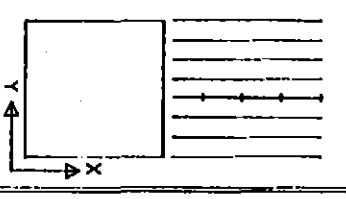
HATFIELD
LOOP 8033
LINE 3100E
Hz

599145

144

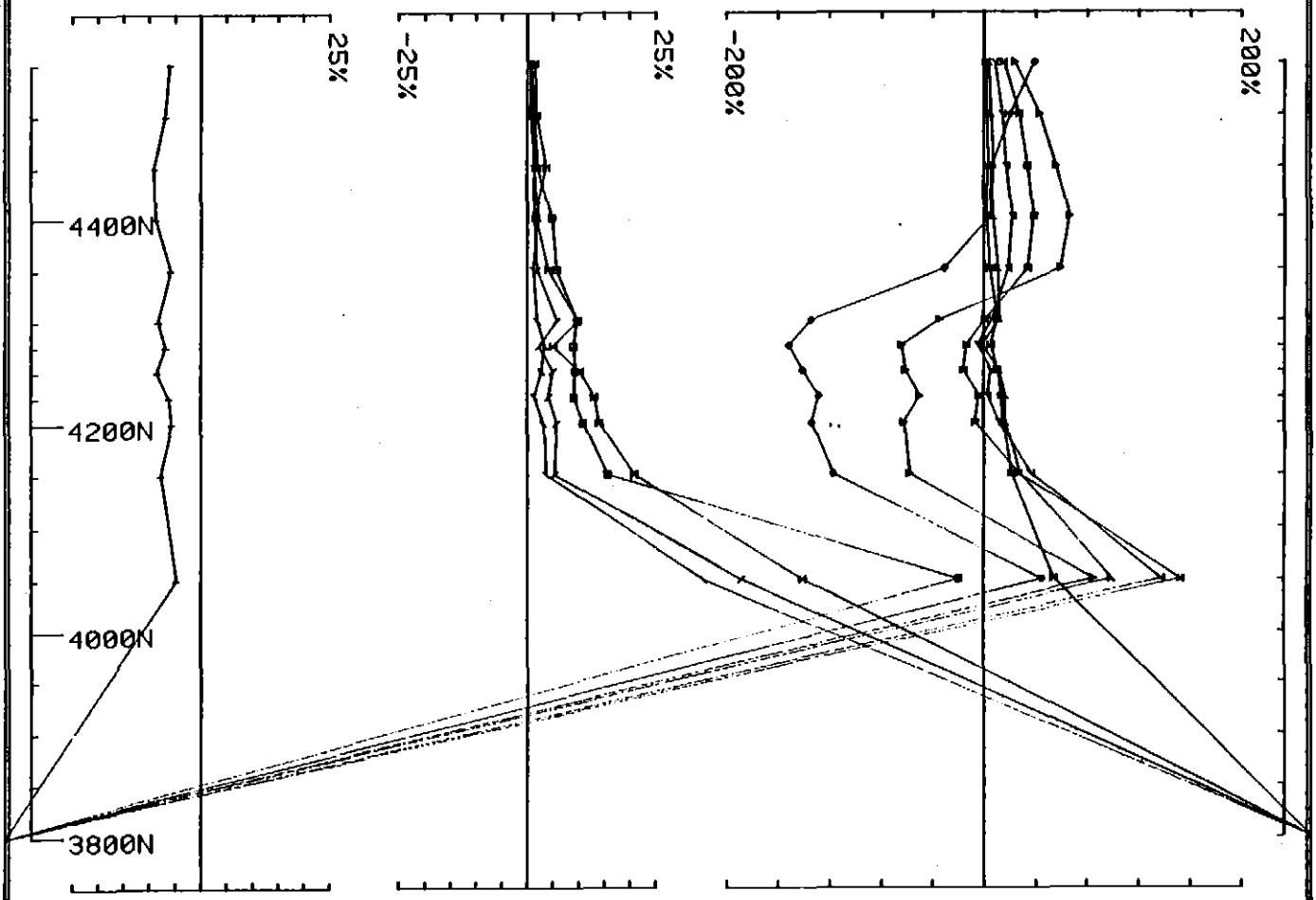


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
Line 3100E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

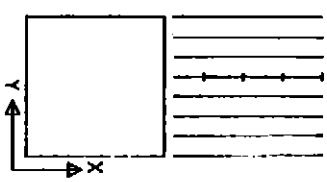


HATFIELD
LOOP 8033
LINE 3100
Hz

145

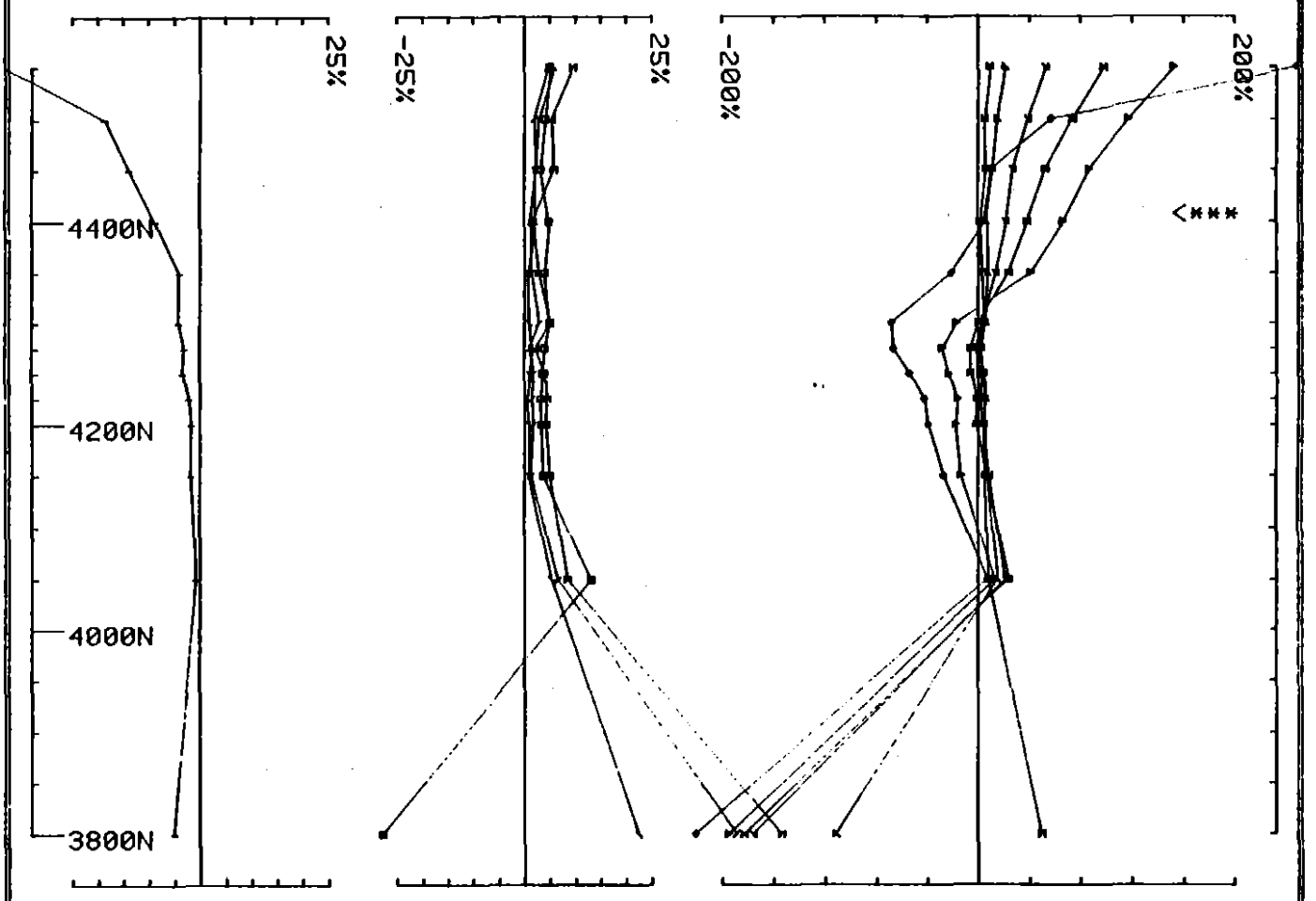


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3200E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

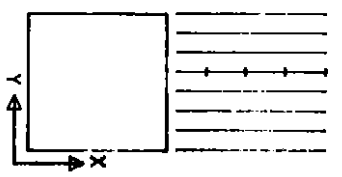


HATFIELD
LOOP 0033
LINE 3200E
Hz

146

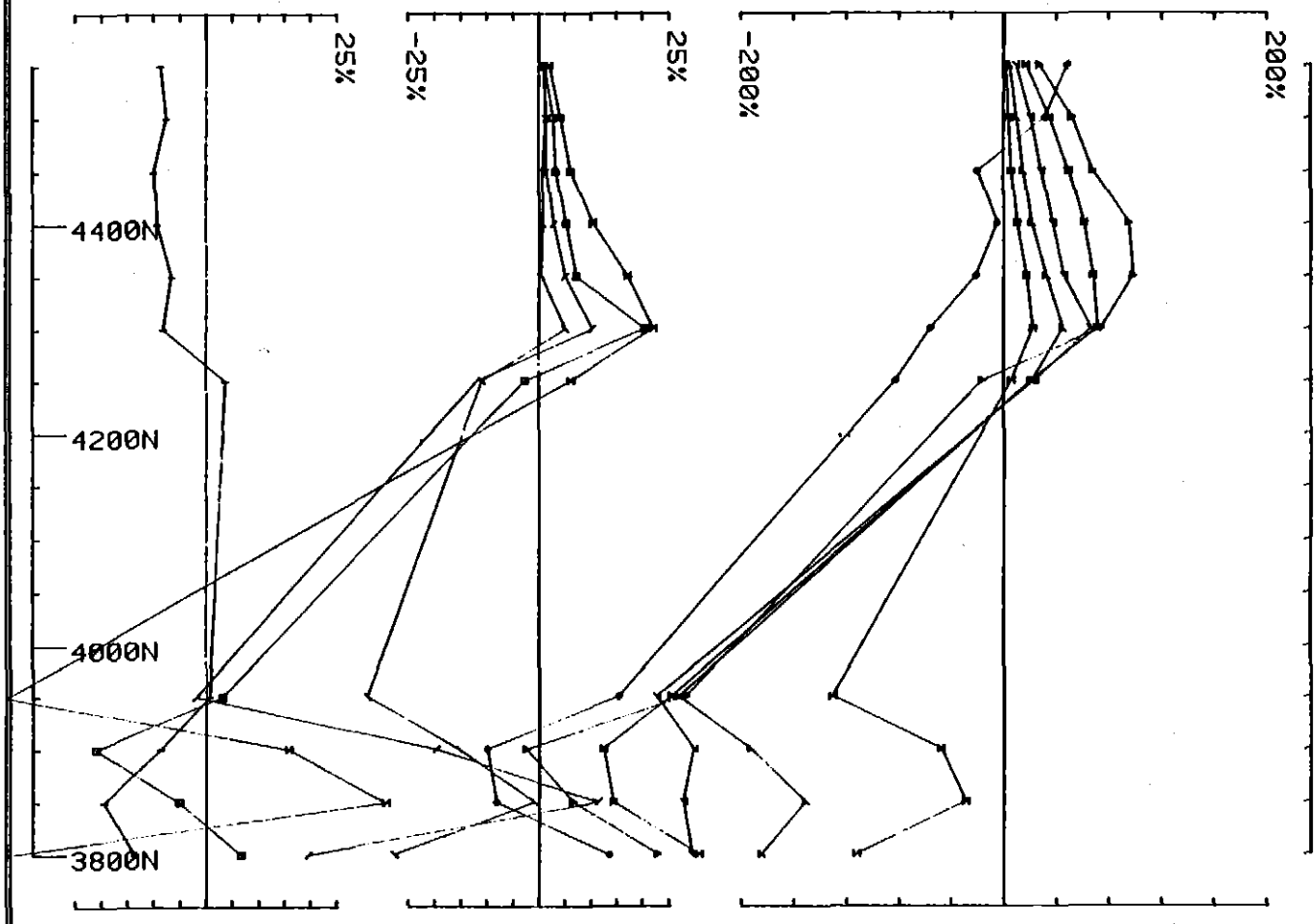


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
Line 3200E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

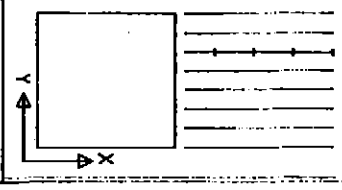


HATFIELD
LOOP 0033
LINE 3200
Hz

147

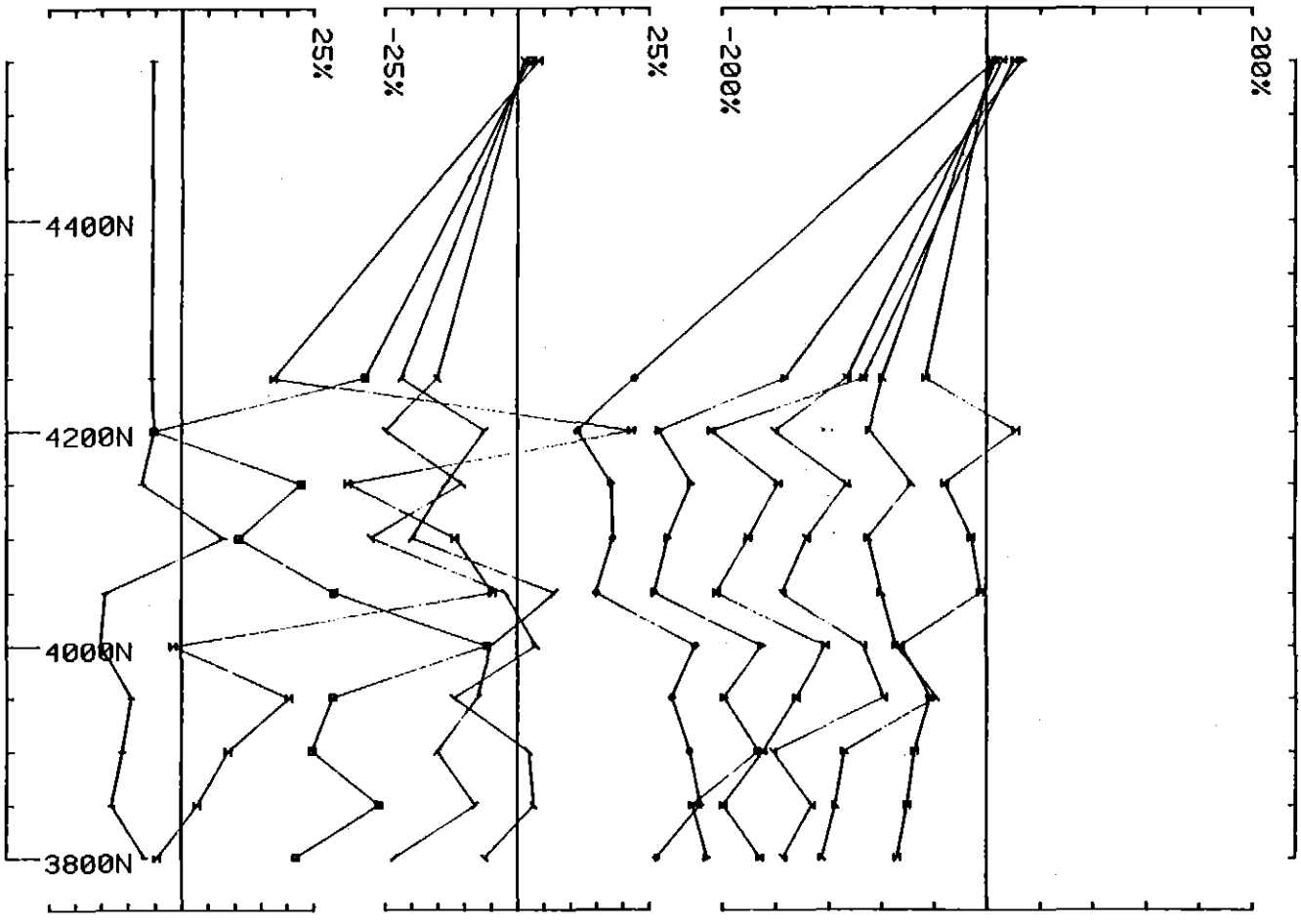


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3300E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

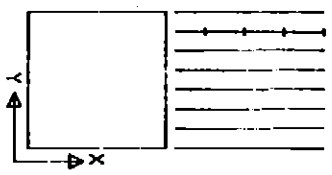


HATFIELD
LOOP 8033
LINE 3300E
Hz

148

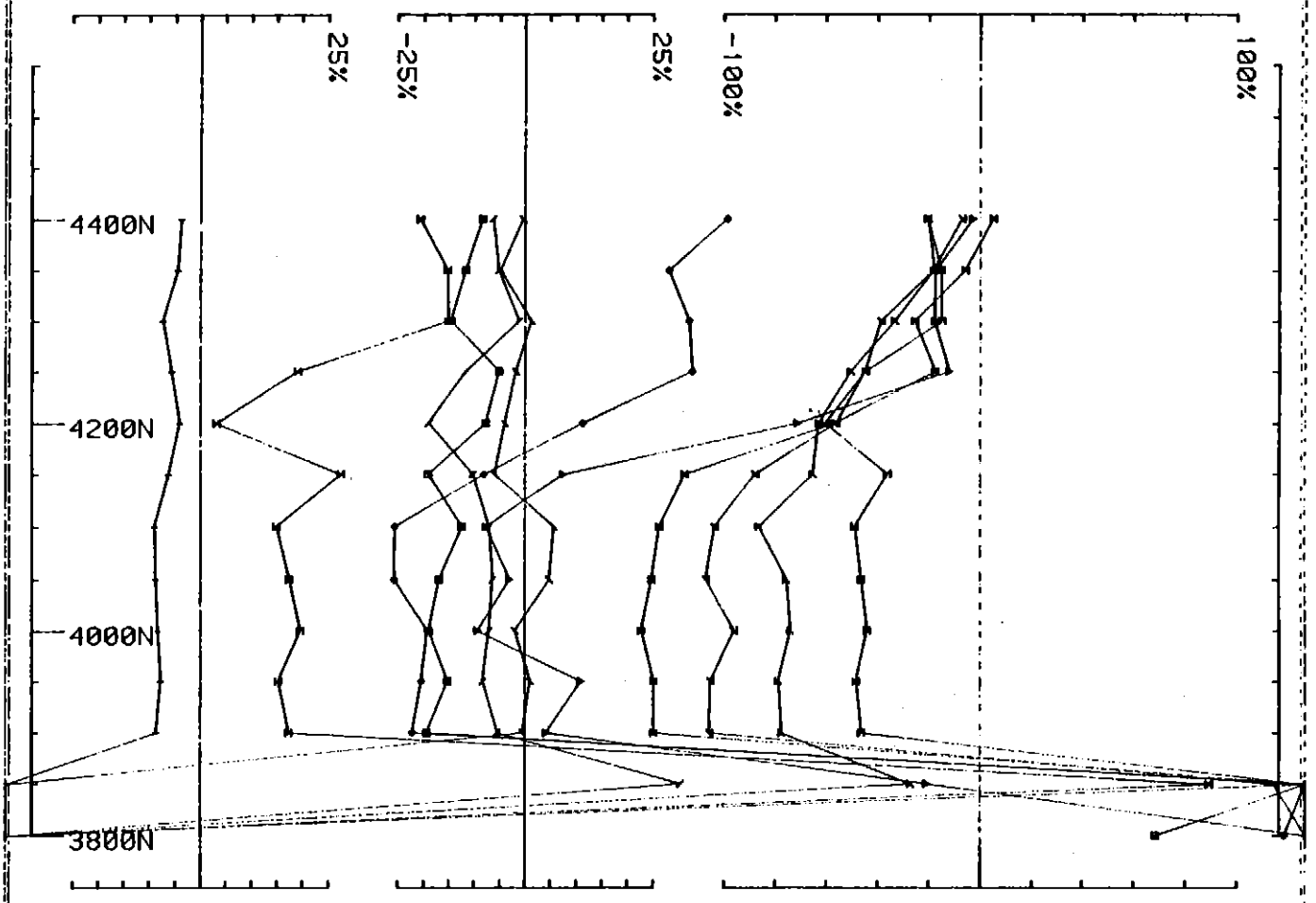


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3400E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

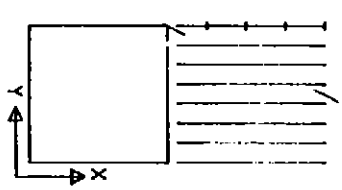


HATFIELD
LOOP 8033
LINE 3400E
Hz

149



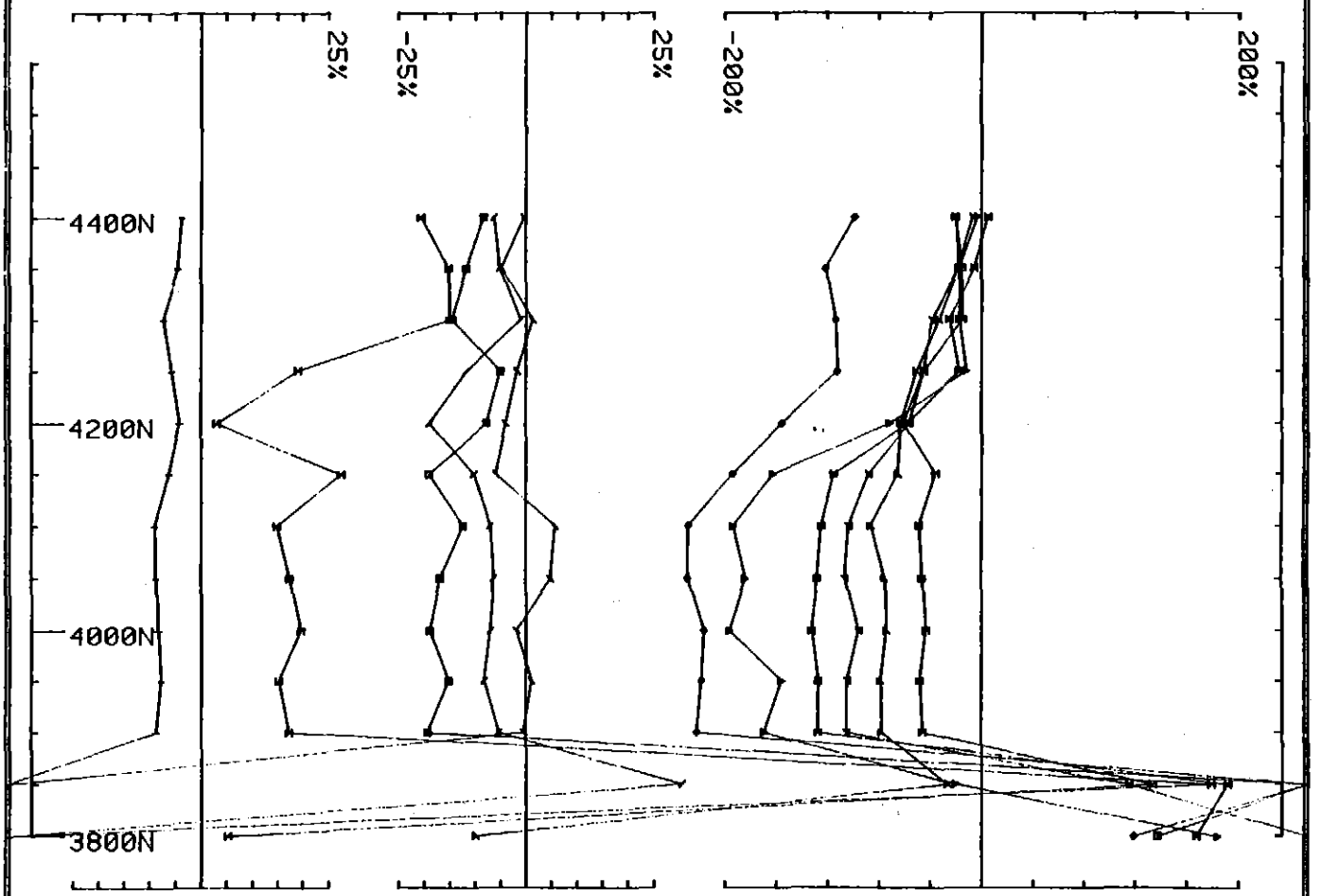
LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3500E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



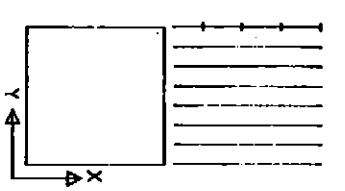
HATFIELD
LOOP 8033
LINE 3500E
Hz

599151

150

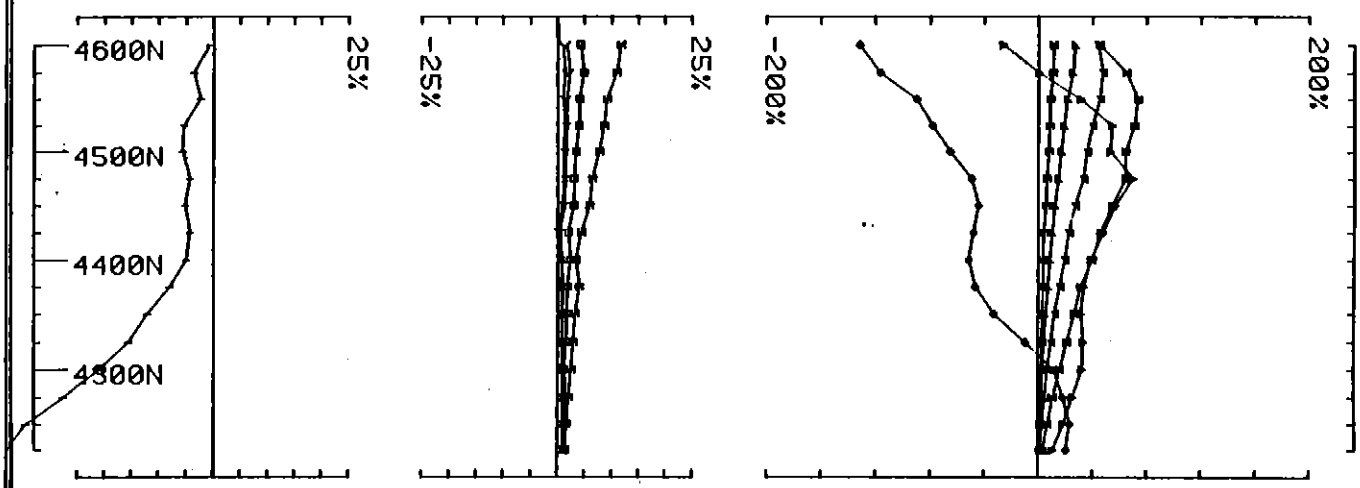


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- JGR BJS
L3500E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

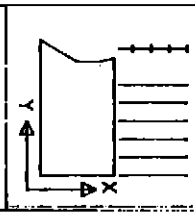


HATFIELD
LOOP 0033
LINE 3500E
Hz

151

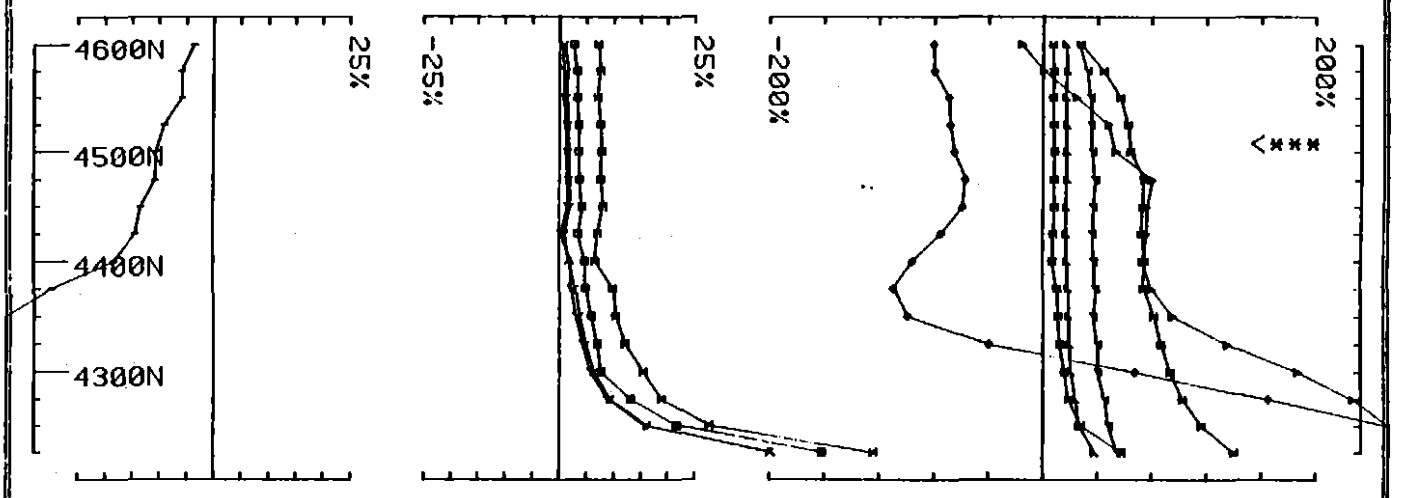


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
L2600E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

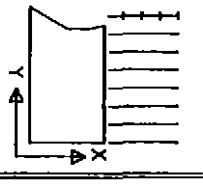


HATFIELD
LOOP 0034
LINE 2600E
Hz

152

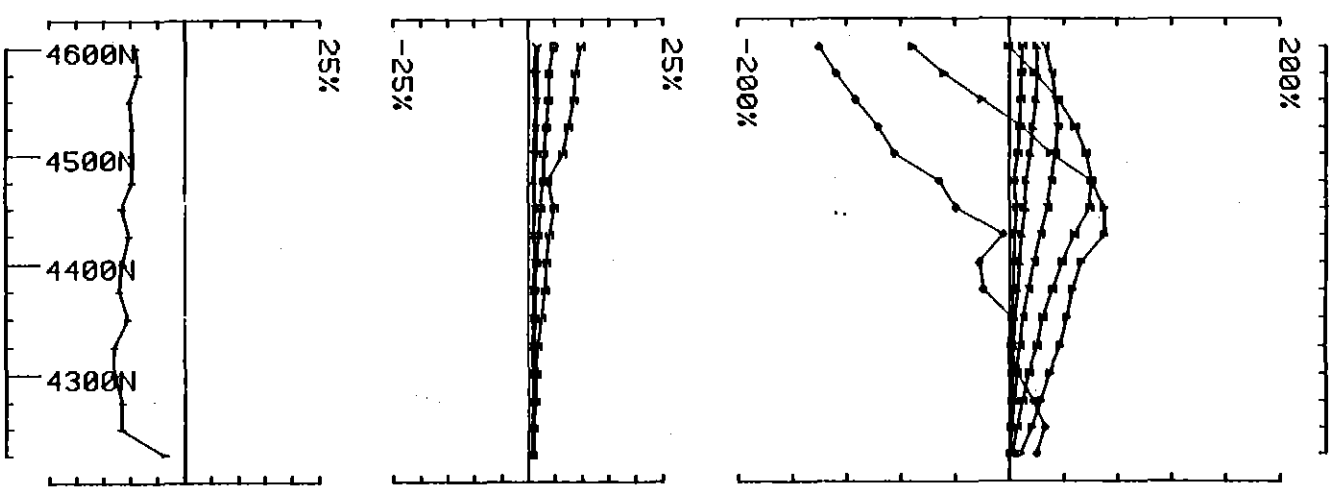


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 2600E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

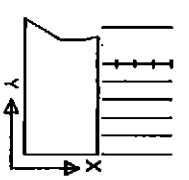


HATFIELD
LOOP 8034
LINE 2600
Hz

153

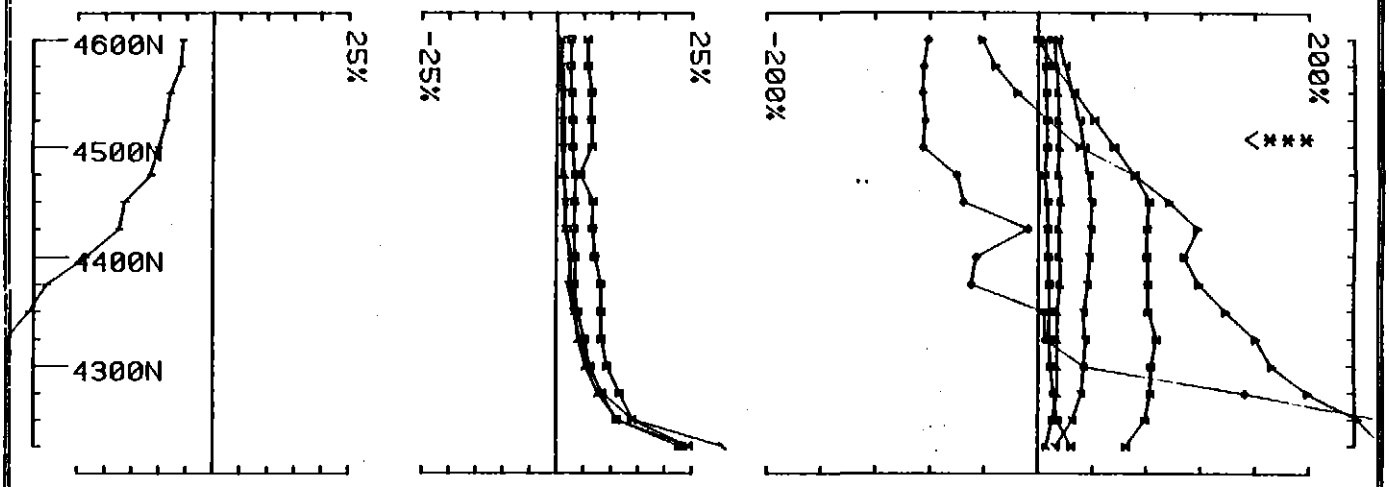


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
L2800E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

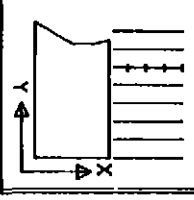


HATFIELD
LOOP 0034
LINE 2800E
Hz

154

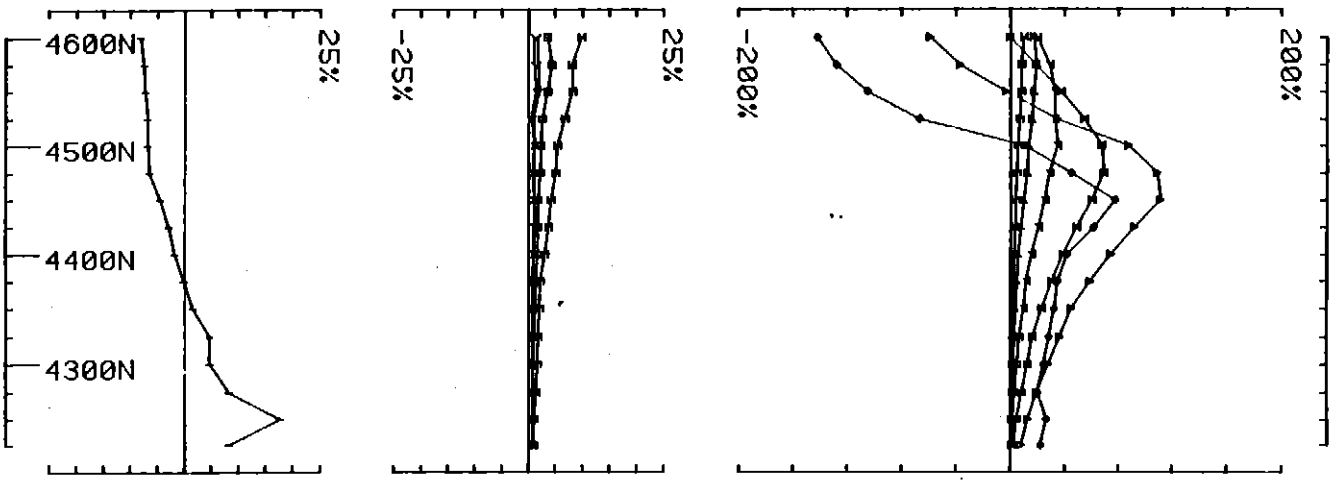


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 2800E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

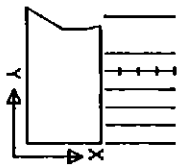


HATFIELD
LOOP 8034
LINE 2800
Hz

155

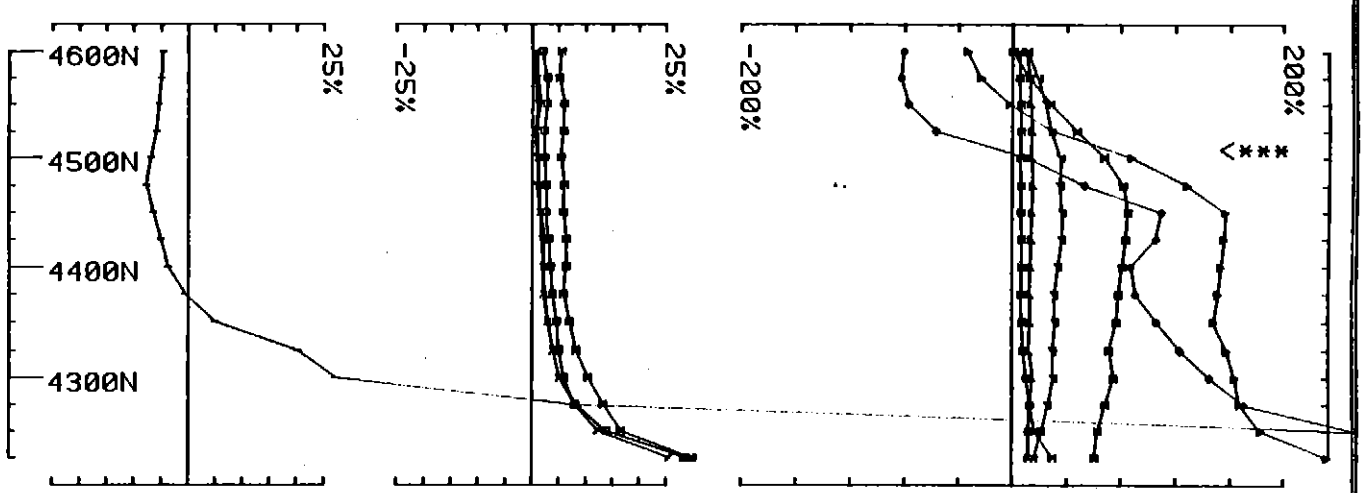


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
L2900E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

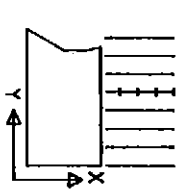


HATFIELD
LOOP 0034
LINE 2900E
Hz

156

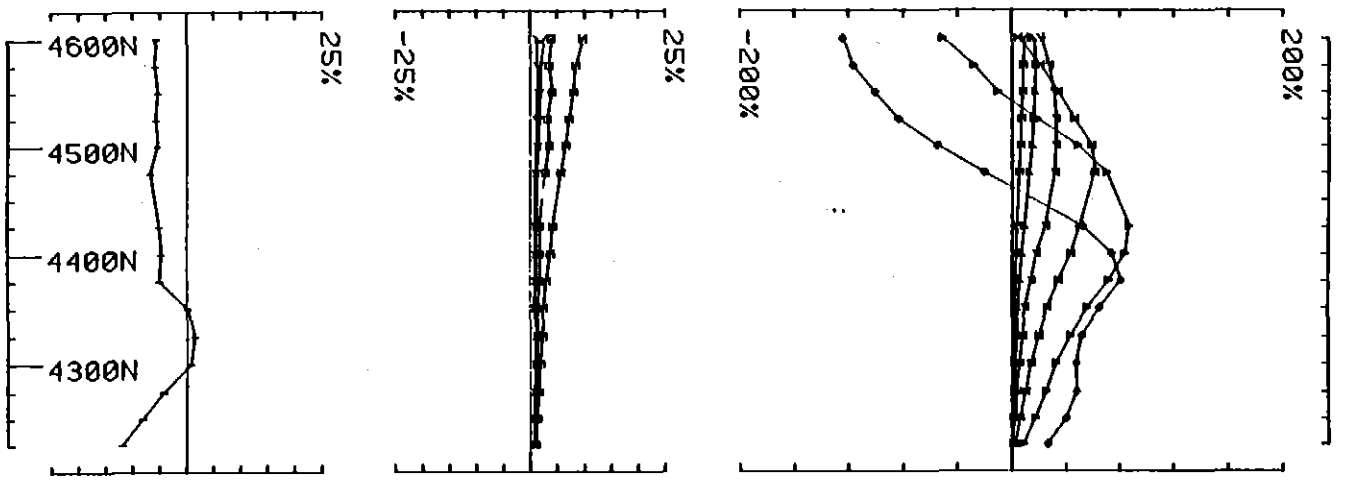


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 2900E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

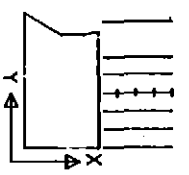


HATFIELD
LOOP 0034
LINE 2900
Hz

157

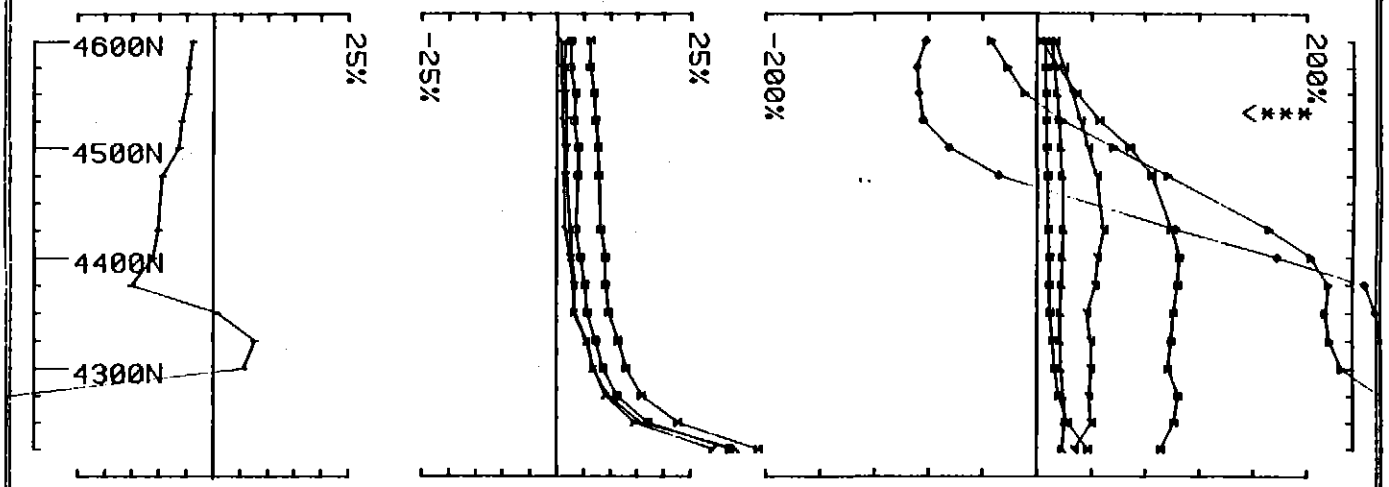


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
L 3000 E Hz component BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

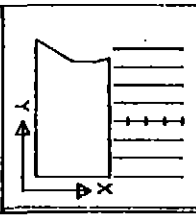


HATFIELD
LOOP 0034
LINE 3000
Hz

158

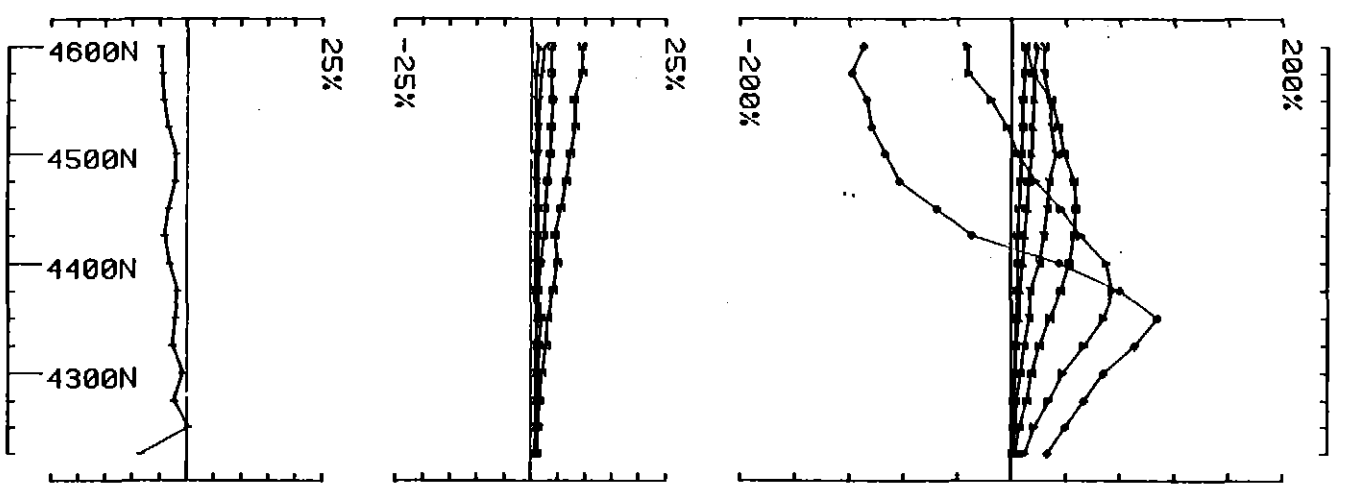


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3000E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

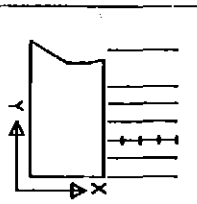


HATFIELD
LOOP 0034
LINE 3000
Hz

159

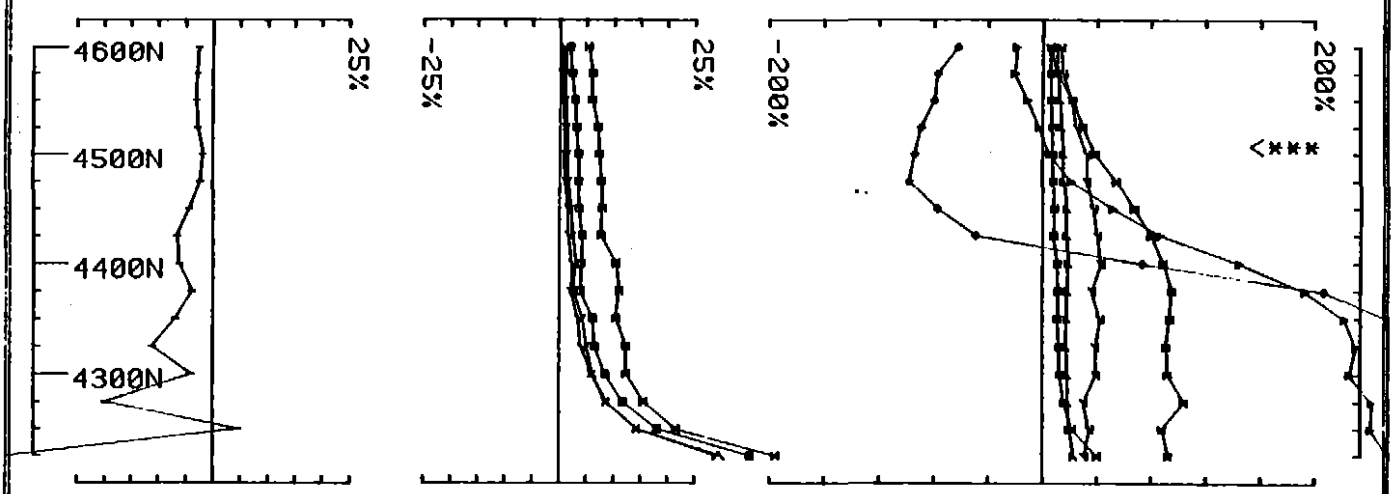


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3100E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

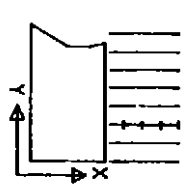


HATFIELD
LOOP 8034
LINE 3100
Hz.

160

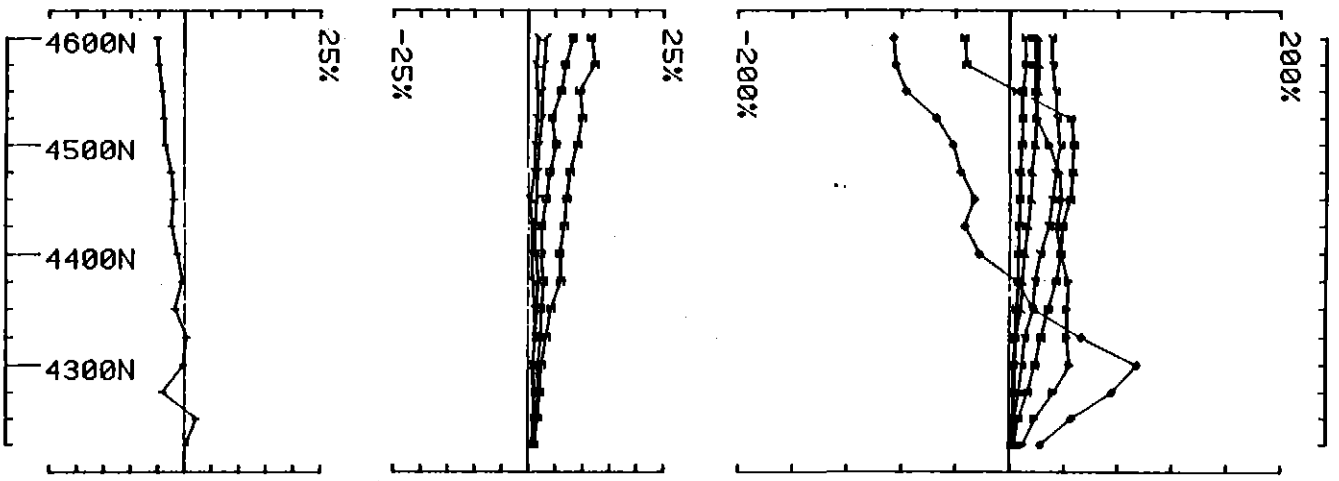


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3100E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

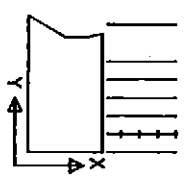


HATFIELD
LOOP 0034
LINE 3100
Hz

161

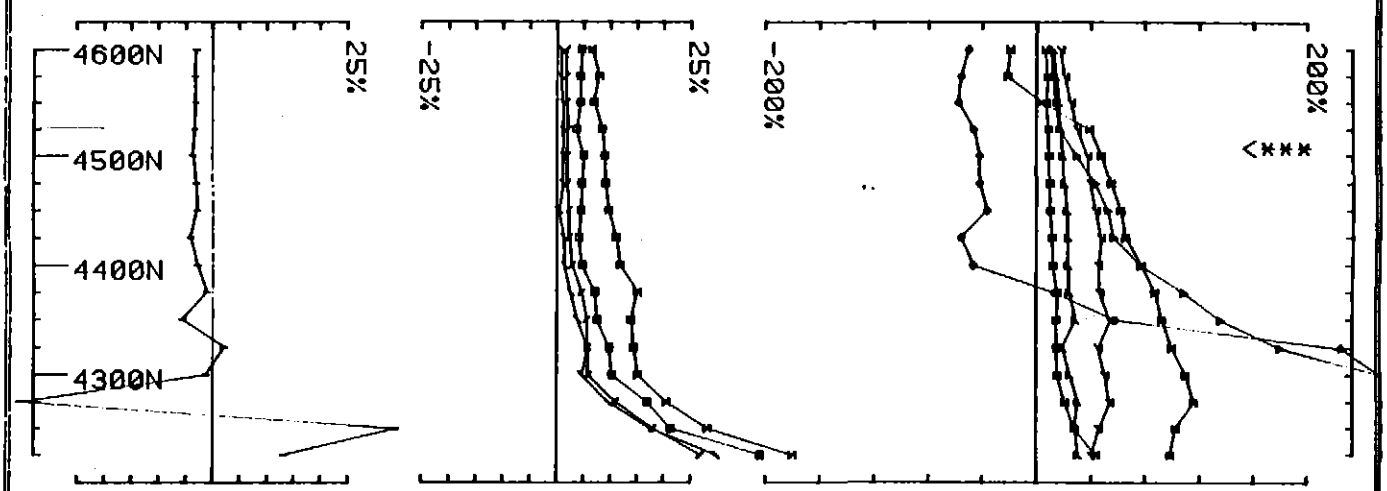


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3200E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION

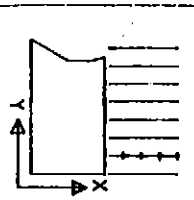


HATFIELD
LOOP 0034
LINE 3200
Hz

162

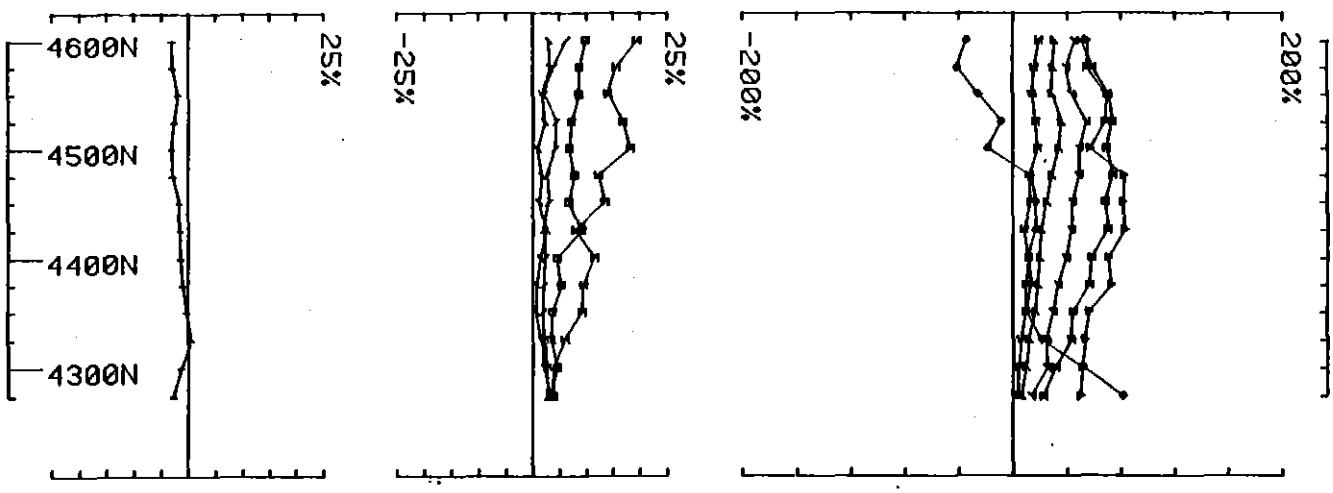


LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3200E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD POINT Ch 1 NORMALIZATION

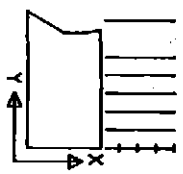


HATFIELD
LOOP 0034
LINE 3200
Hz

163



LAMONTAGNE GEOPHYSICS UTEM SURVEY JOB 8601
AREA :- HATFIELD
CLIENT :- ABERFOYLE CREW :- PMM DW
Line 3300E Hz COMPONENT BASE FREQ :- 26.230HERTZ
SECONDARY FIELD CONTINUOUS Ch 1 NORMALIZATION



HATFIELD
LOOP 8034
LINE 3300
Hz

164

599165

INTERPRETATION REPORT

UTEM SURVEY

SOUTH HATFIELD GRID

HATFIELD EL 15/73

Prepared By:

J. Silic

Issued By:

J. Silic

Distribution

Hawthorn (1)

Burnie (1)

LIST OF CONTENTS

INTRODUCTION

SURVEY SPECIFICATIONS

DISCUSSION OF RESULTS

CONCLUSION

REFERENCES

PLATE

UTEM and EM-37 COVERAGE - MAC 113C

APPENDIX 1

UTEM DATA SECTIONS

INTRODUCTION

Electromagnetic techniques have played important roles in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery Aberfoyle Resources has further refined the use of these techniques in the search for Hellyer and Que River type targets (Silic, 1989).

The purpose of this report is to discuss the results of a UTEM (West et al, 1984) survey over the South Hatfield grid on the Hatfield licence. (Plate 1)

SURVEY SPECIFICATIONS

A five loop, UTEM survey covering lines 2800N to 3800N from 2200E to 4000E, lines 1800N to 2800N from 2400E to 5000E and lines 1200N to 1600N from 3500E to 4800E was conducted over the South Hatfield grid.

Vertical component (H_z) data was collected at 25-50 metre station spacing.

DISCUSSION OF THE RESULTS

The major problem in this survey has been the power line noise. However, careful stacking of the data has resulted in the data being good enough for the Que River and Hellyer type responses to be recognised in the data. No such responses were detected.

CONCLUSION

No targets worthy of follow-up have been detected by the UTEM survey.

REFERENCES

Eadie, E. T., Silic J. and Jack, D. J. (1985), 'The application of geophysics to the discovery of the Hellyer ore deposit, Tasmania', Explor. Geophys. 16, 207-209.

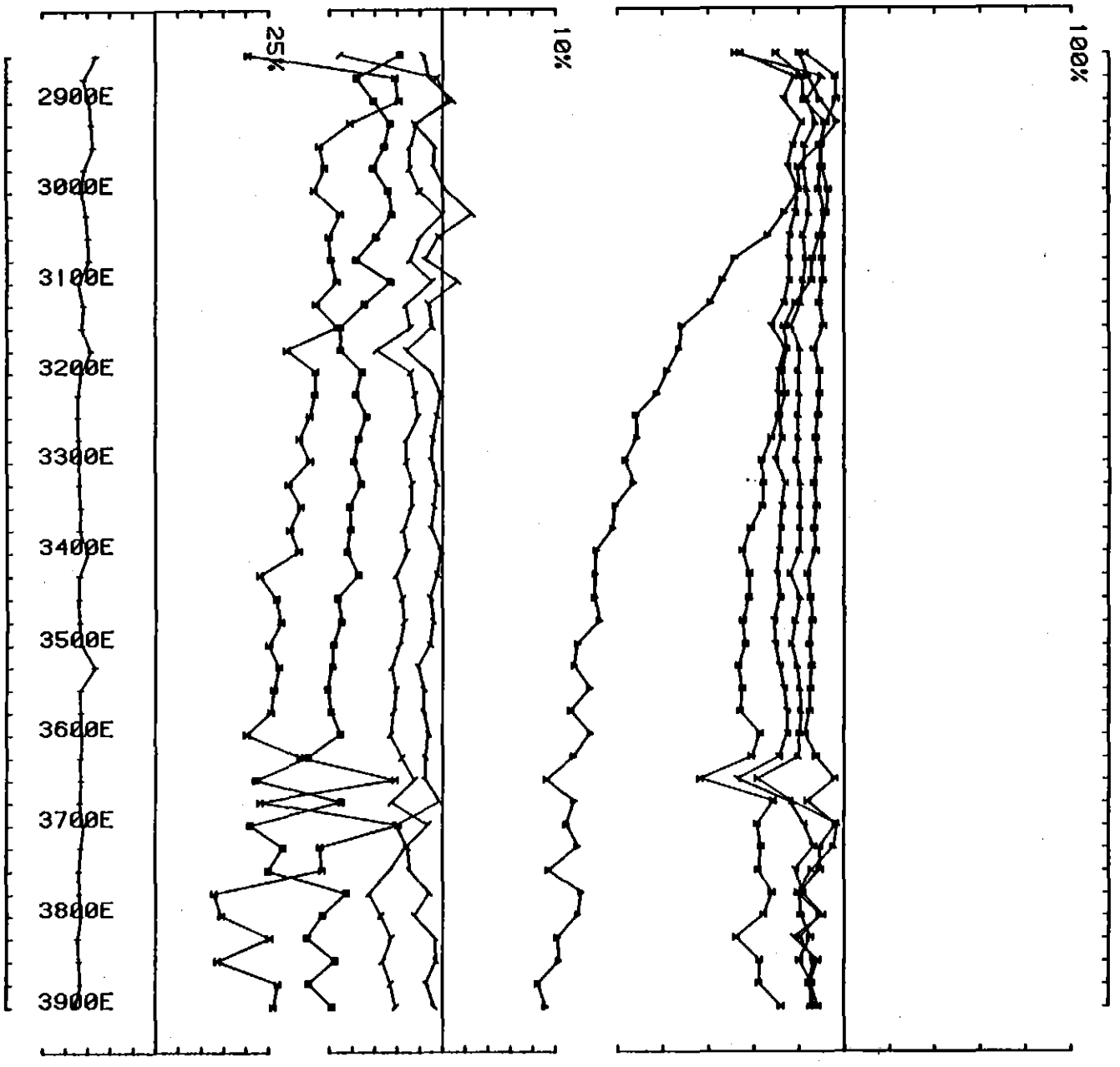
Silic J. (1989), 'Interpretation of TDEM data using spatial derivatives and decay analysis', Explor. Geophys. 20

Silic J., Eadie, E. T., and Jack, D. J. (1985), 'Application of time domain electromagnetic methods in the discovery of the Hellyer ore deposit, Tasmania, Australia', in volume of Extended Abstracts of the 55th SEG meeting, Washington, DC.

Webster, S. S. and Skey, E. H. (1979), 'Geophysical and geochemical case history of the Que River deposit, Tasmania', in Geophysics and Geochemistry in the Search for Metallic Ores; Peter J. Hood, editor, Geological Survey of Canada, Economic Geology Report 31, 697-720.

West, G. F., MacNae J. C. and Lamontagne Y. (1984), 'A time domain EM system measuring the step response of the ground', Geophys., 49, 1010-1026.

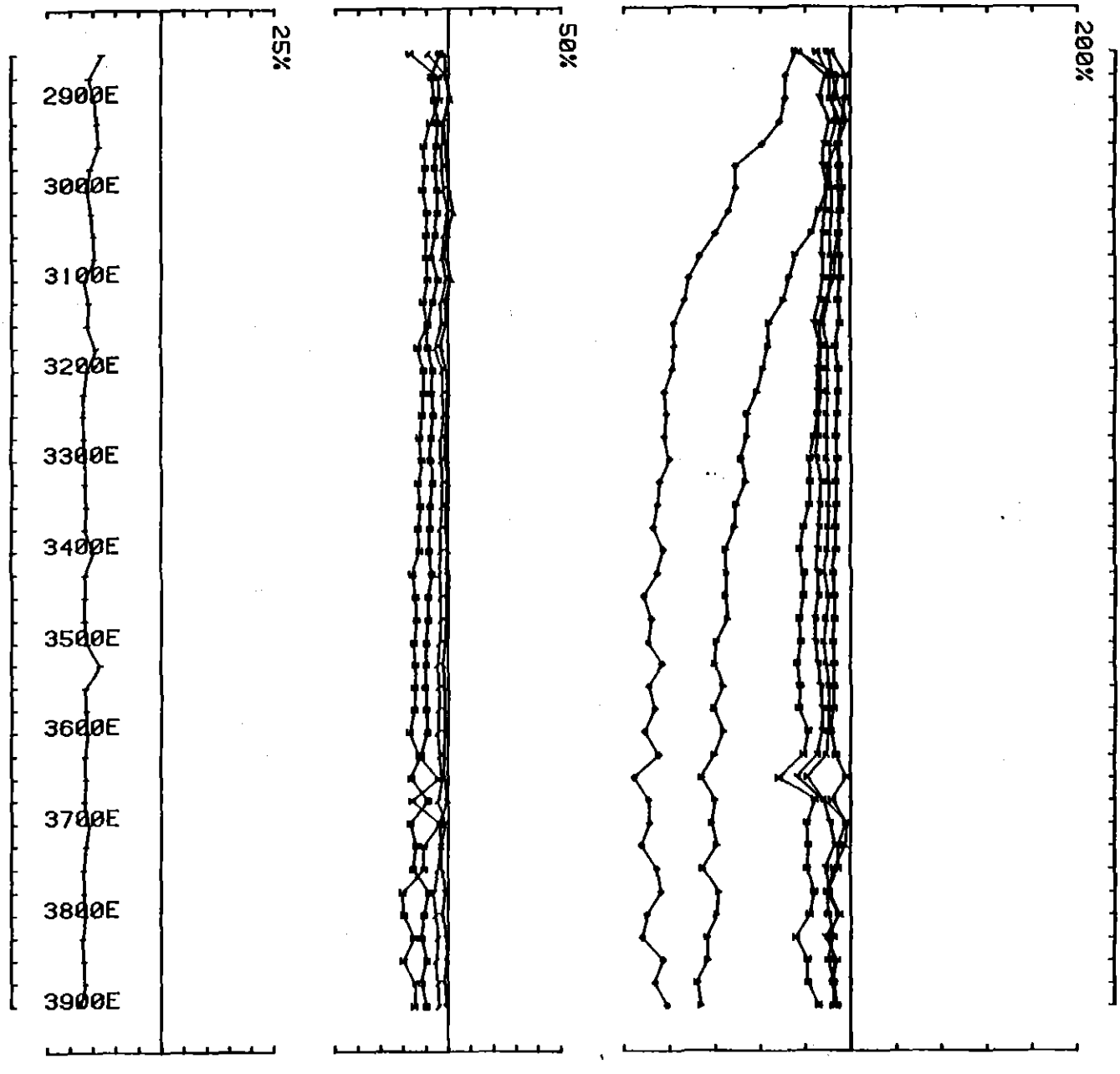
APPENDIX 1



UTEM SURVEY at MOUNT CHARTER for ABERFOYLE P/L

conducted by PAO PMM Job 8721 base freq (hz) 26.230 22/8/87

Loop 0001 line 2800N component Hz secondary field Ch 1 contin. norm. .

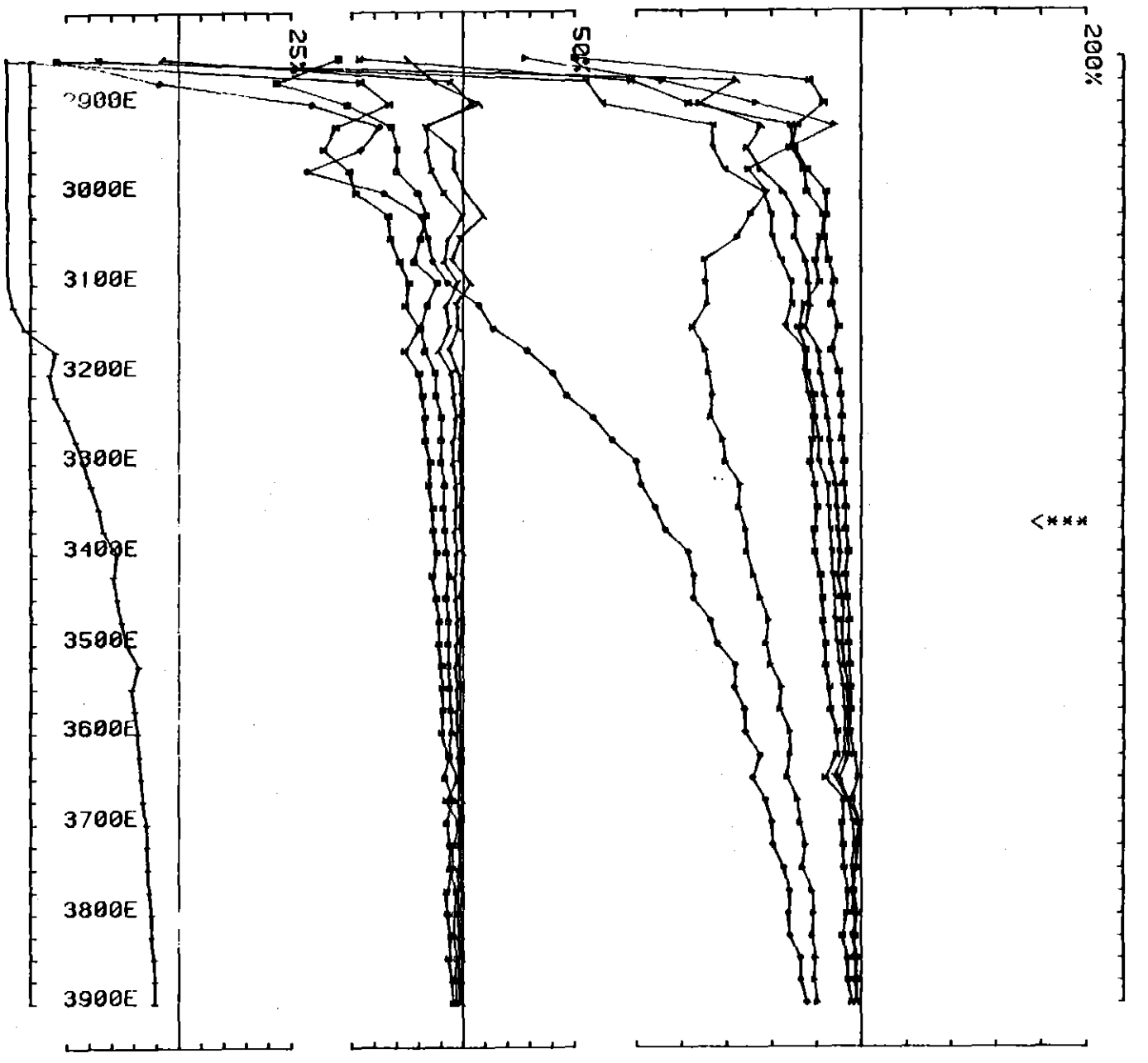


UTEM SURVEY at MOUNT CHARTER for ABERFOYLE P/L

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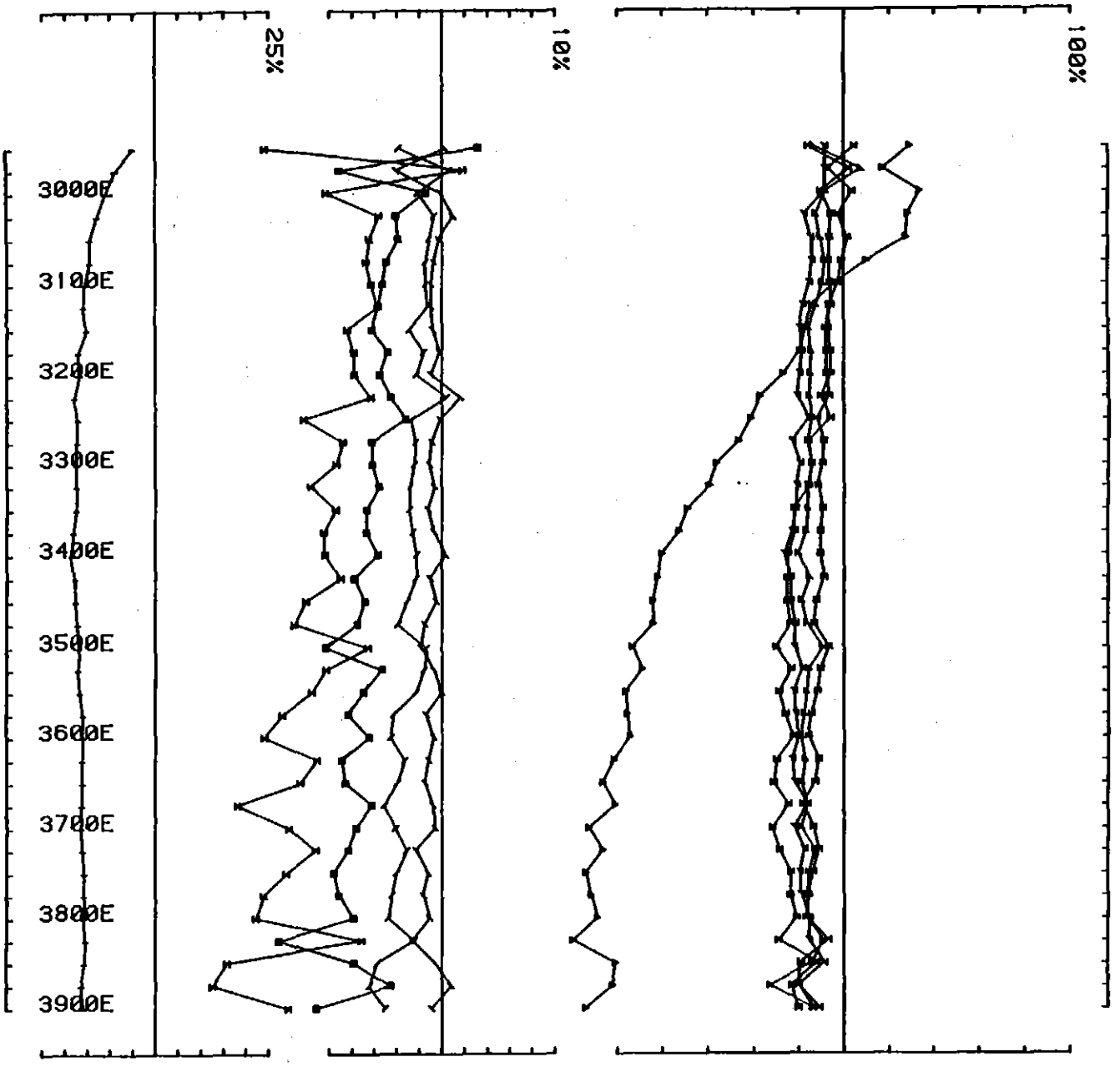
599172



UTEM SURVEY at MT. CHARTER for ABERFOYLE RESOURCES

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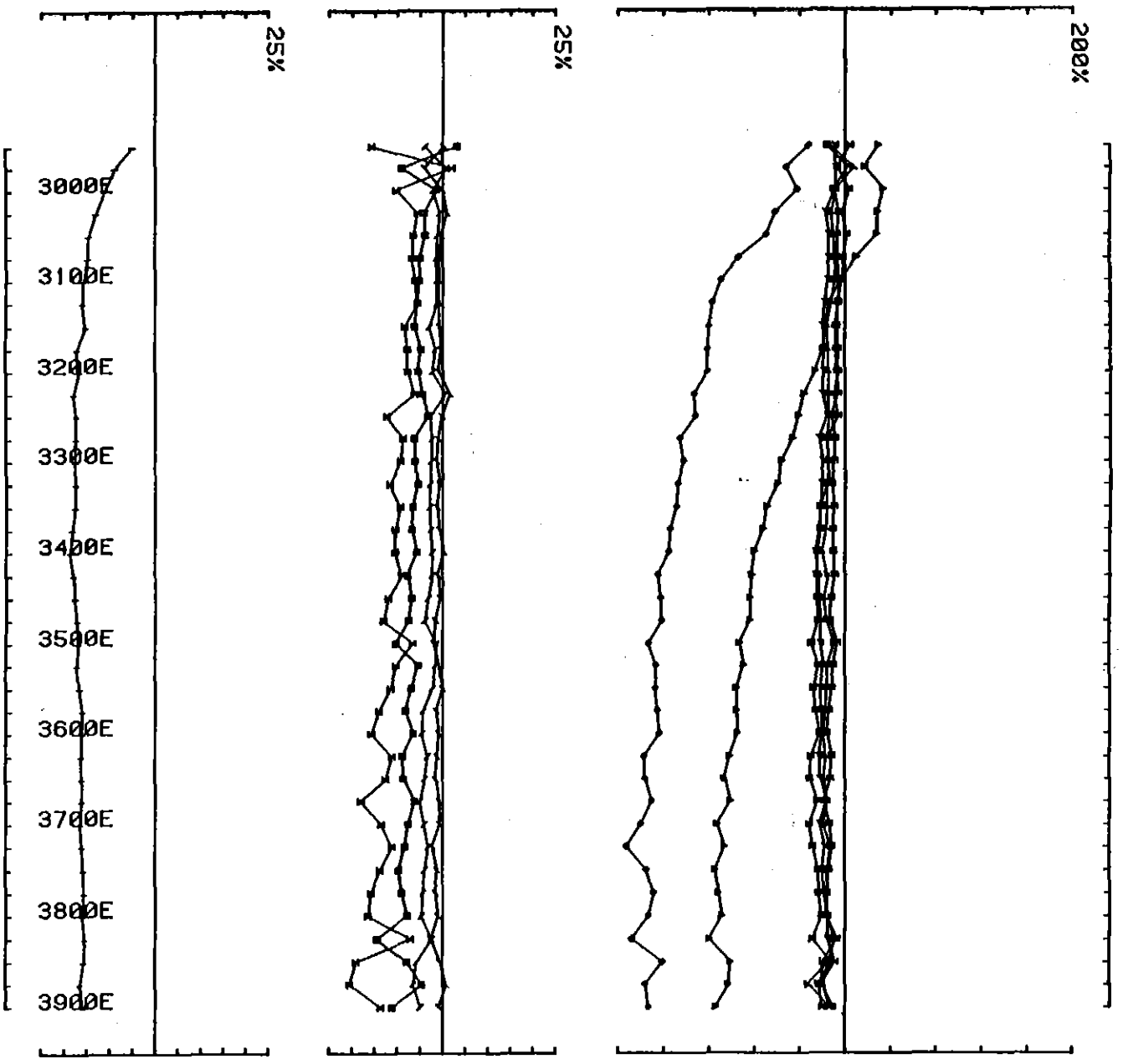
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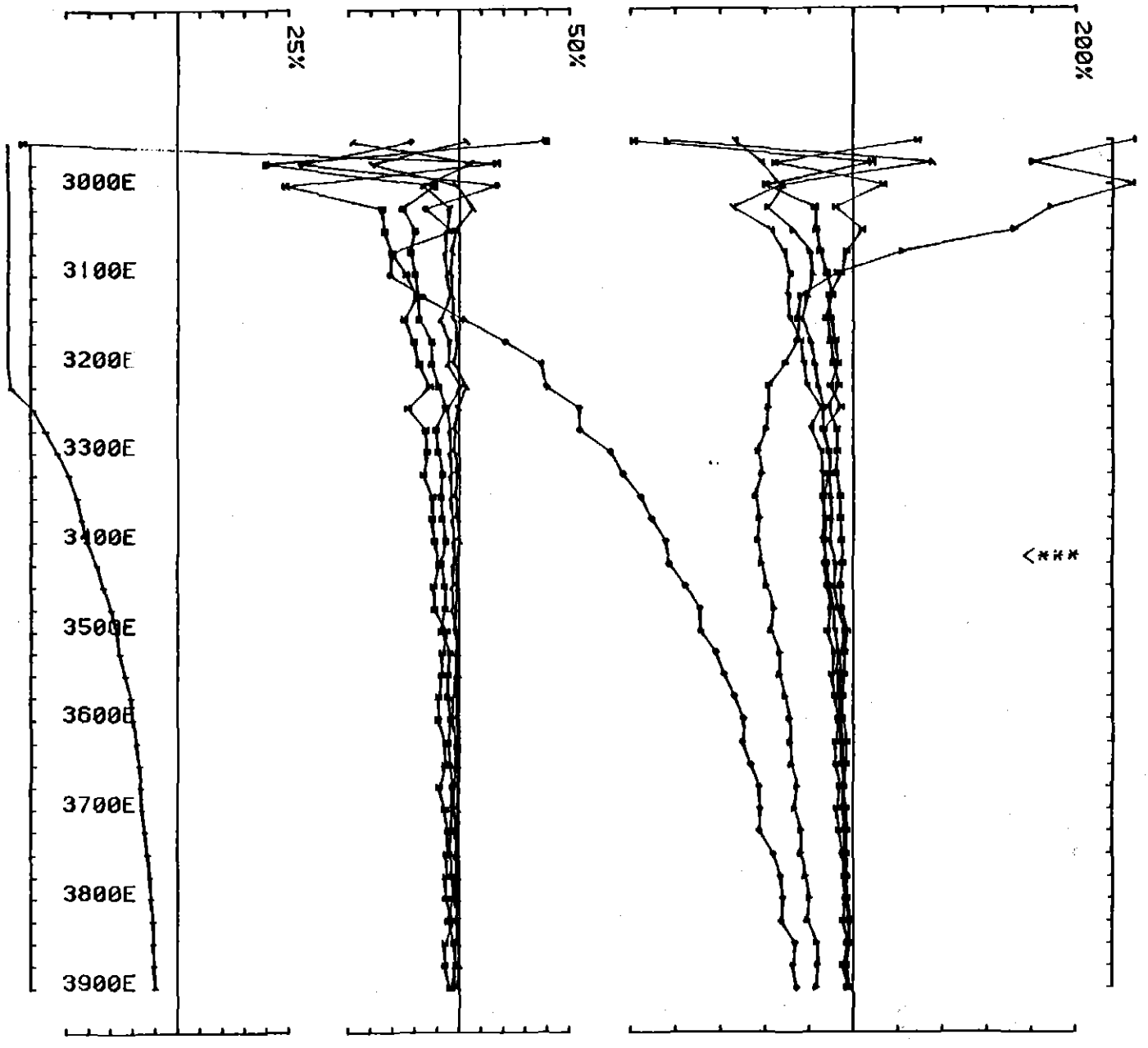
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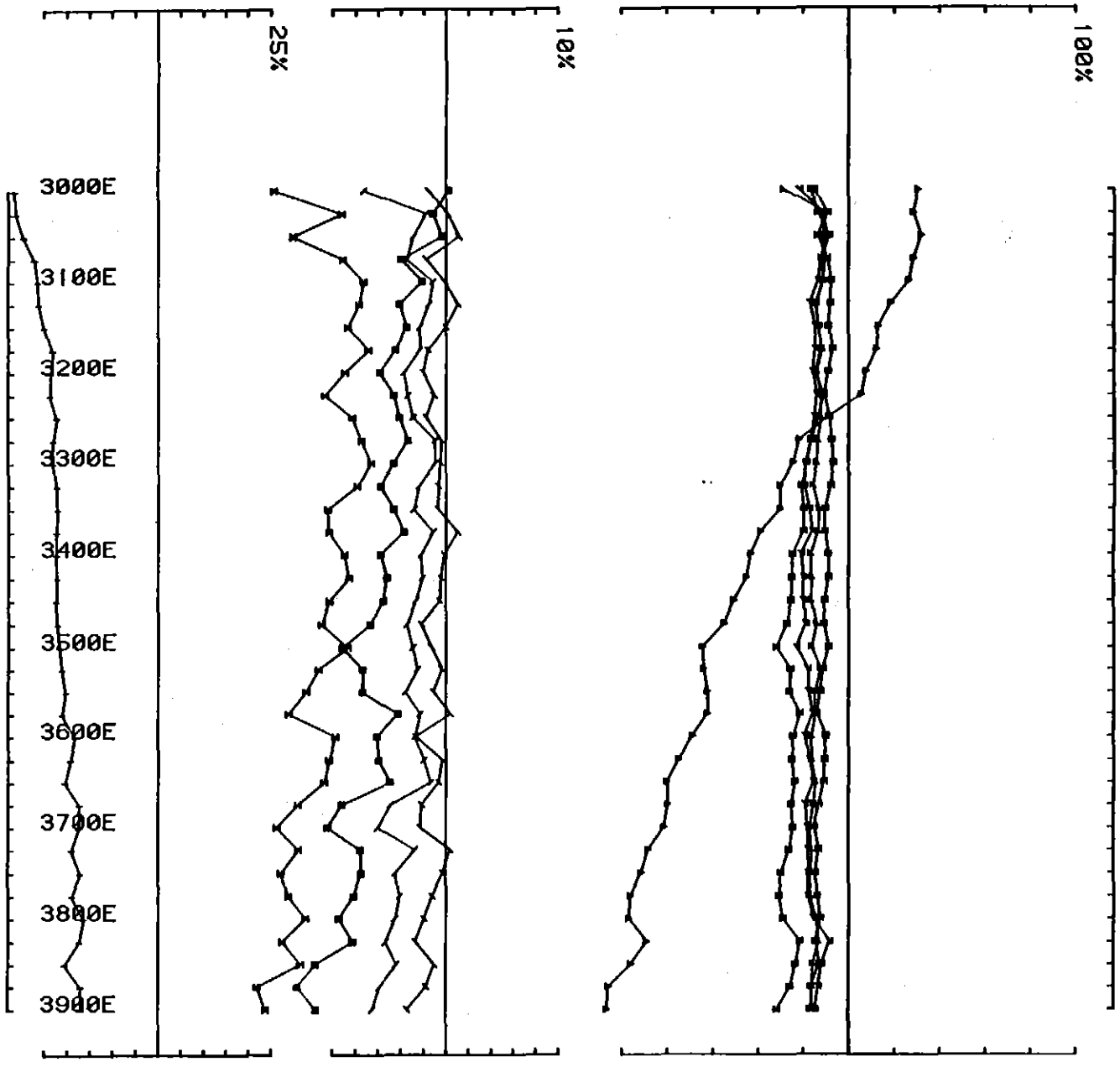
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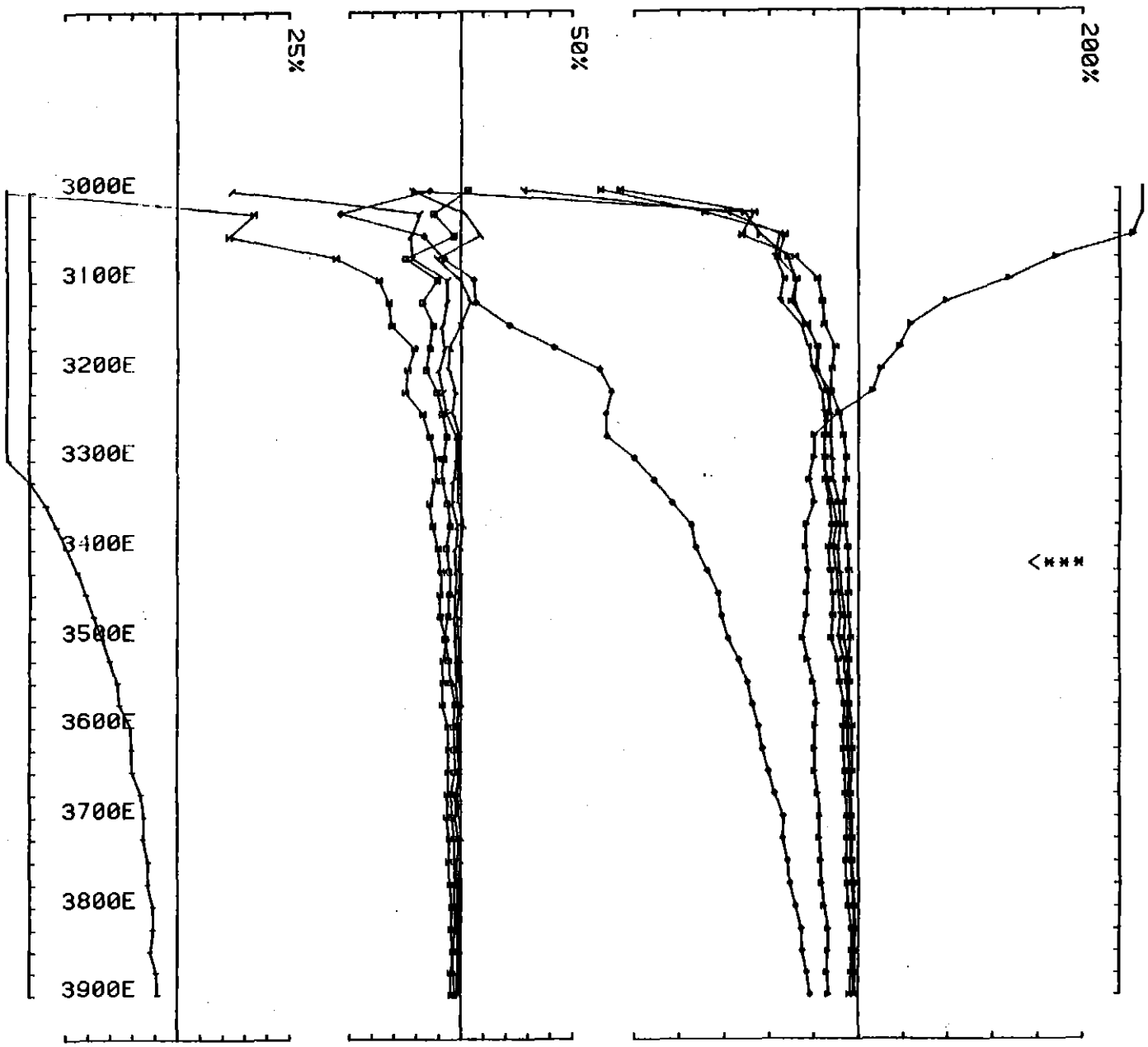
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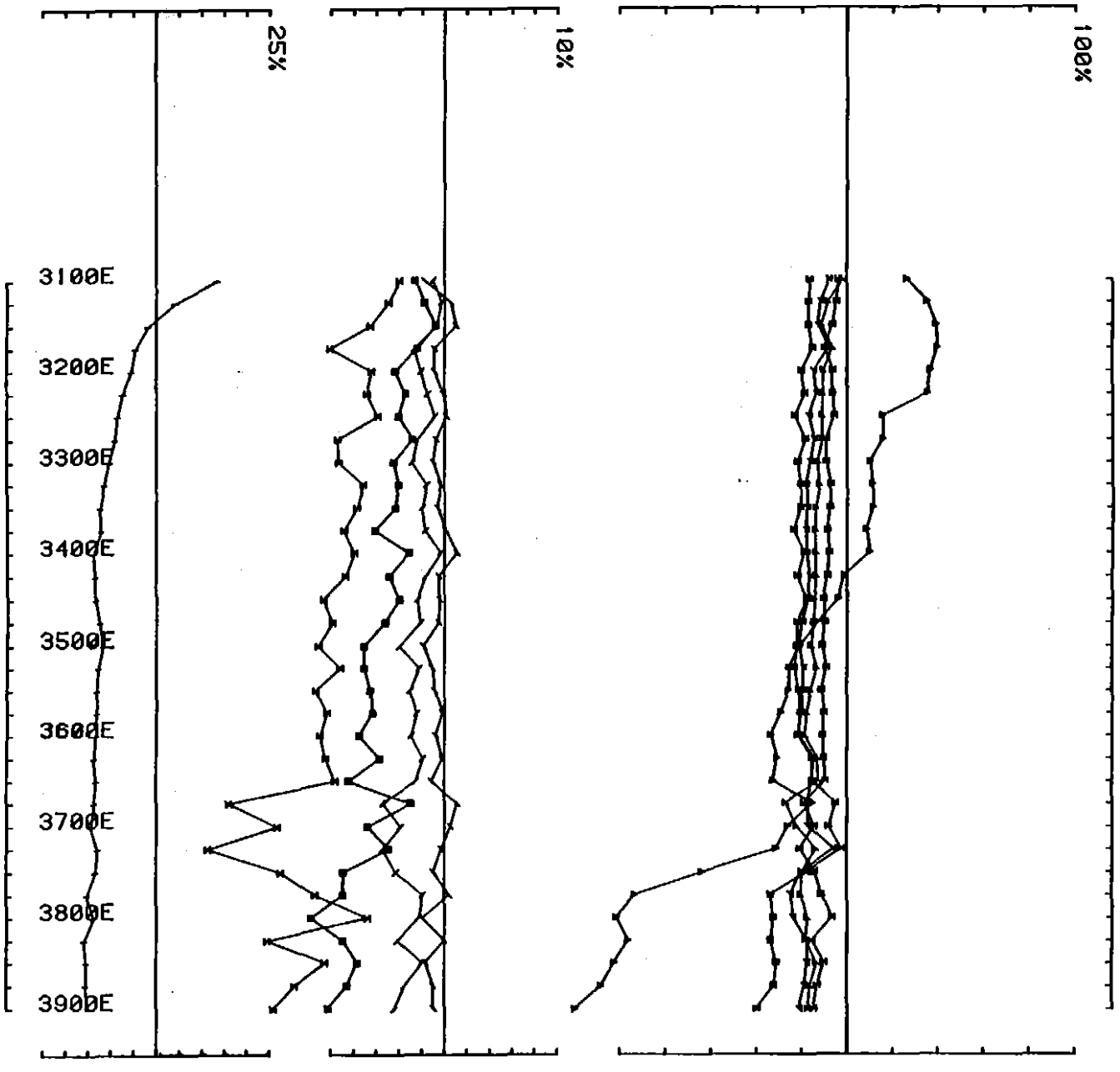
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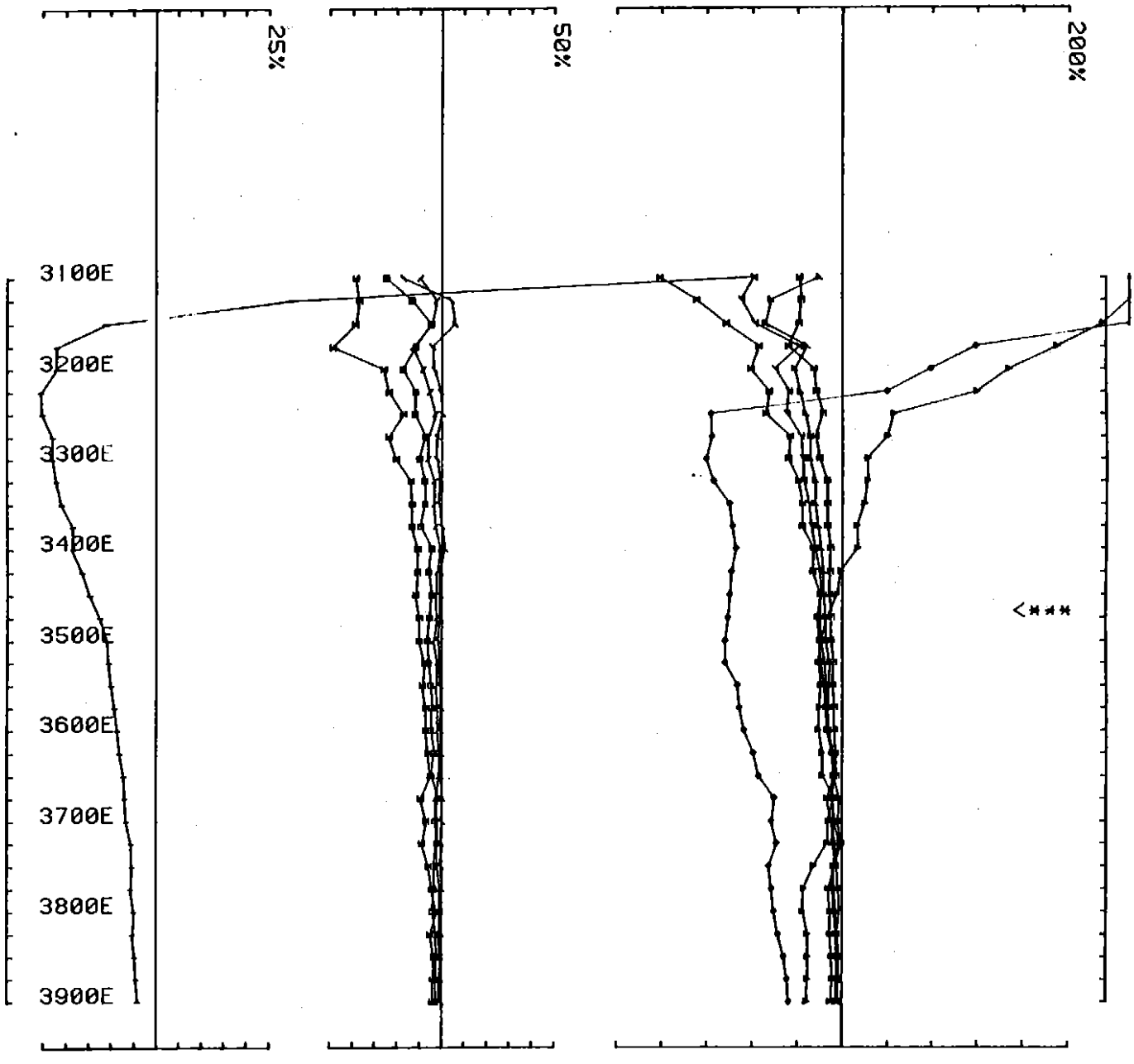


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Loop 0001 line 3400N component Hz secondary field Ch 1 contin. norm.

599179



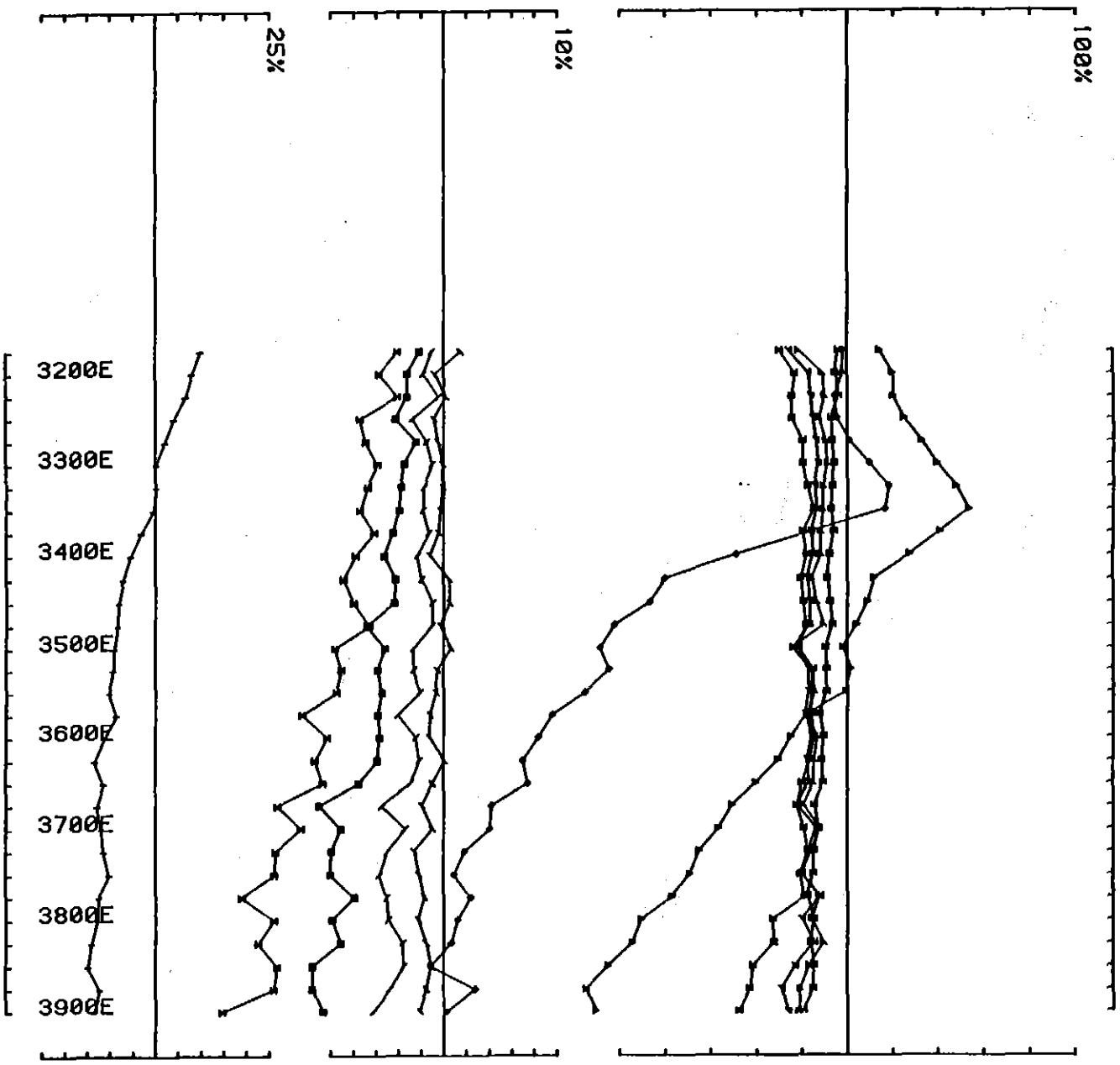
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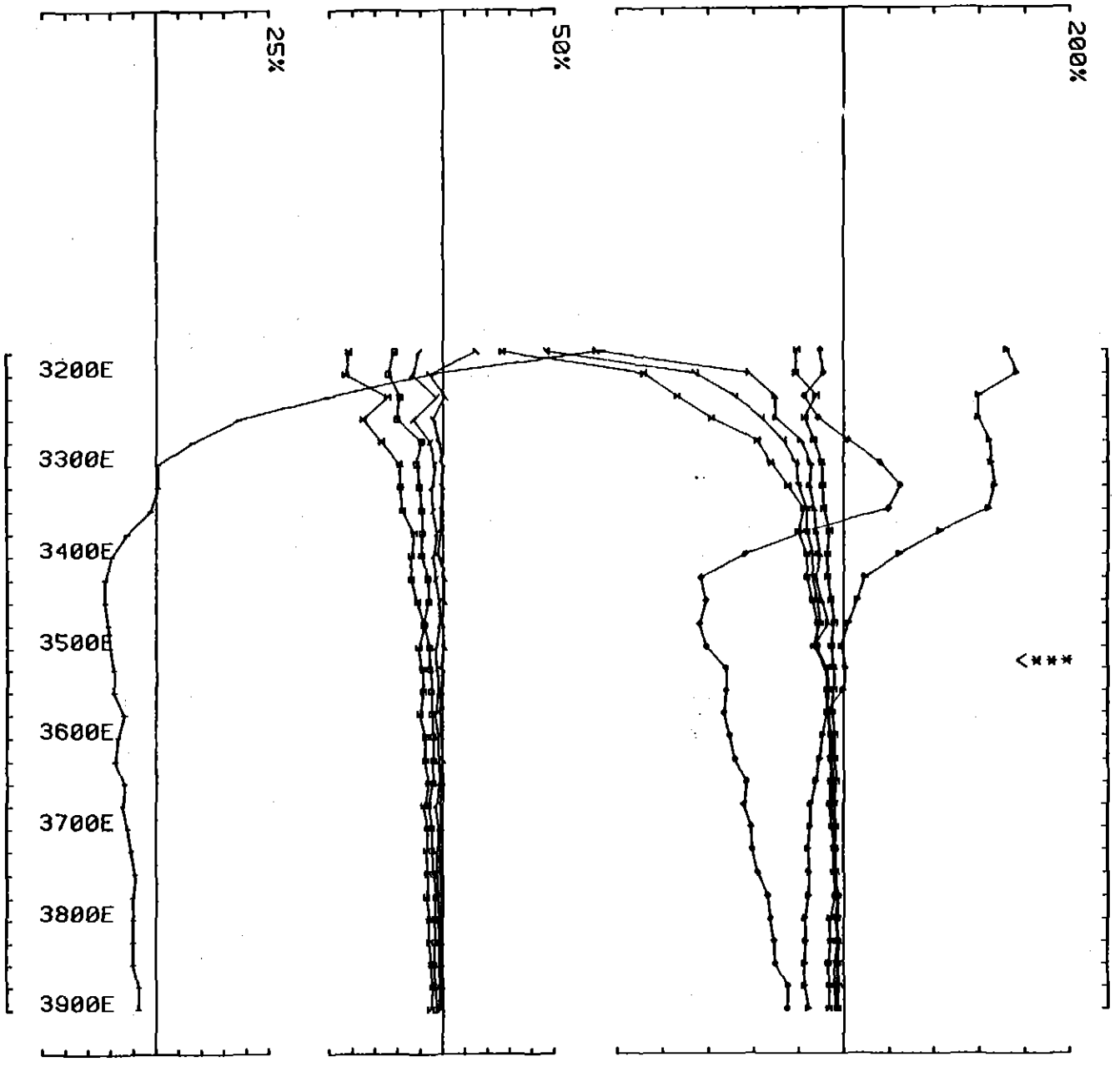
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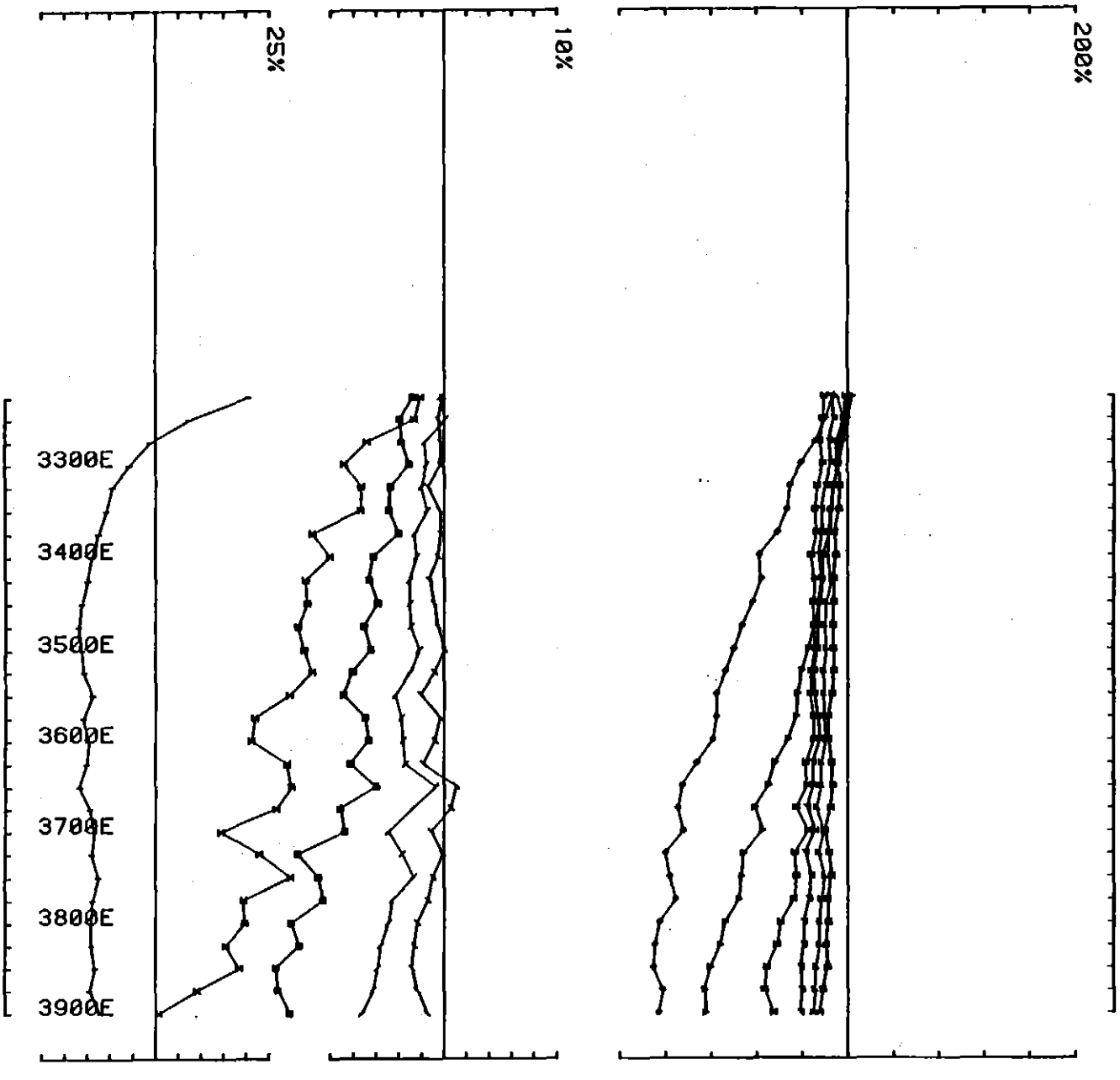
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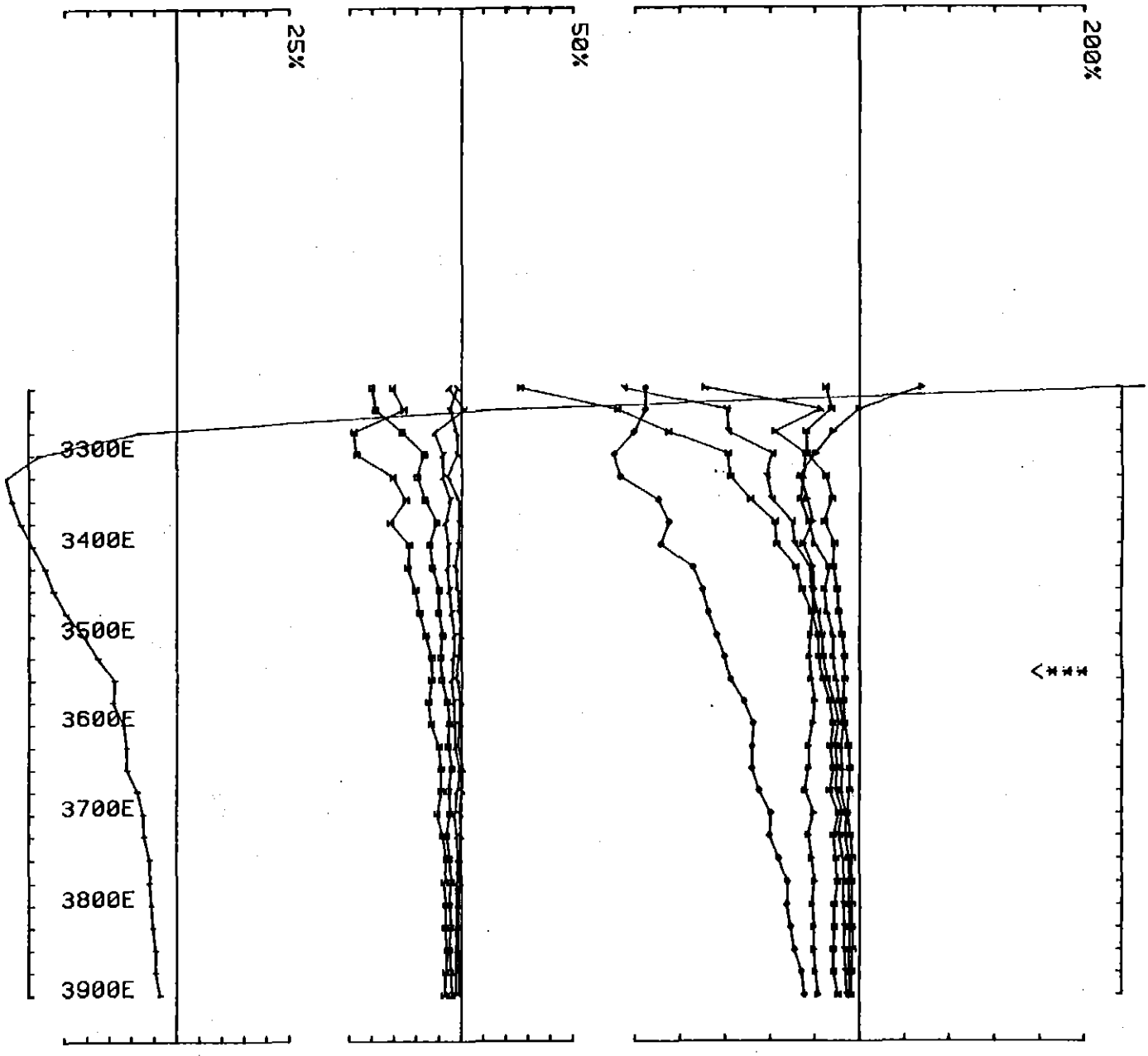


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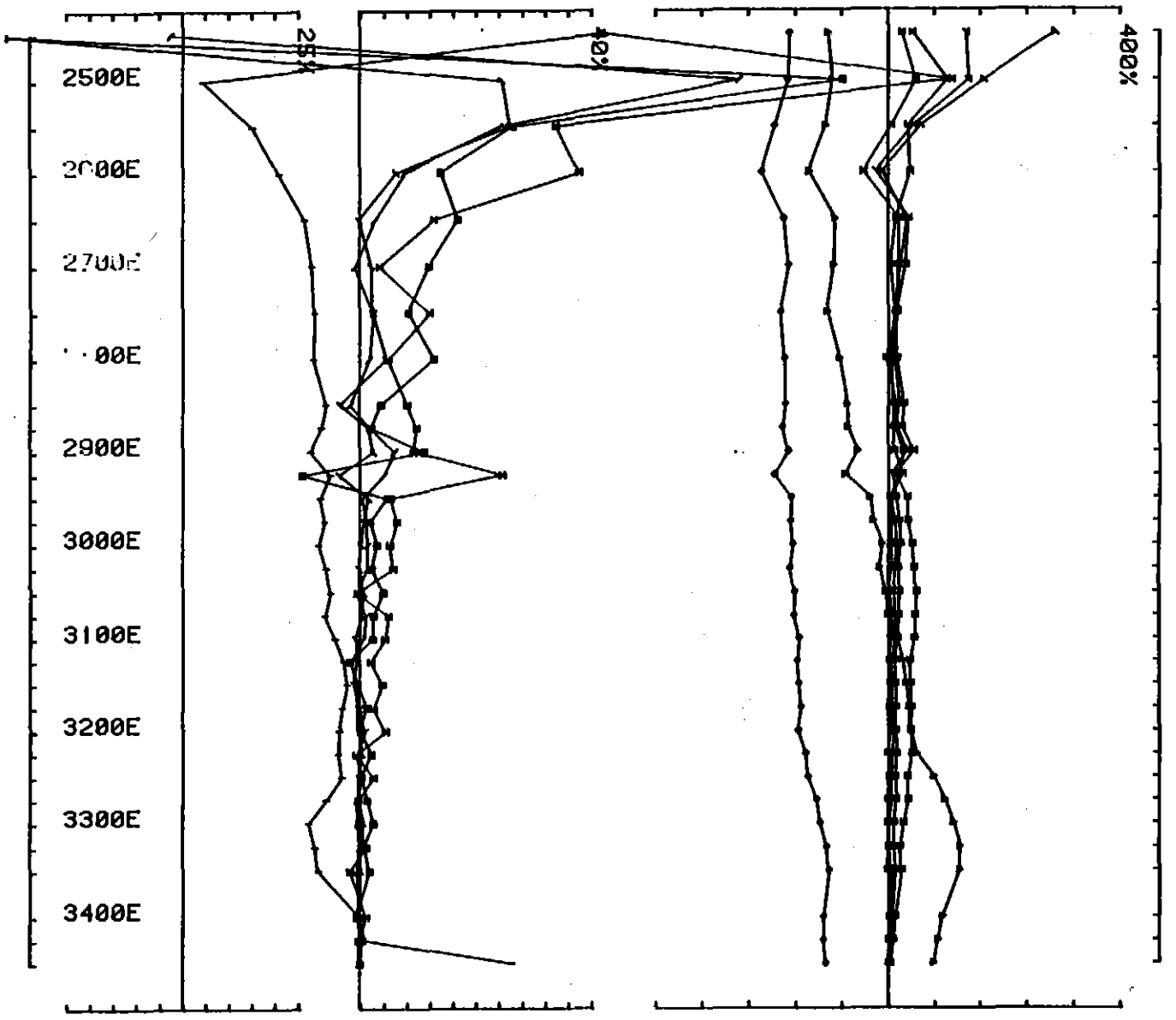
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183

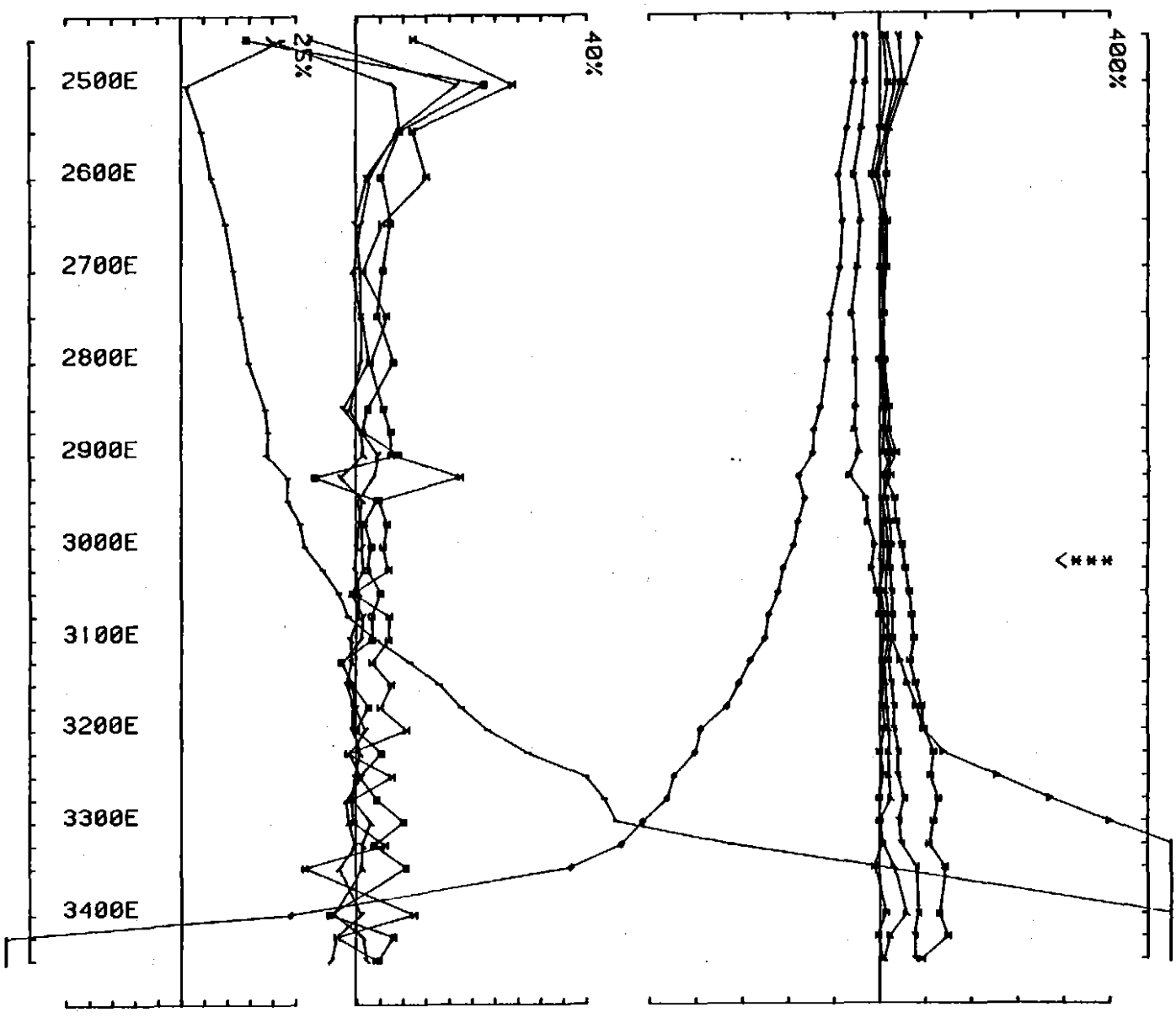
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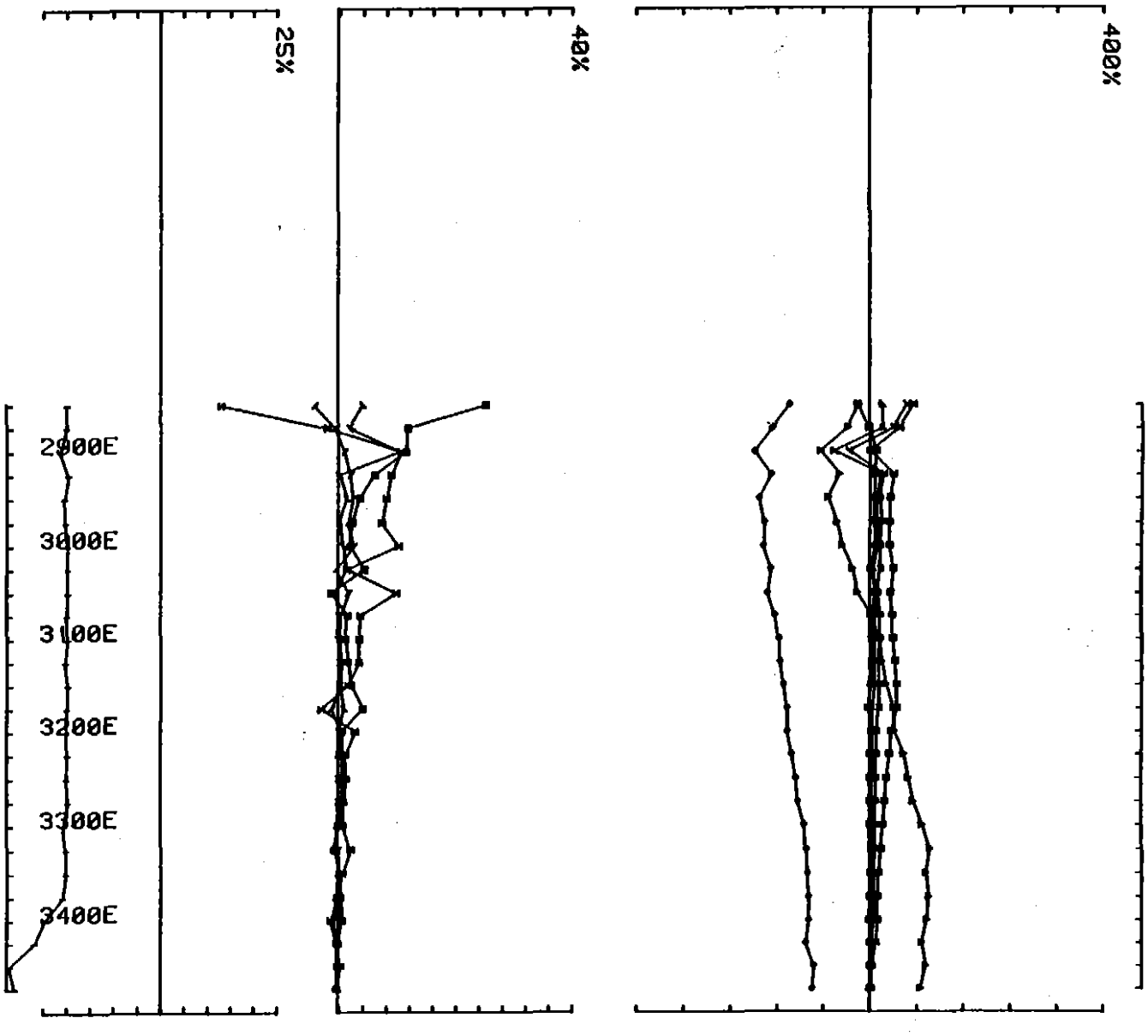
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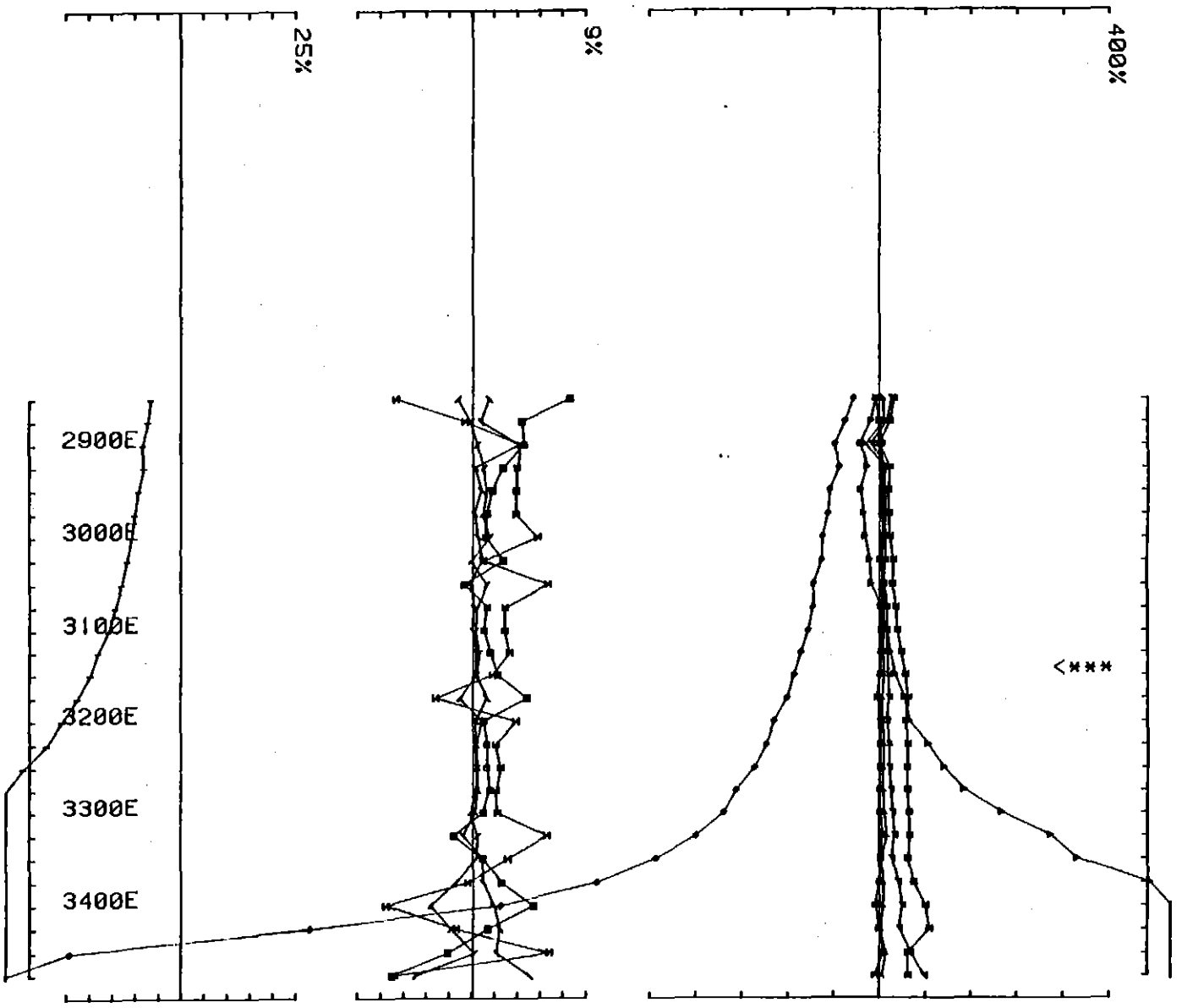
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Loop 0002 line 2000N component Hz secondary field Ch 1 contin. norm.

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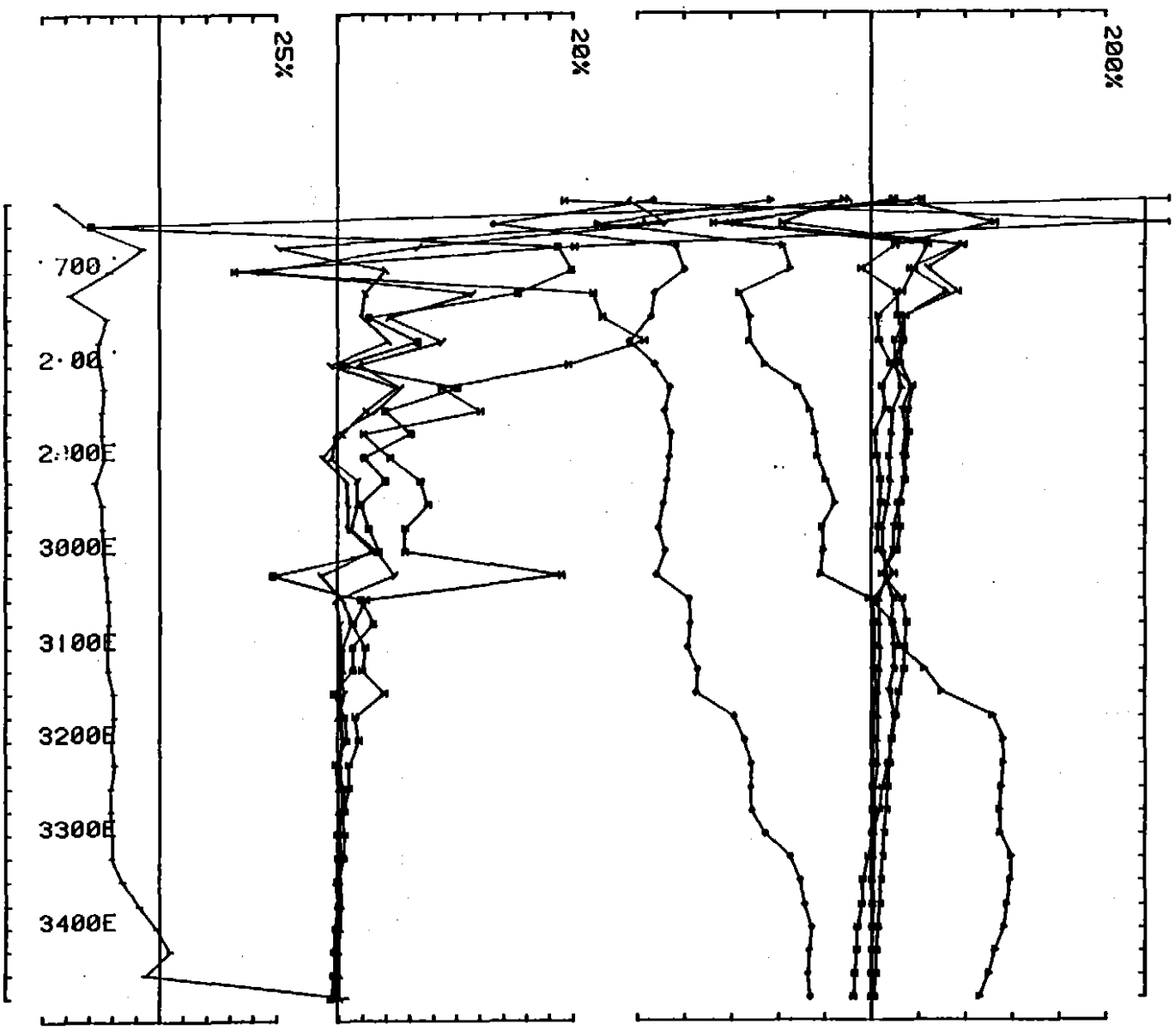
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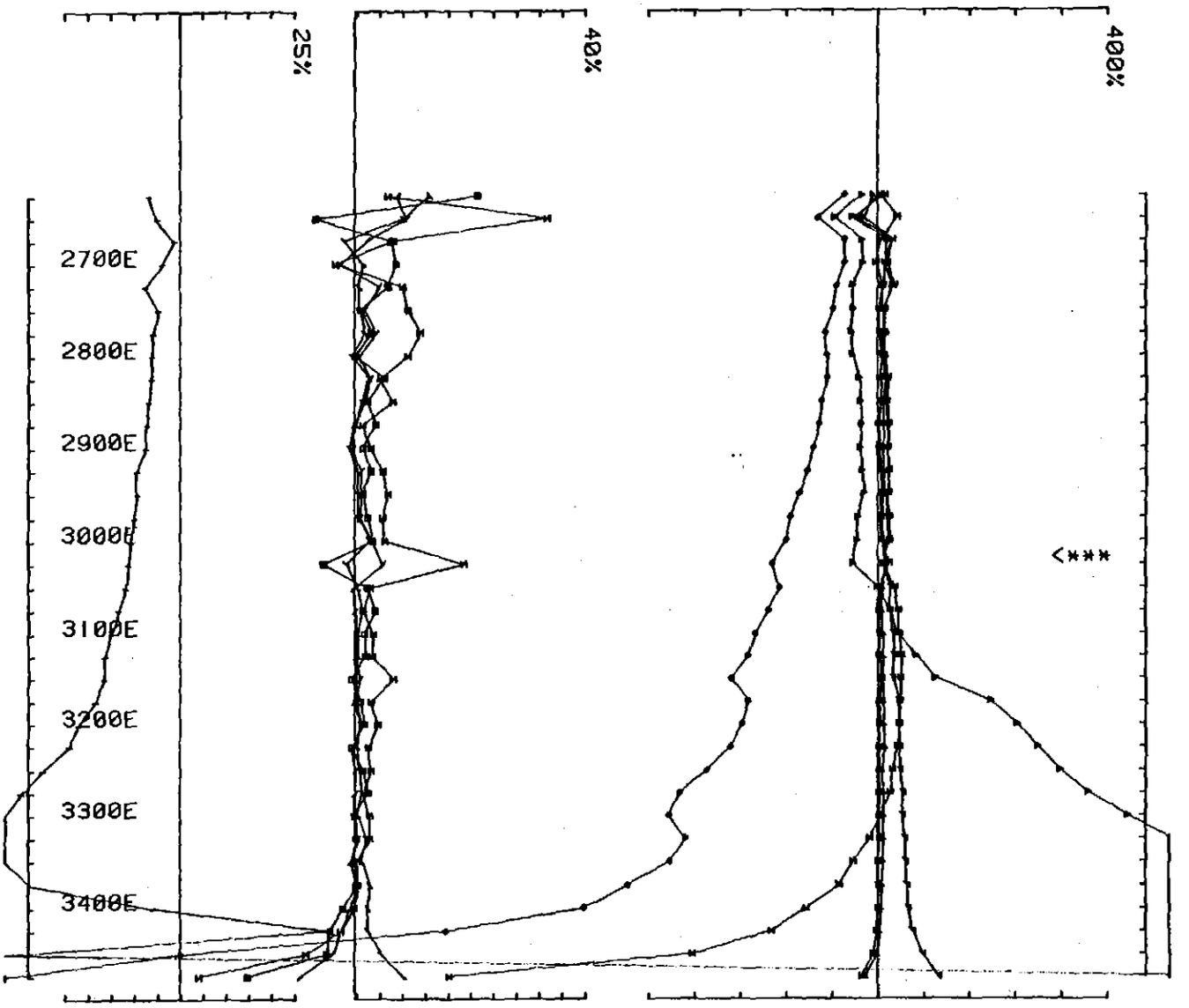
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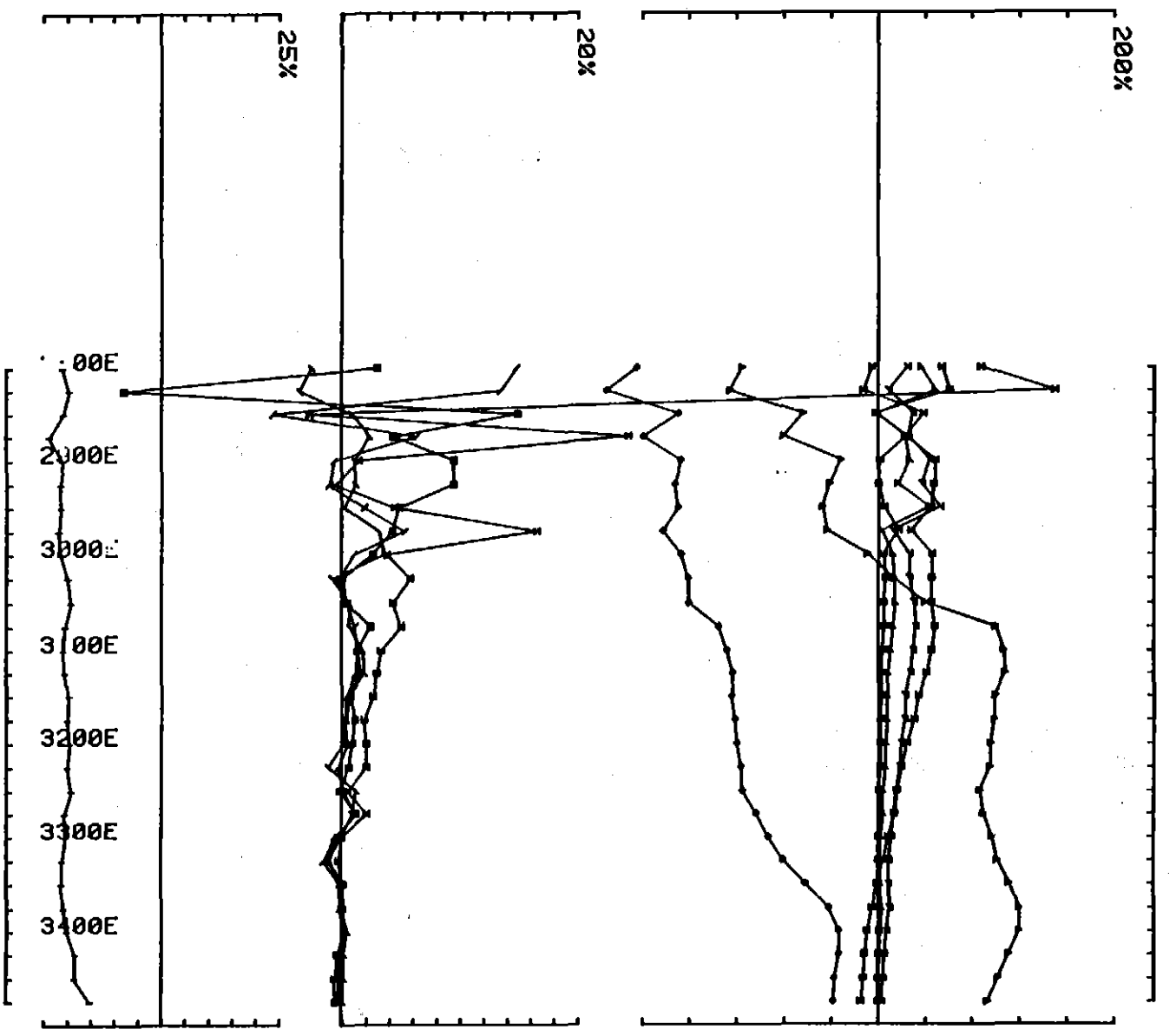
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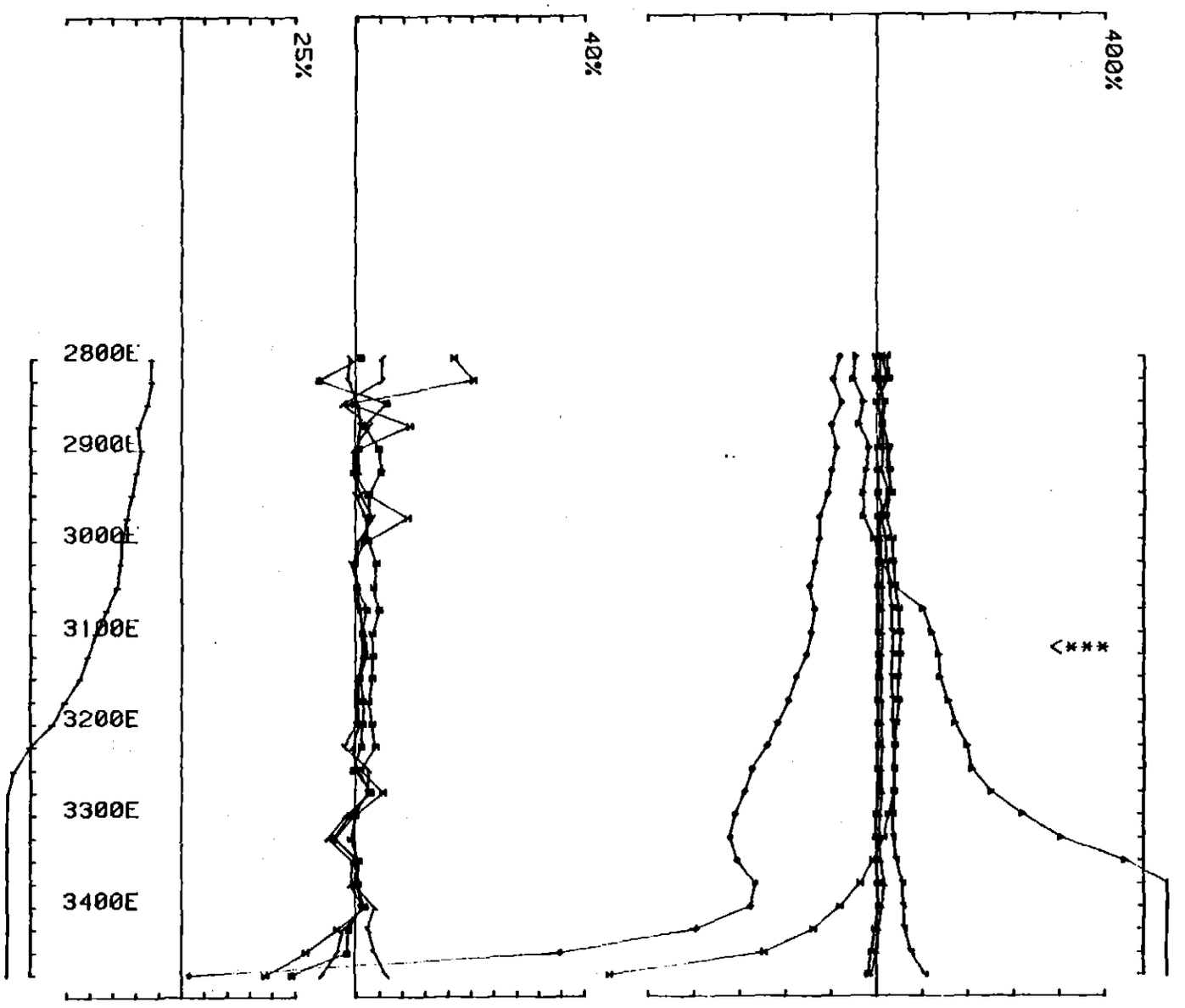
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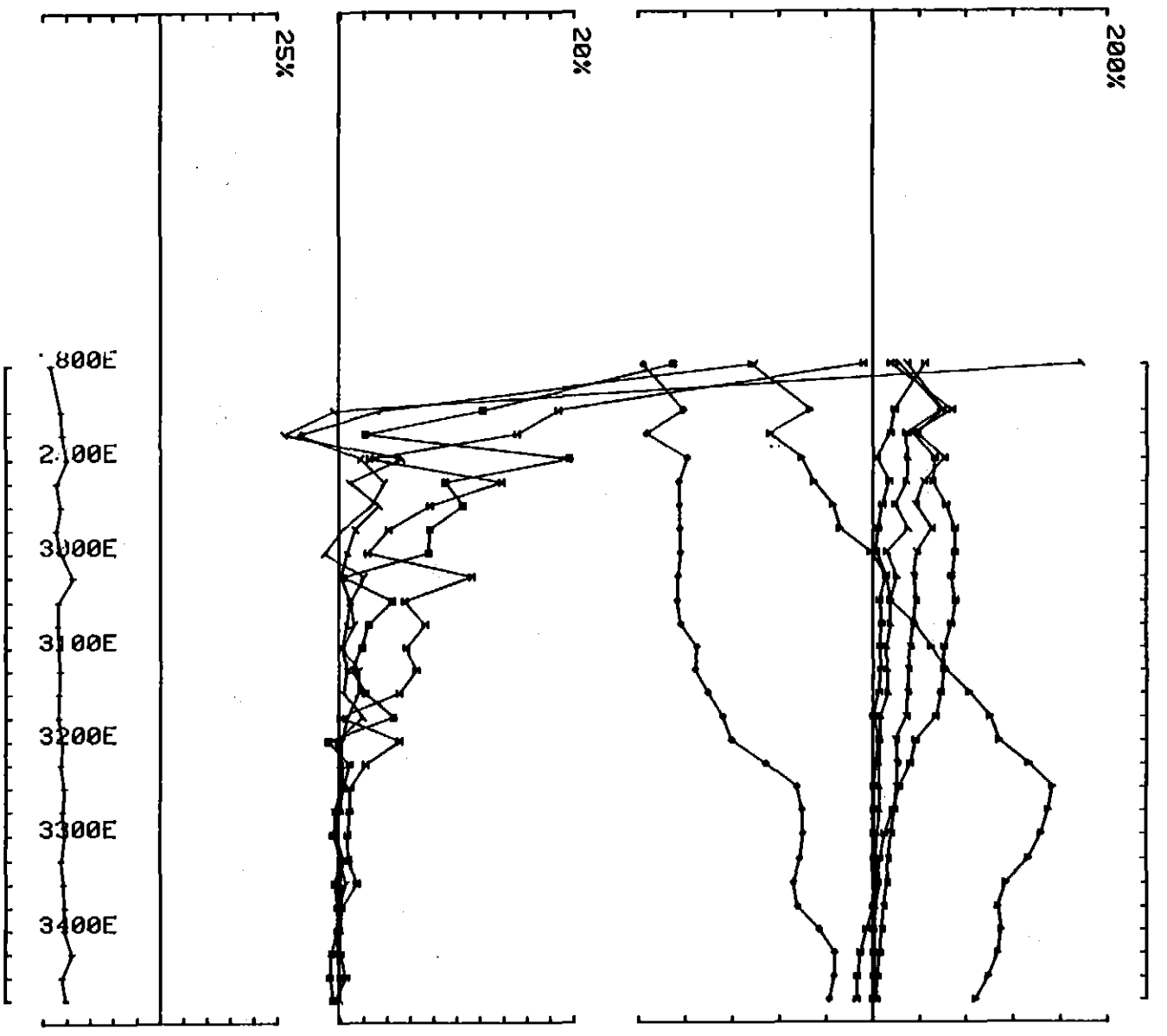
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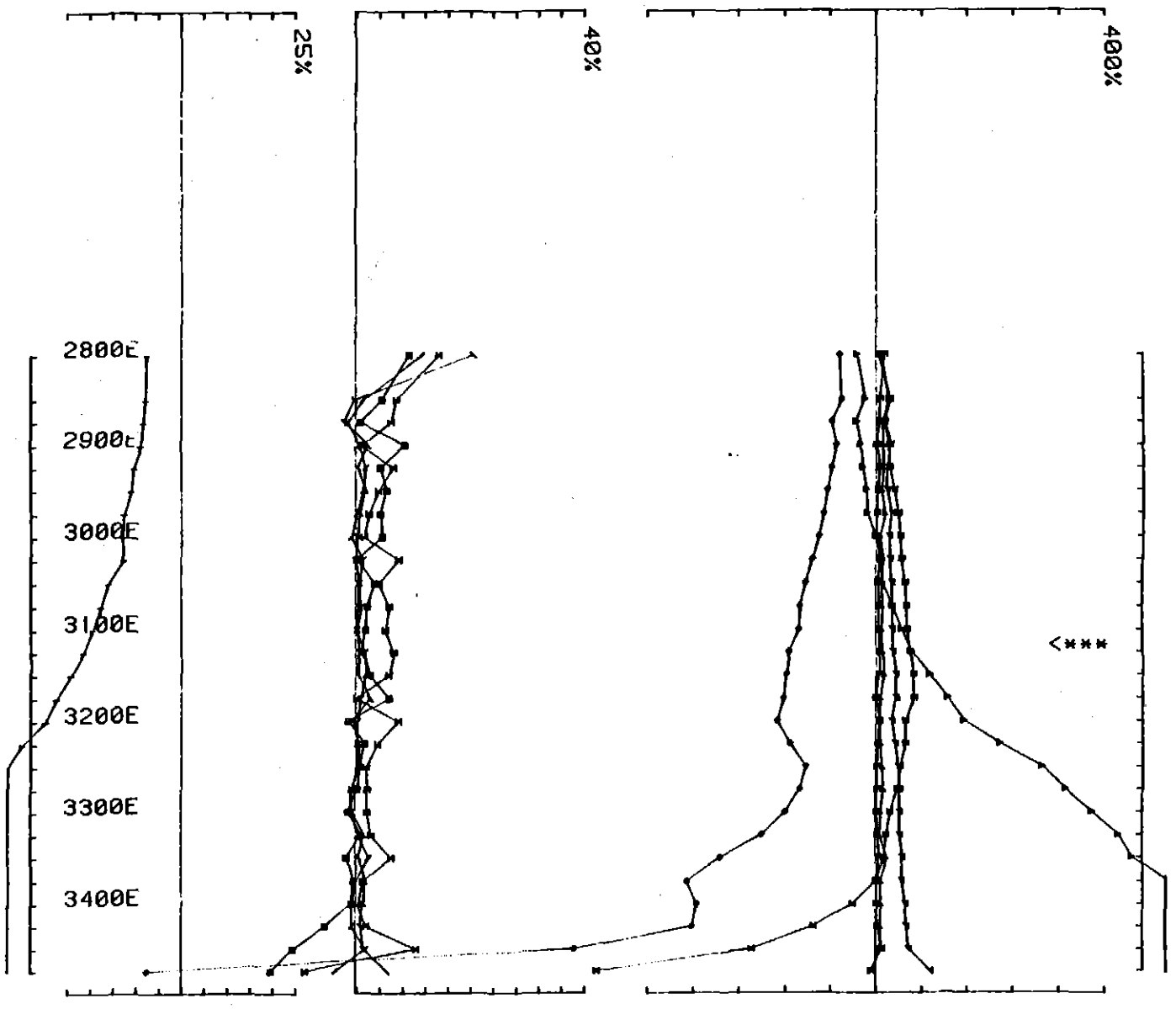
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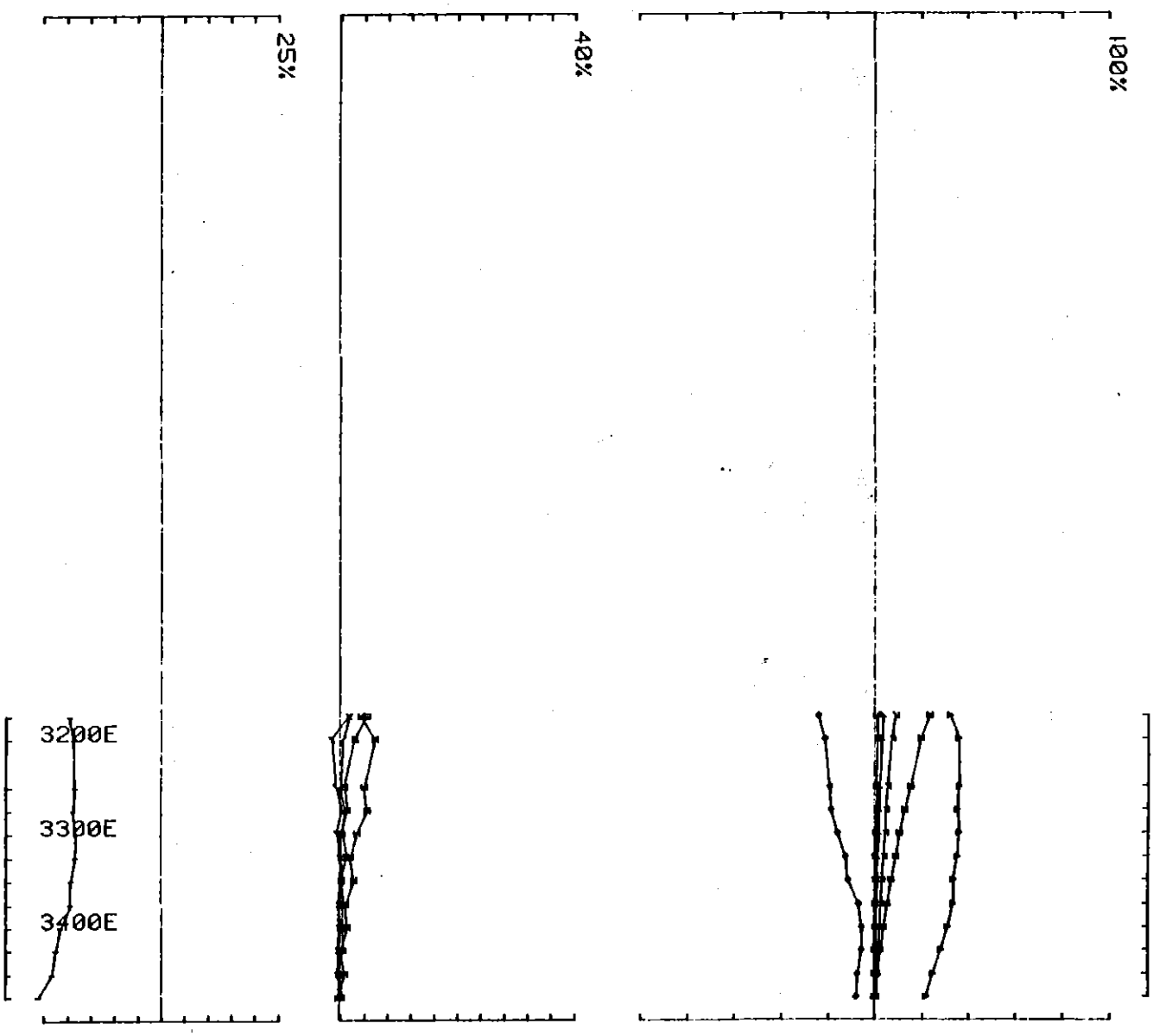
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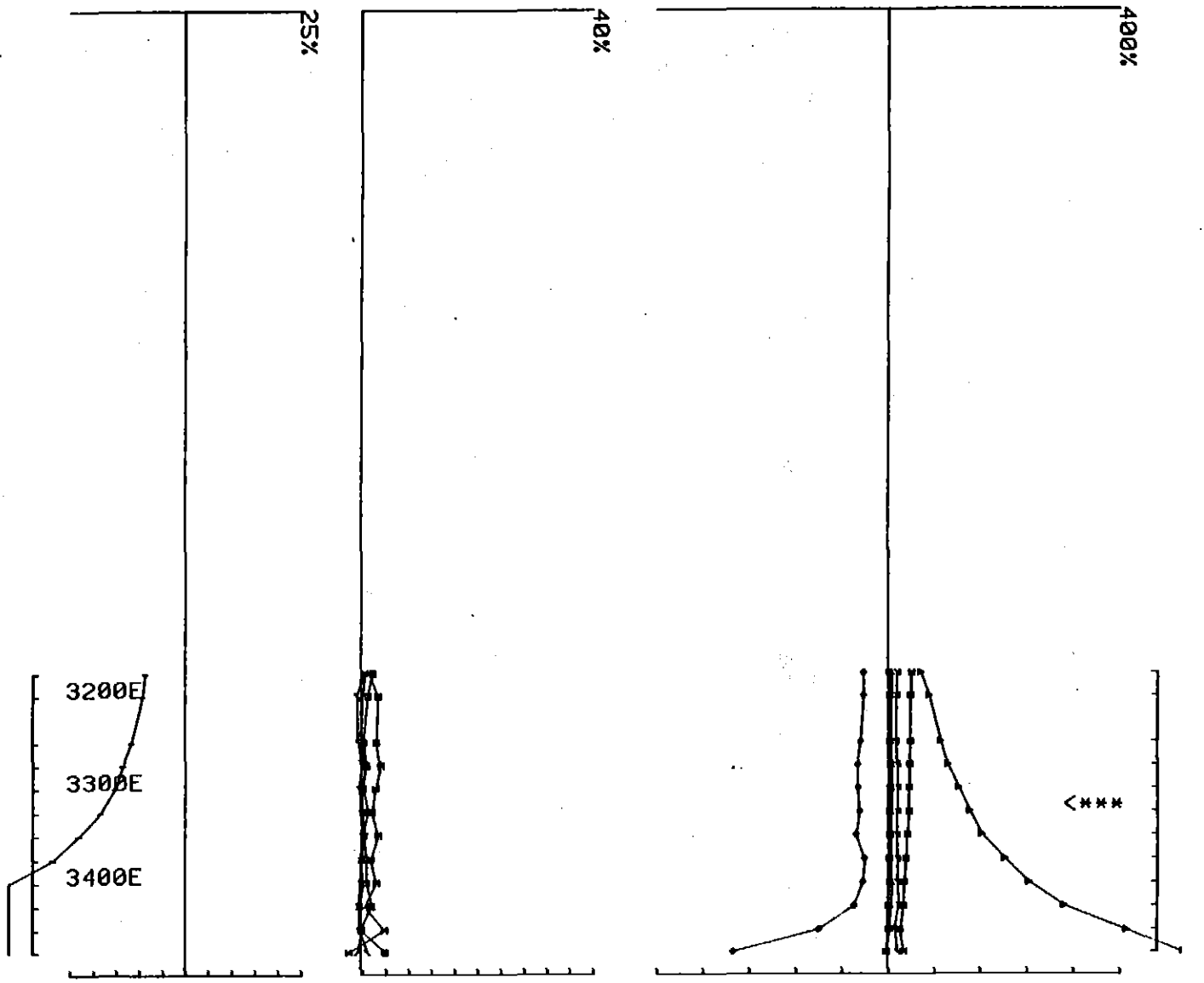
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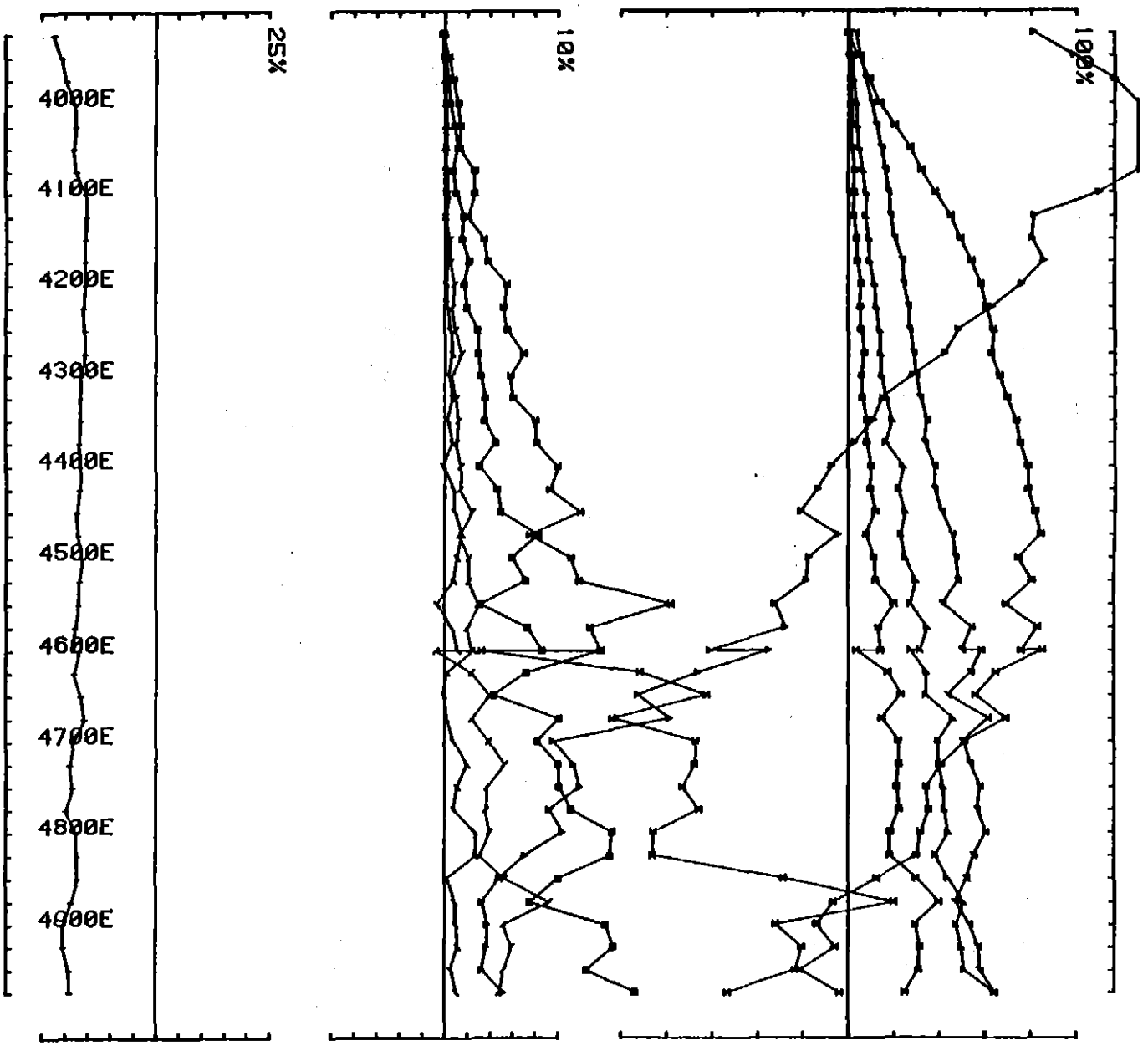
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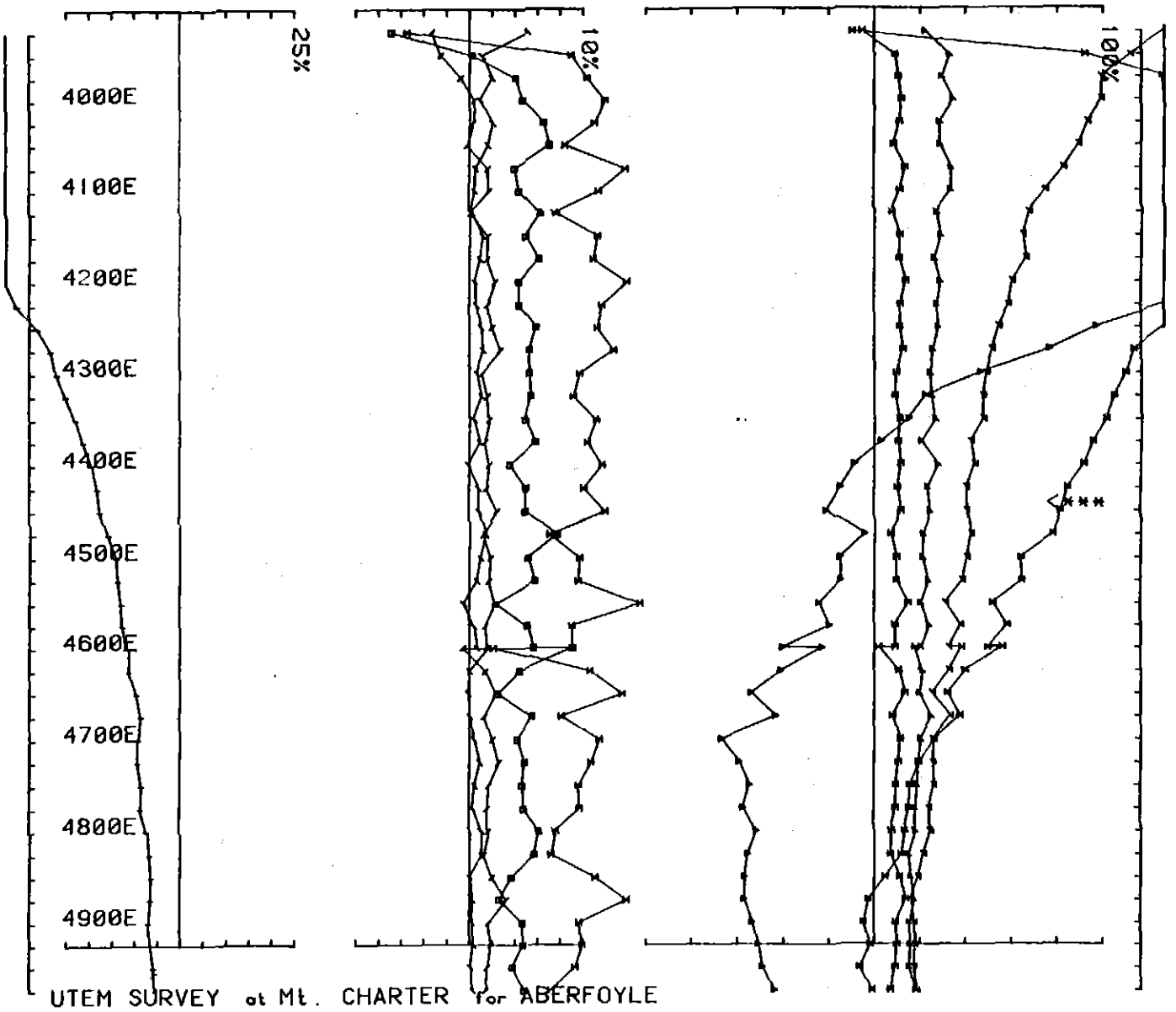
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

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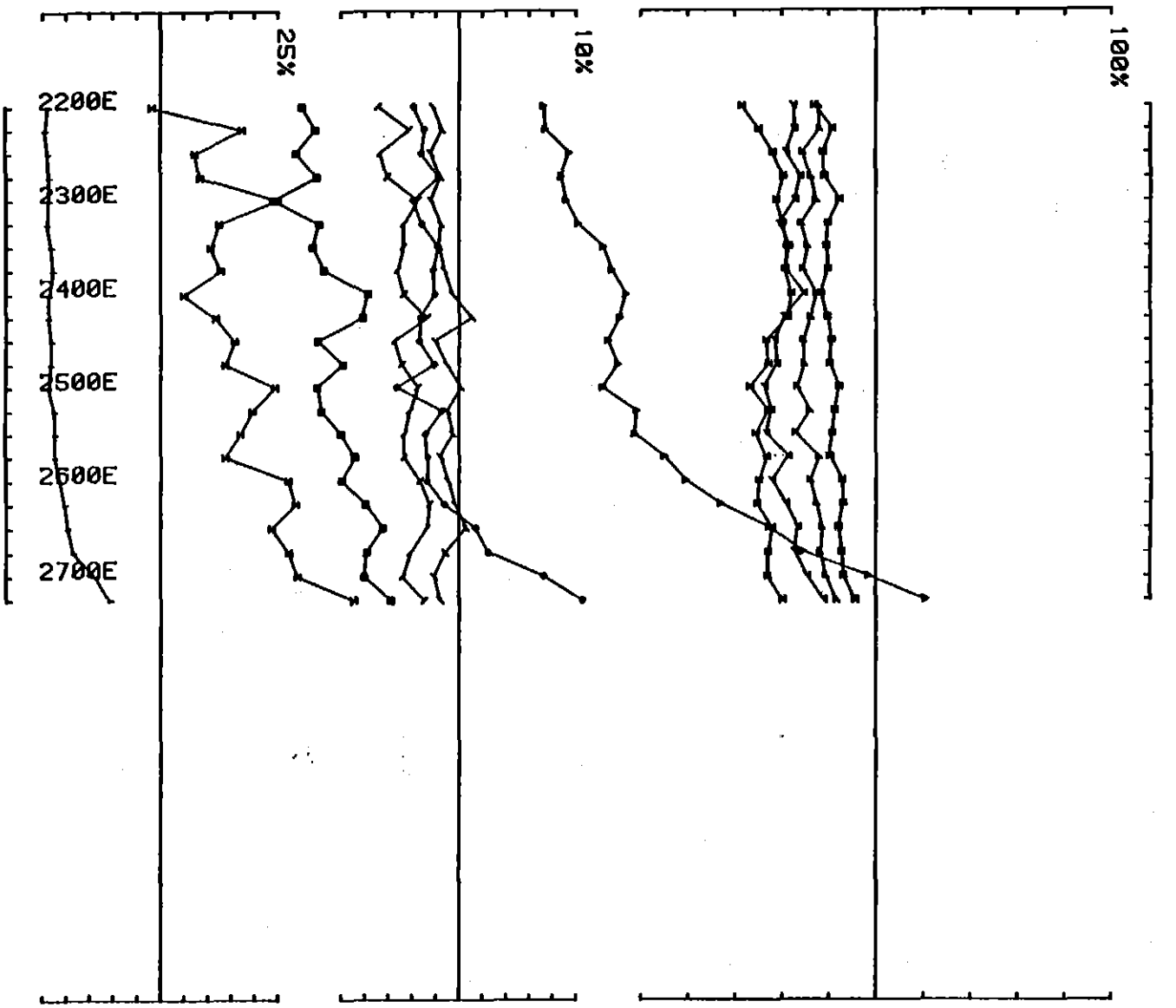
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

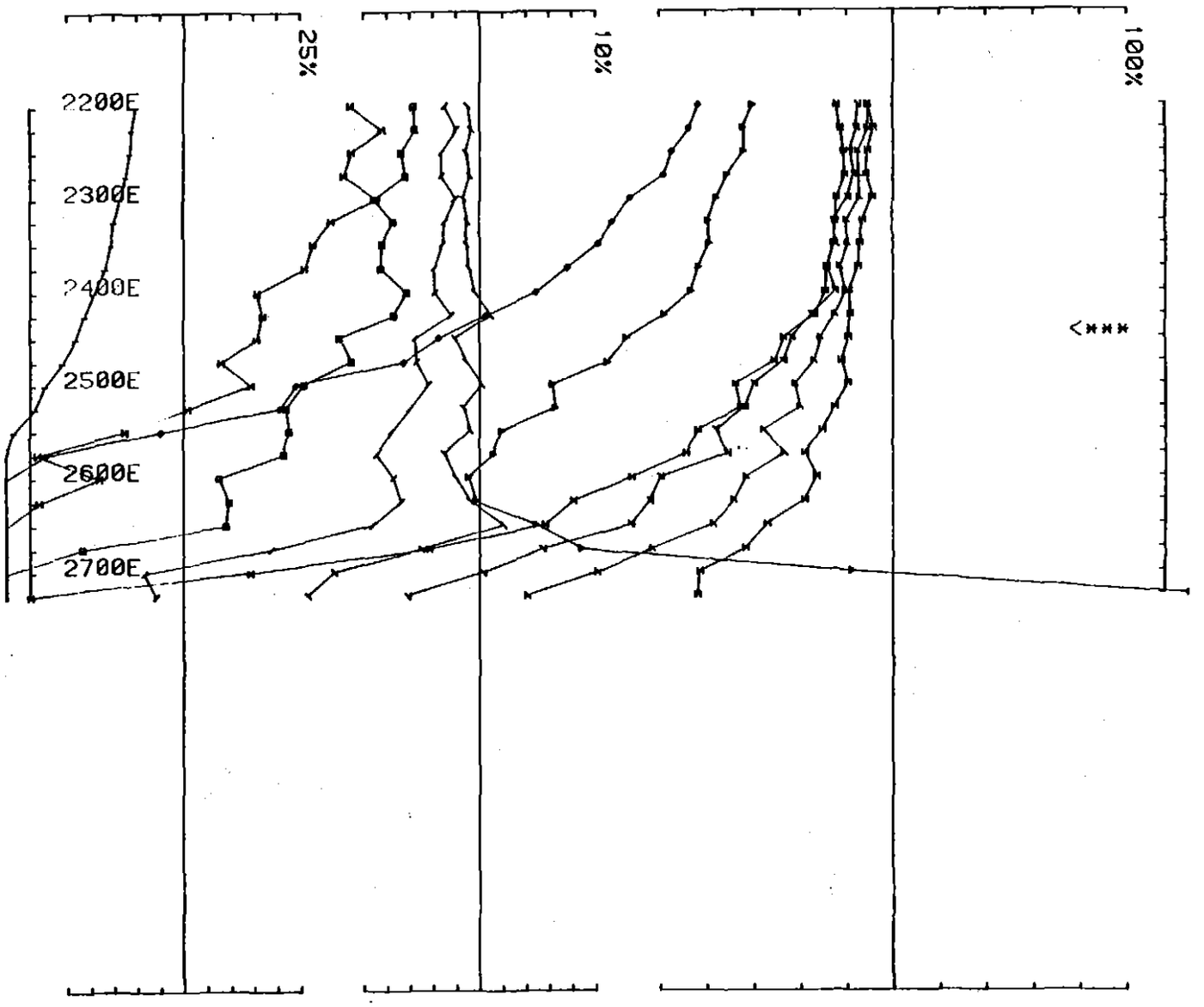
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

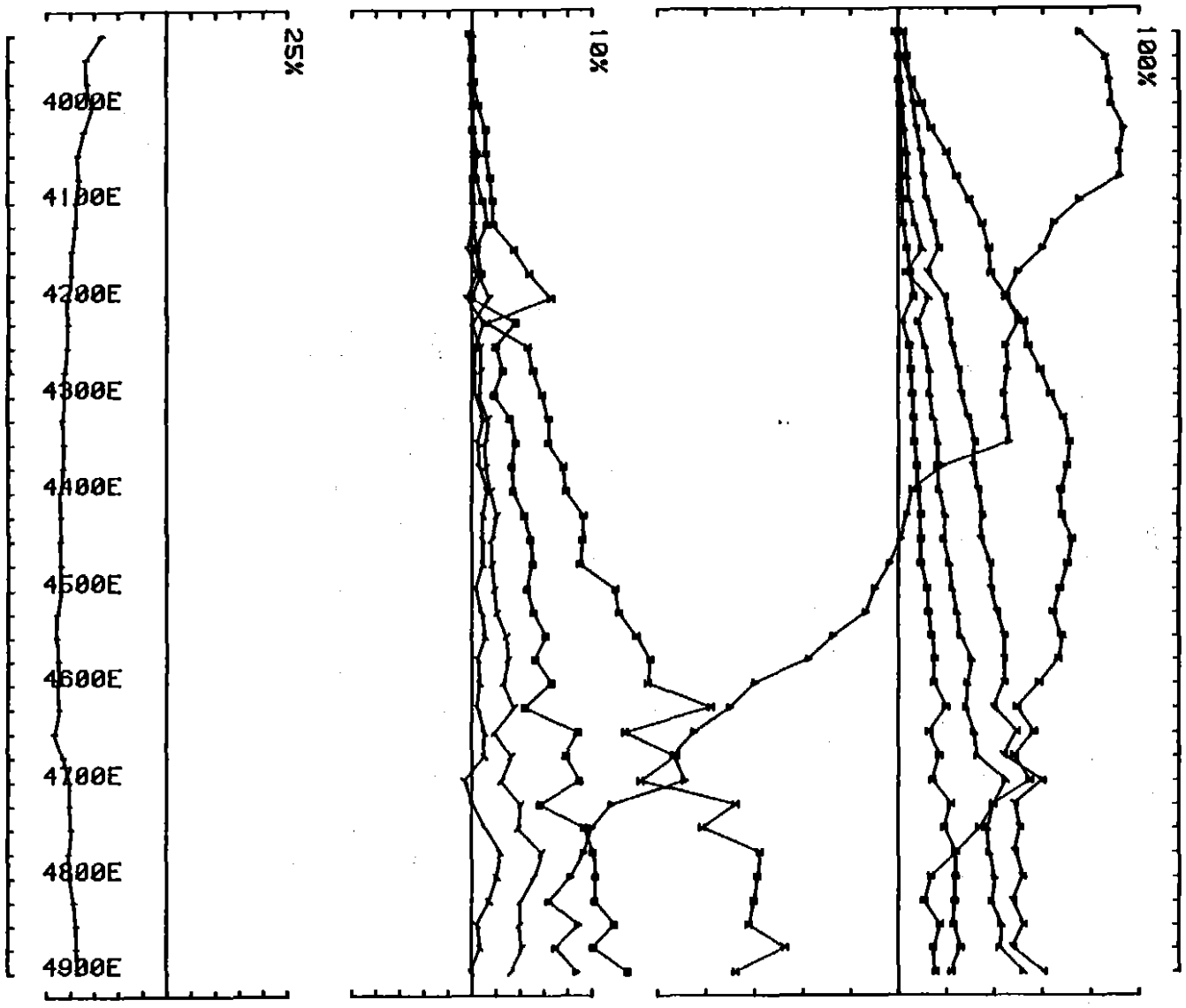
Loop 0003 line 2800N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

Loop 0003 line 2800N component Hz secondary field Ch 1 point norm.



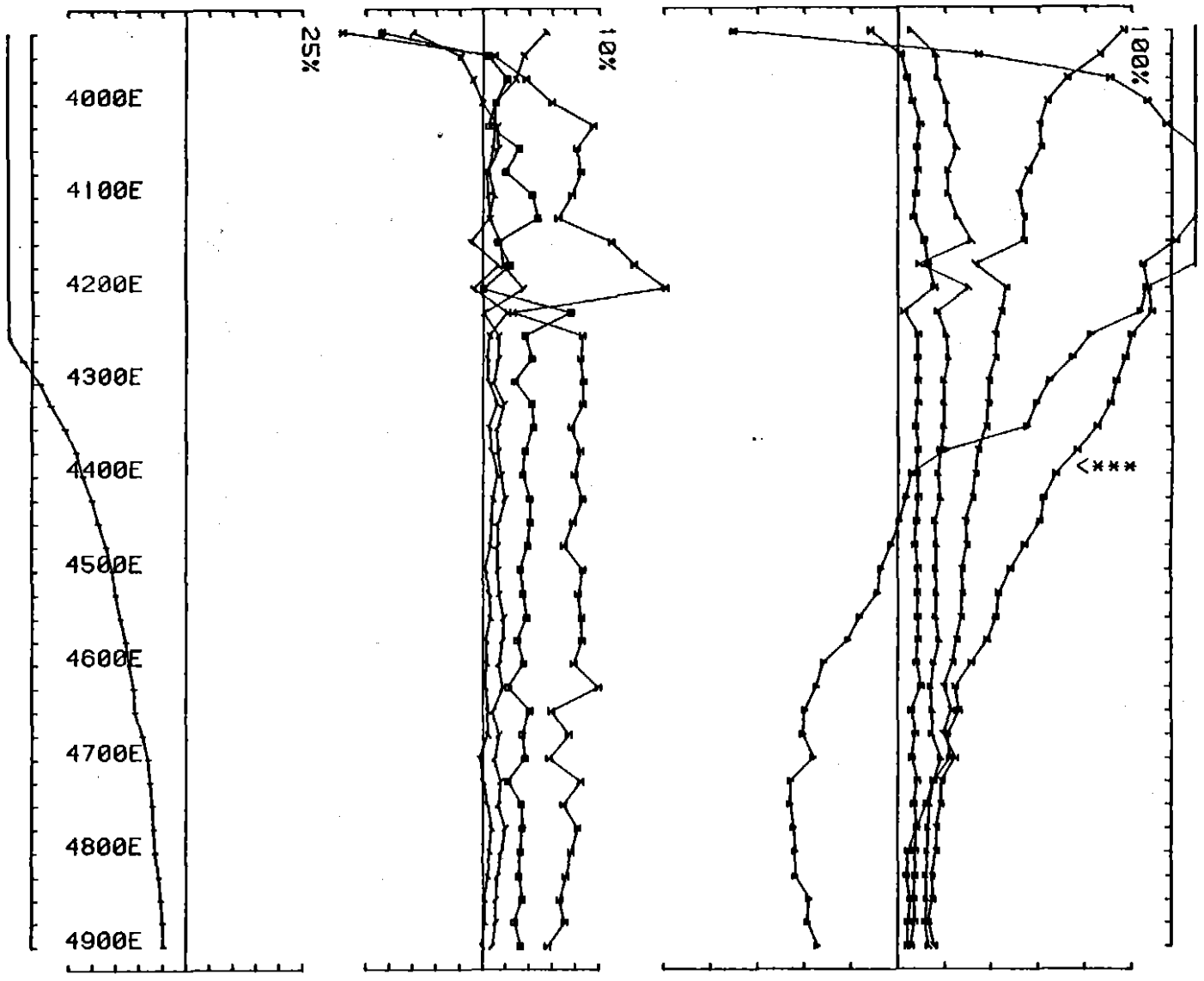
UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

Loop 0003 line 3000N component Hz secondary field Ch 1 contin. norm.

599201

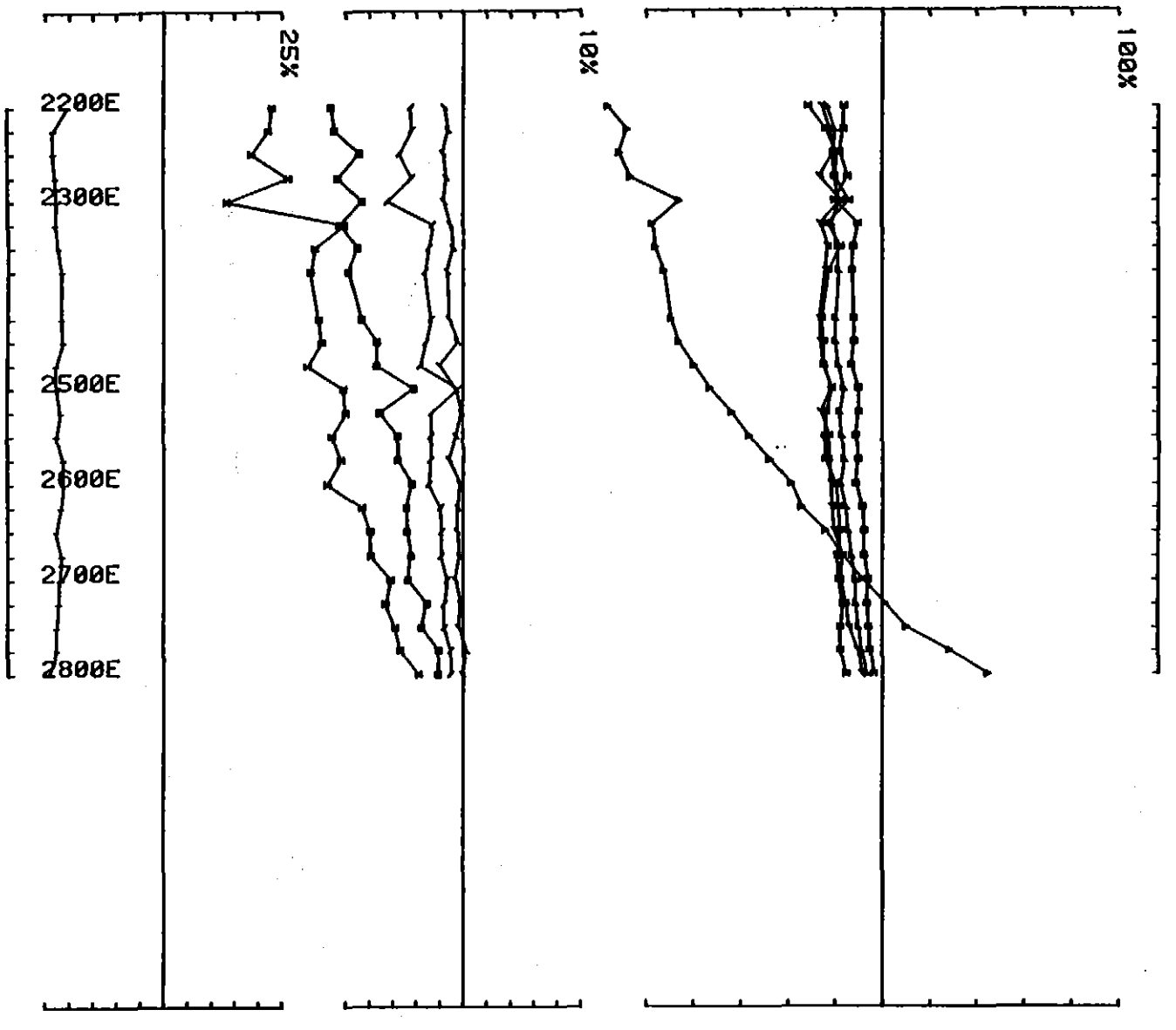
200



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

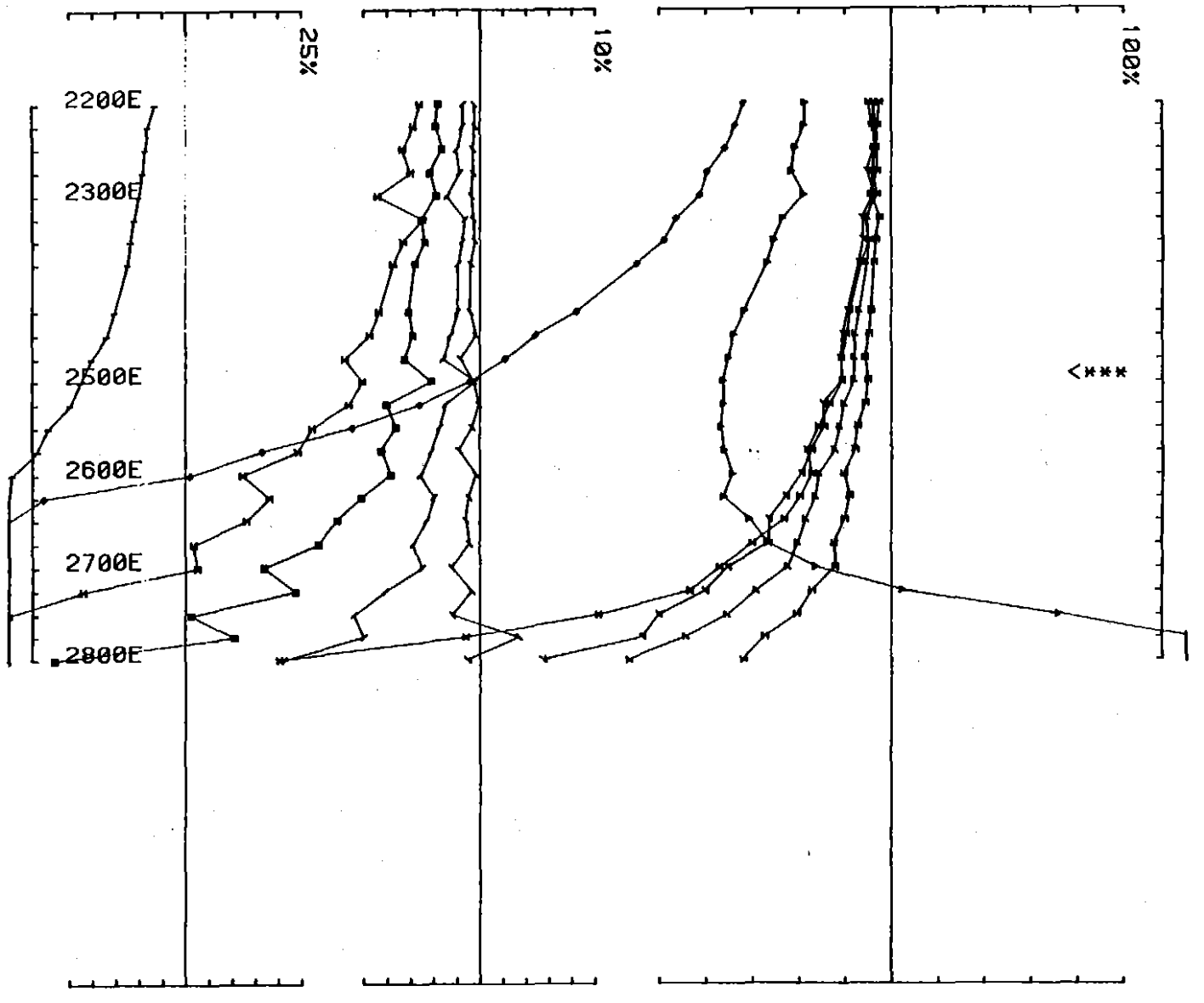
Loop 0003 line 3000N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

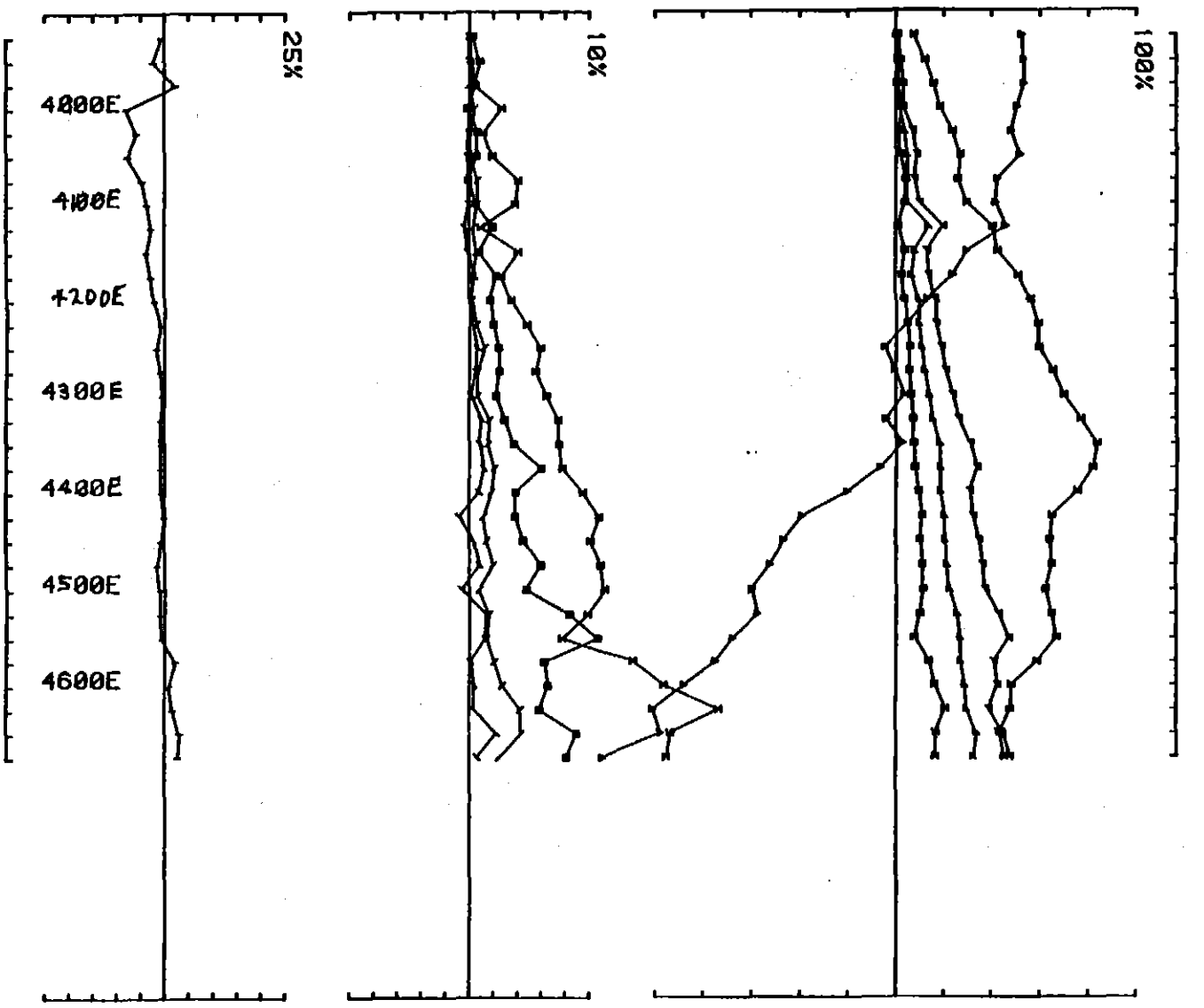
Loop 0003 line 3000N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

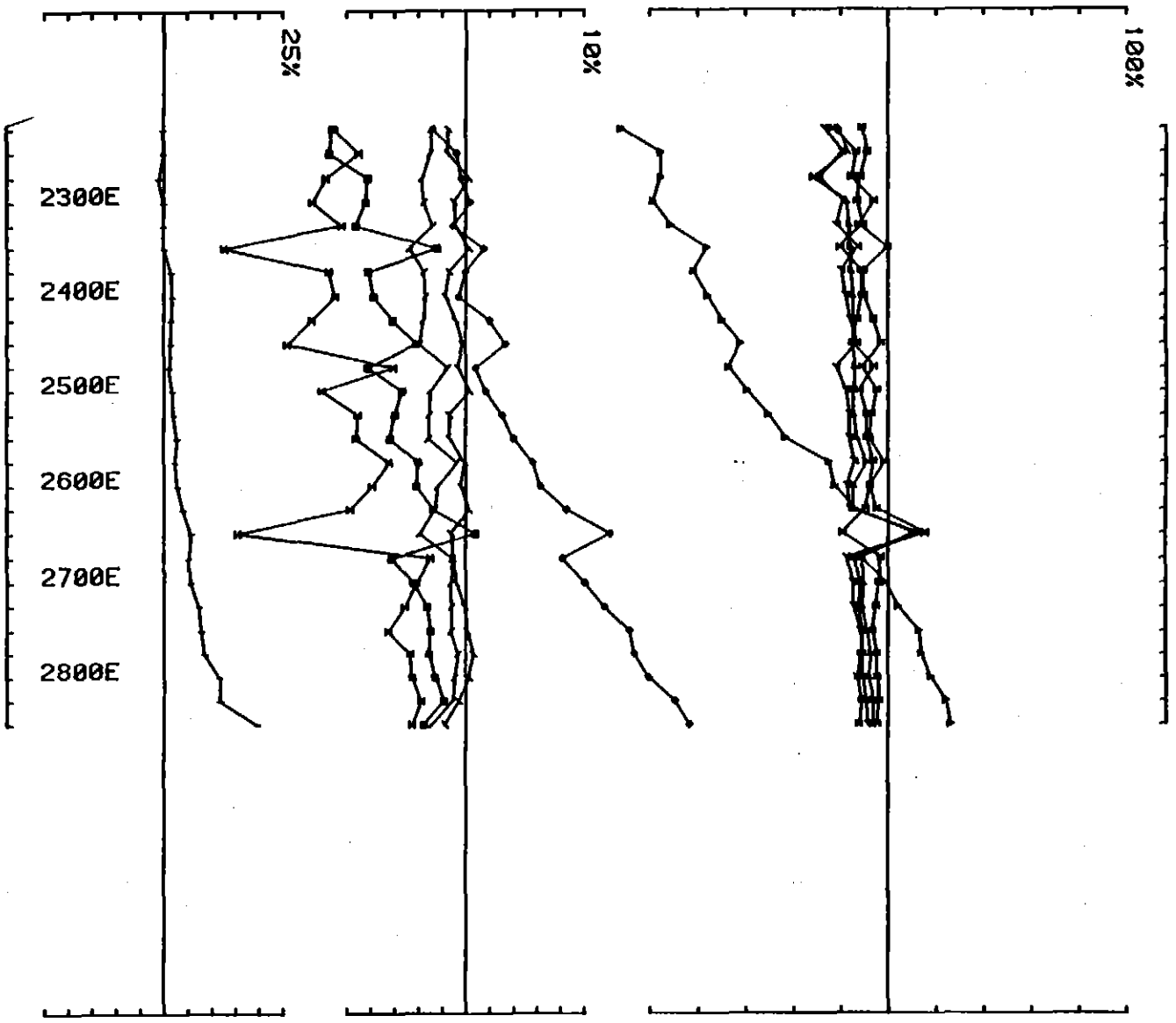
Loop 0003 line 3000N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

Loop 0003 line 3200N component Hz secondary field Ch 1 contin. norm.

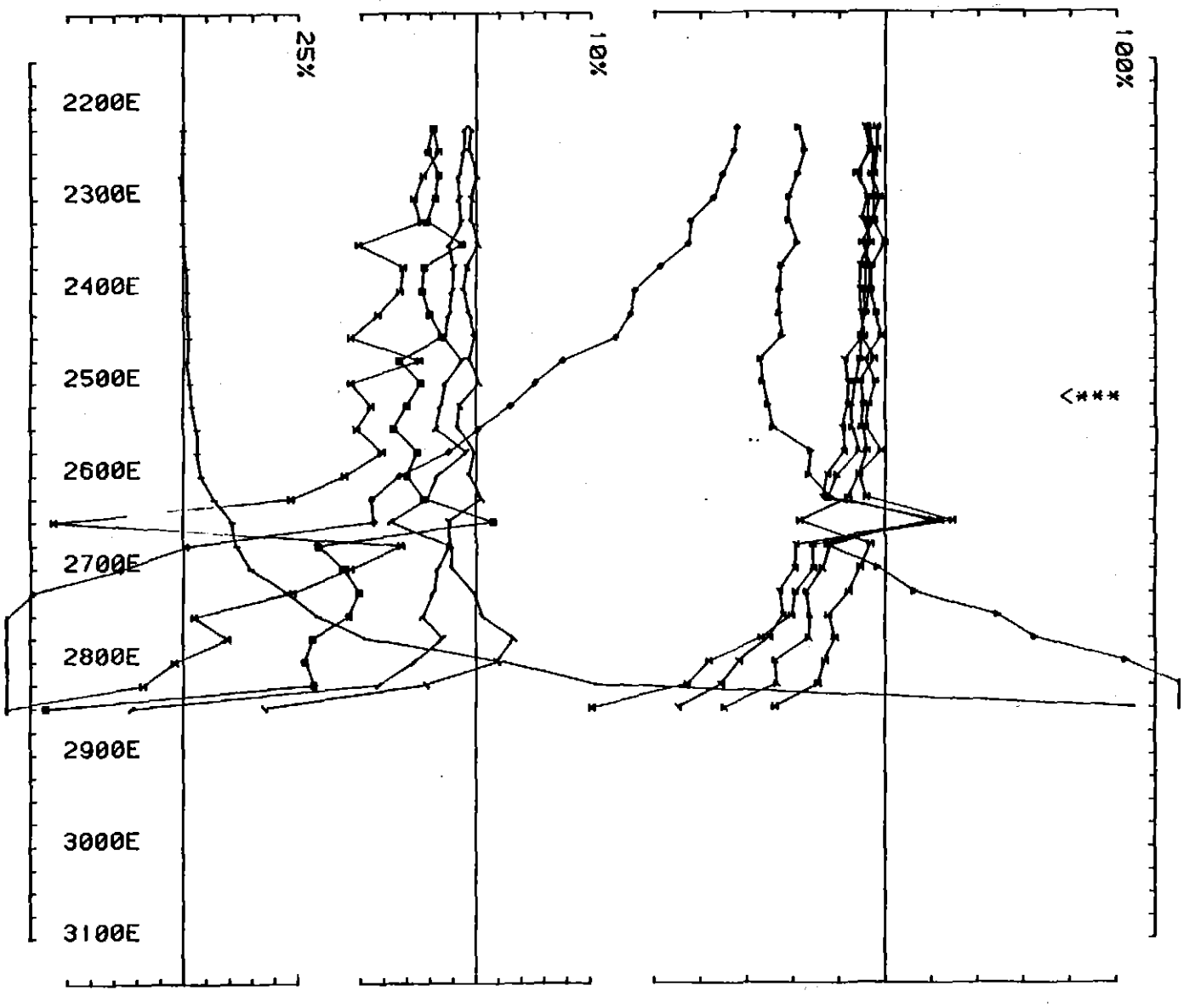


UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 30/8/87

Loop 0003 line 3200N component Hz secondary field Ch 1 contin. norm.

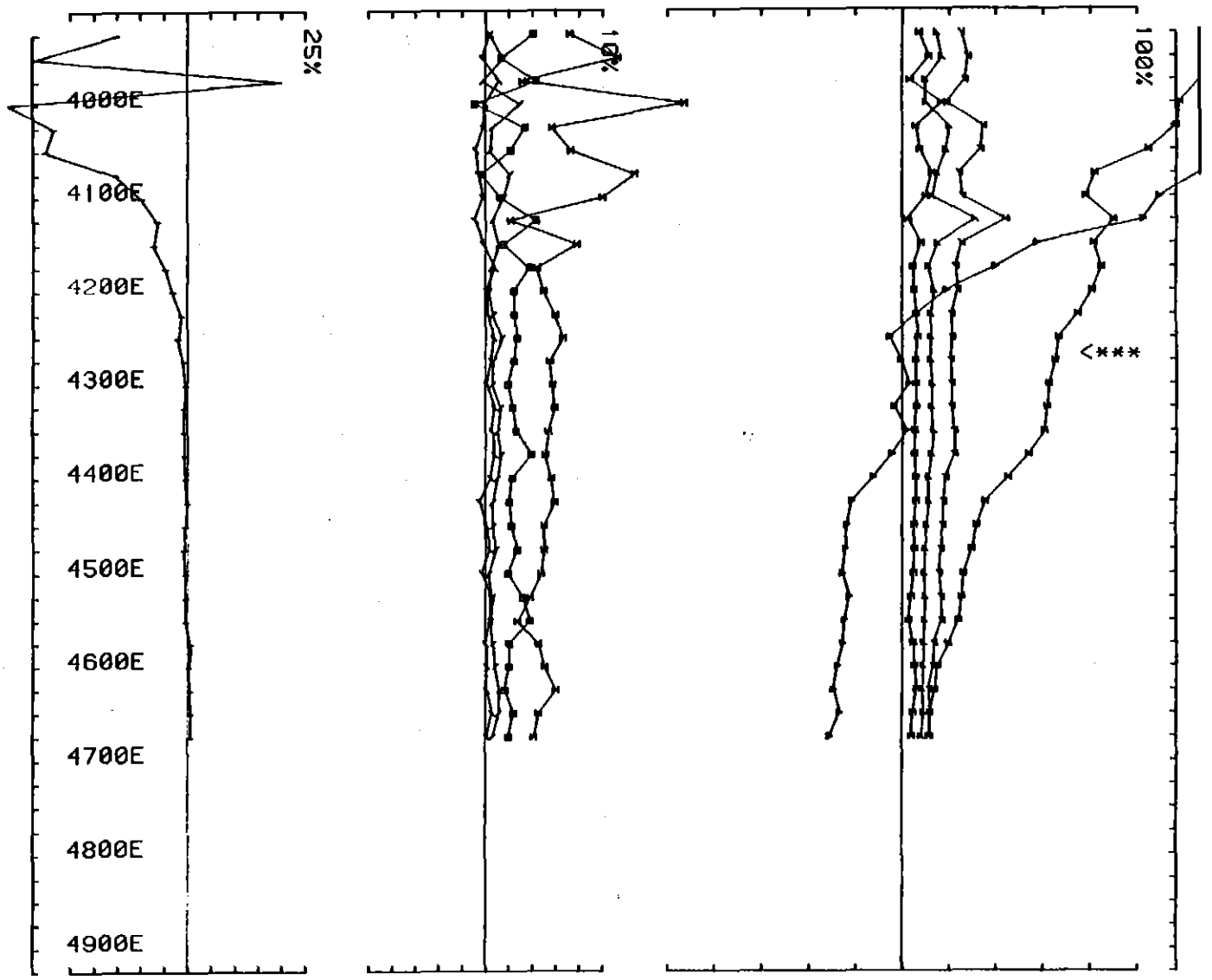
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

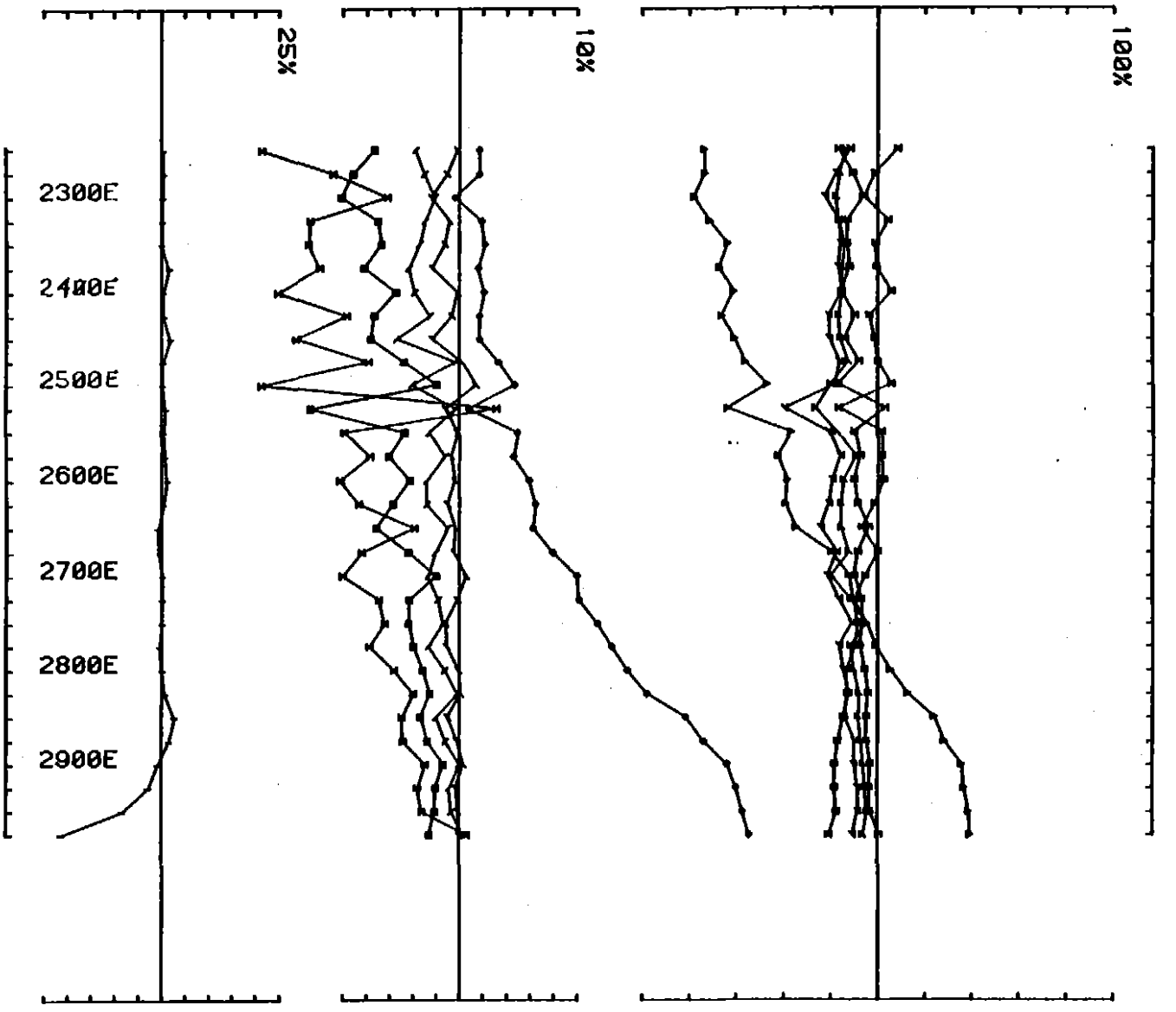
Loop 0003 line 3200N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

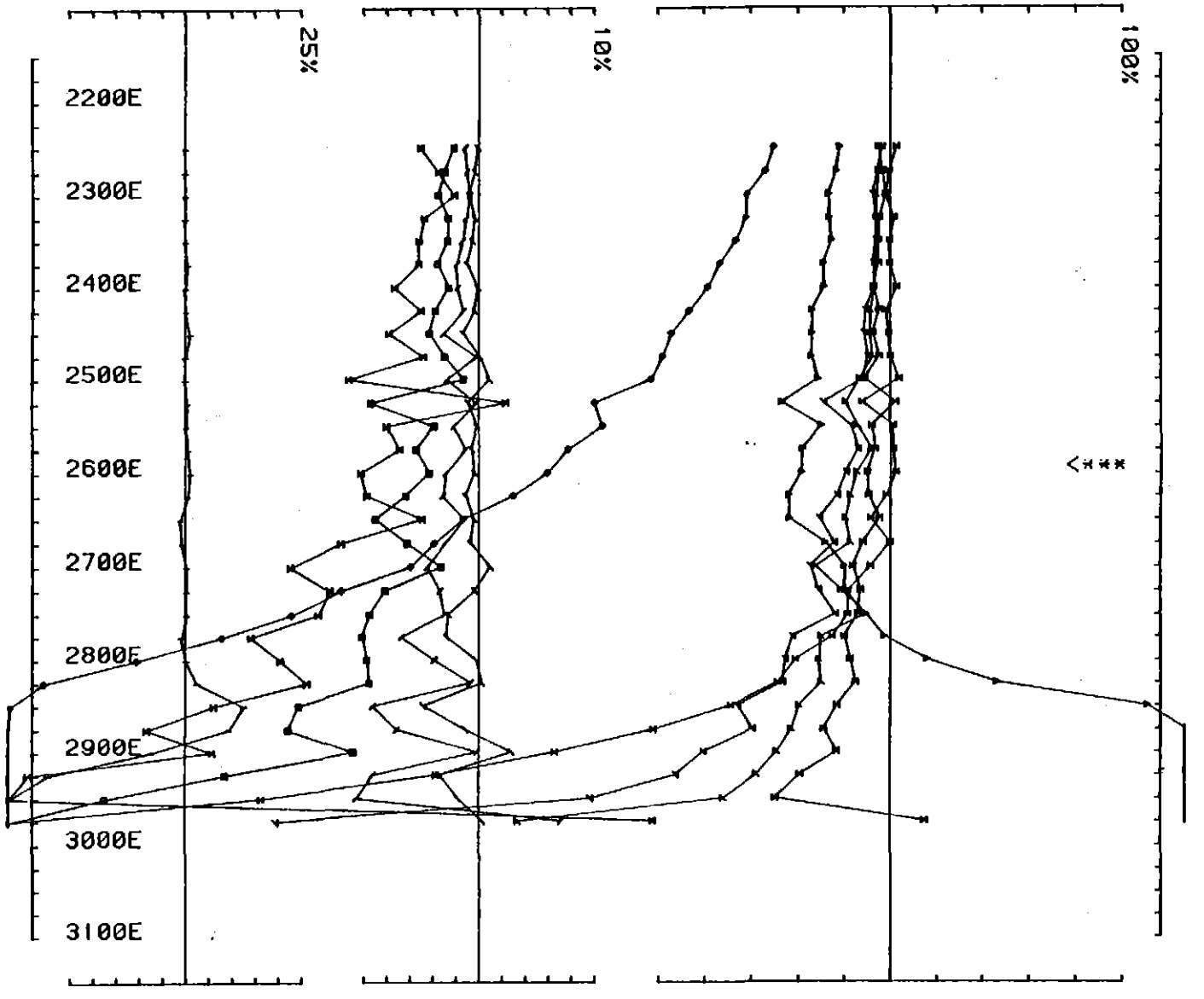
Loop 0003 line 3200N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

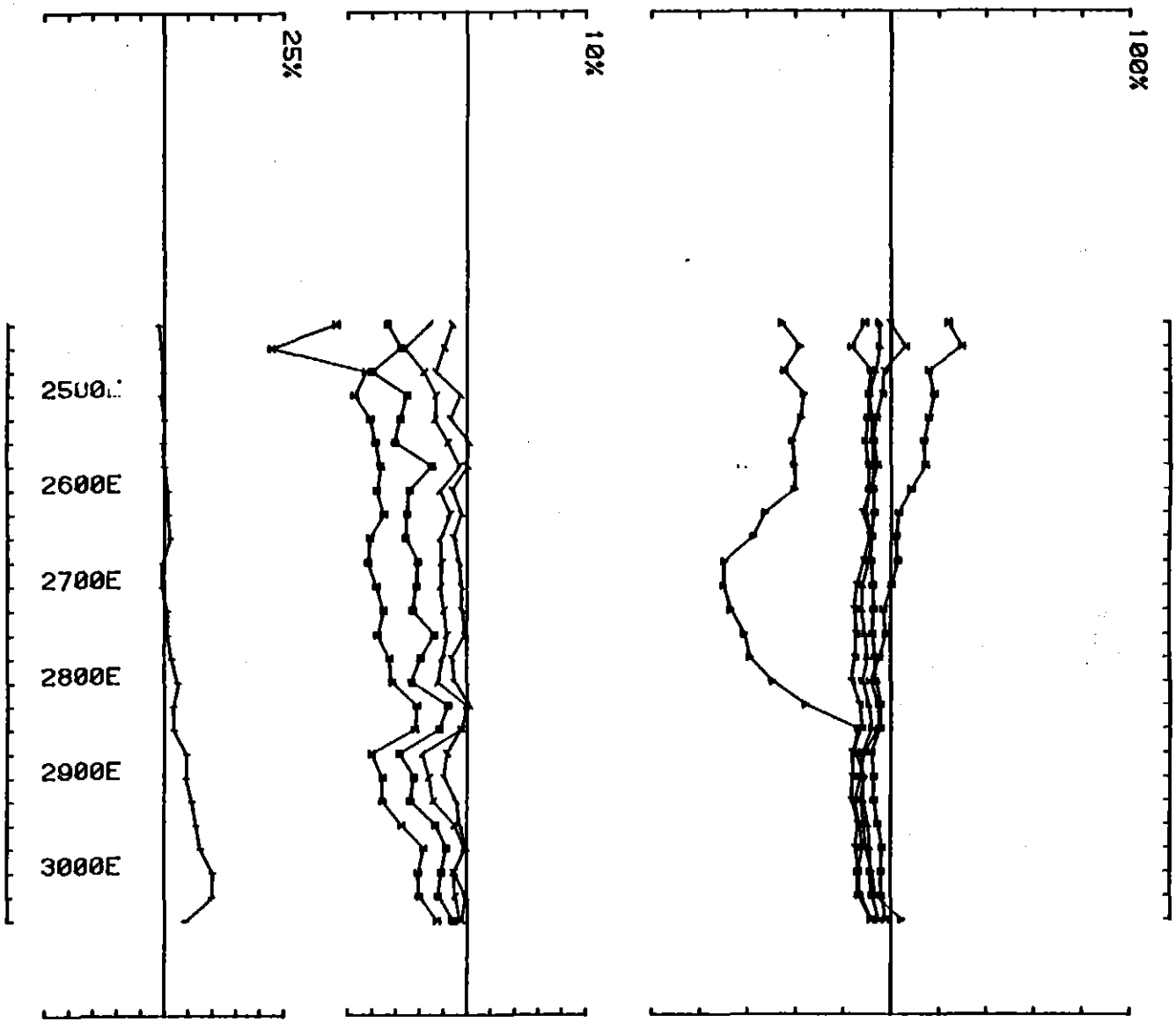
Loop 0003 line 3400N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

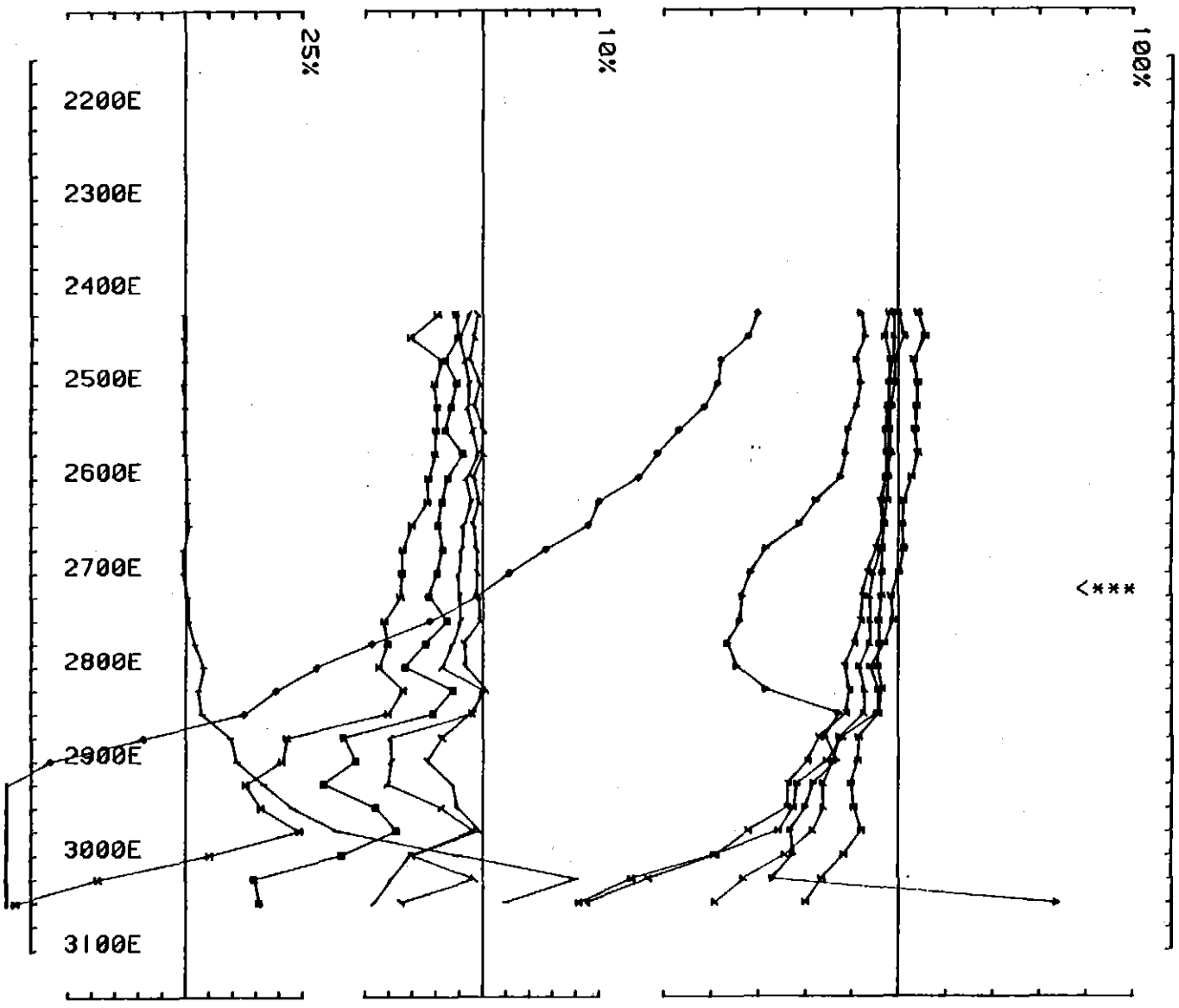
Loop 0003 line 3400N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

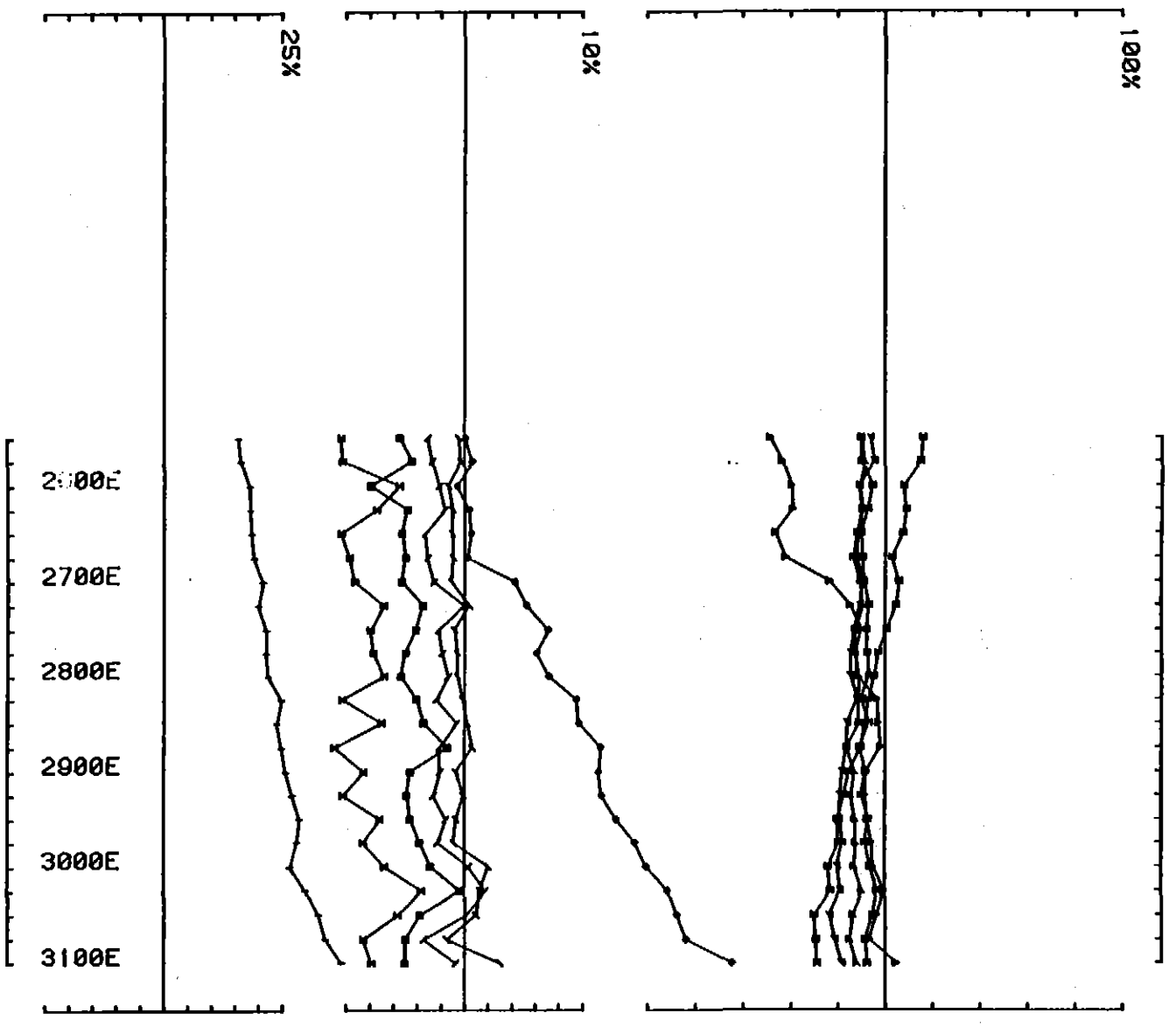
Loop 0003 line 3600N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

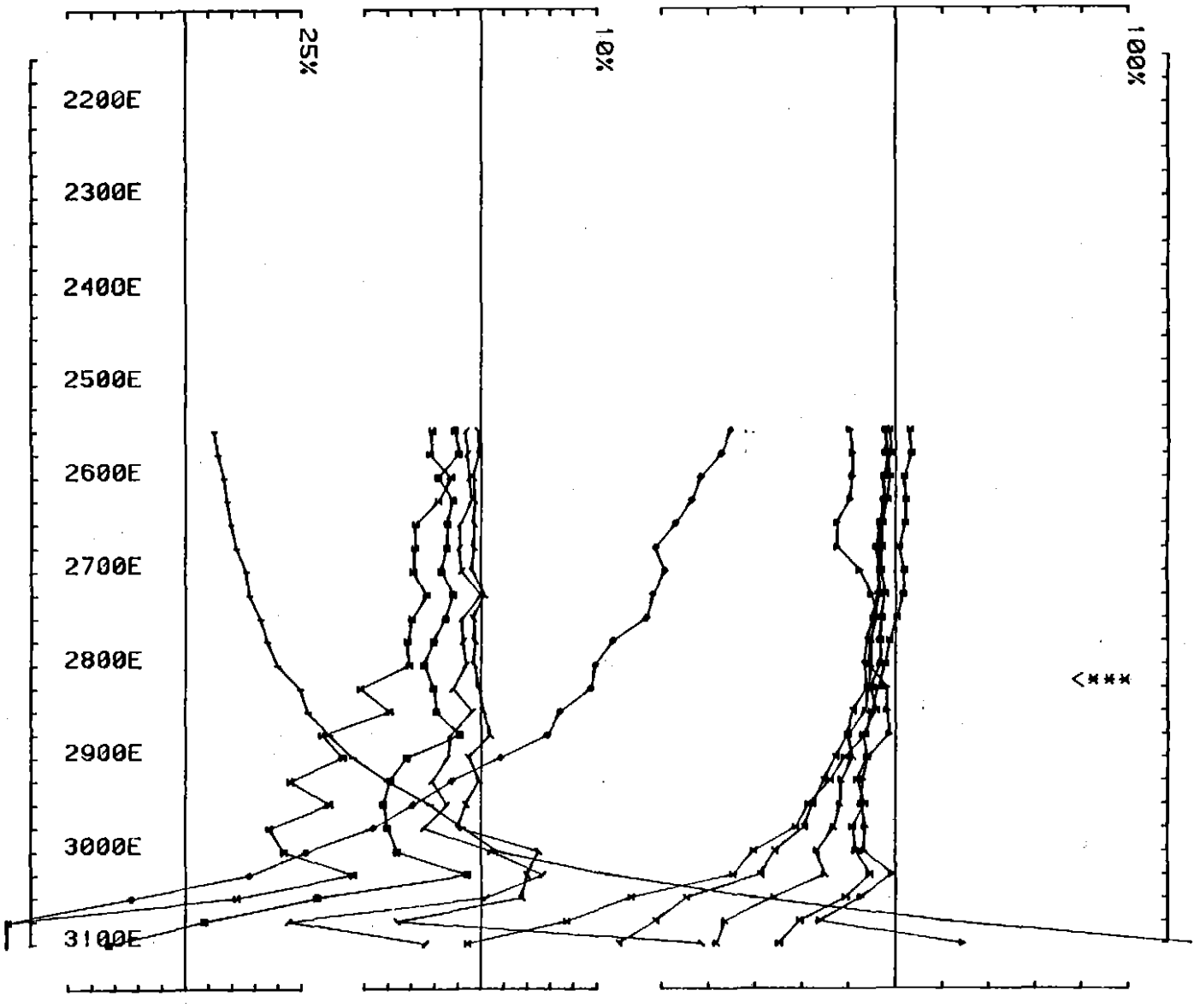
Loop 0003 line 3600N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 30/8/87

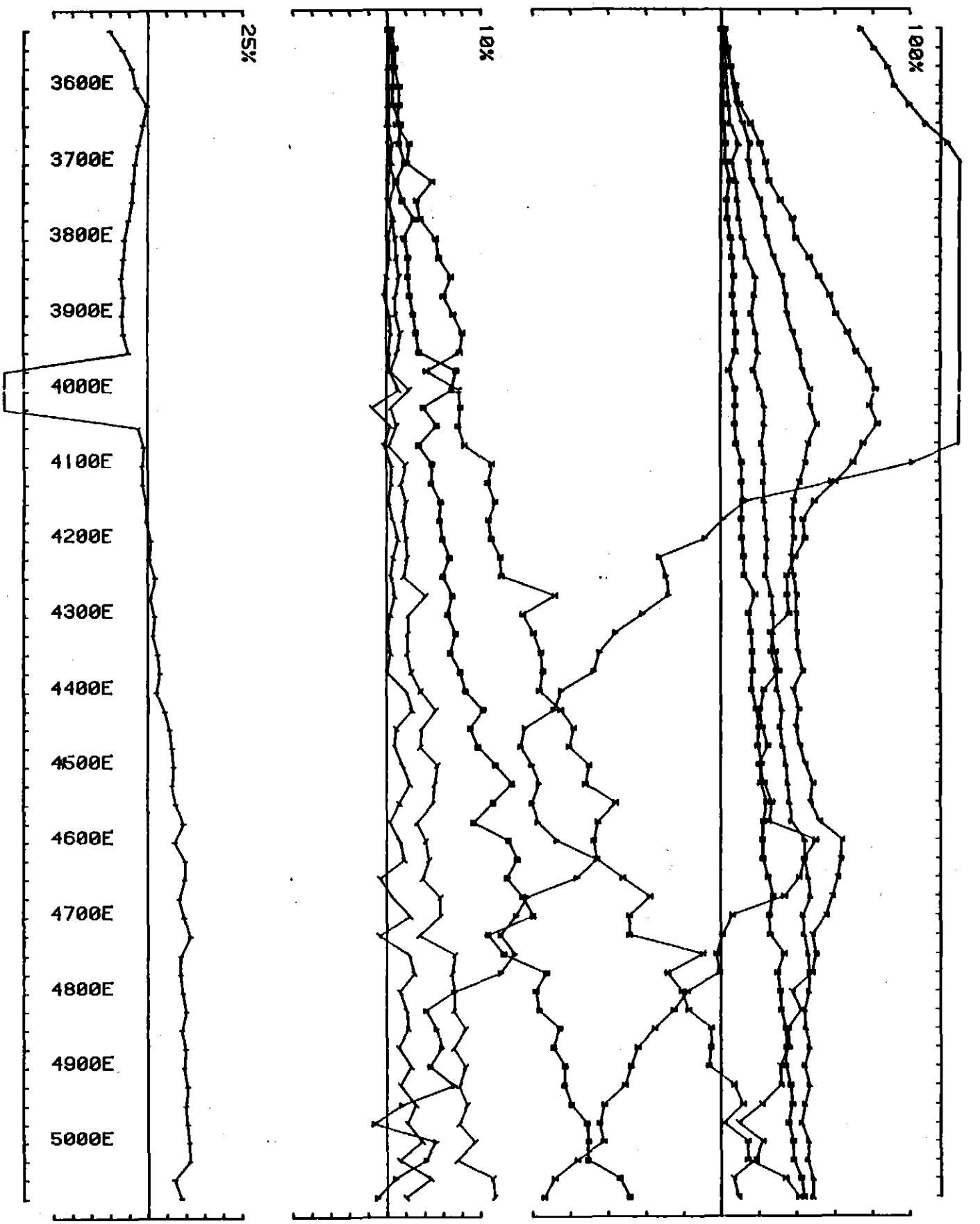
Loop 0003 line 3800N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

Loop 0003 line 3800N component Hz secondary field Ch 1 point norm.



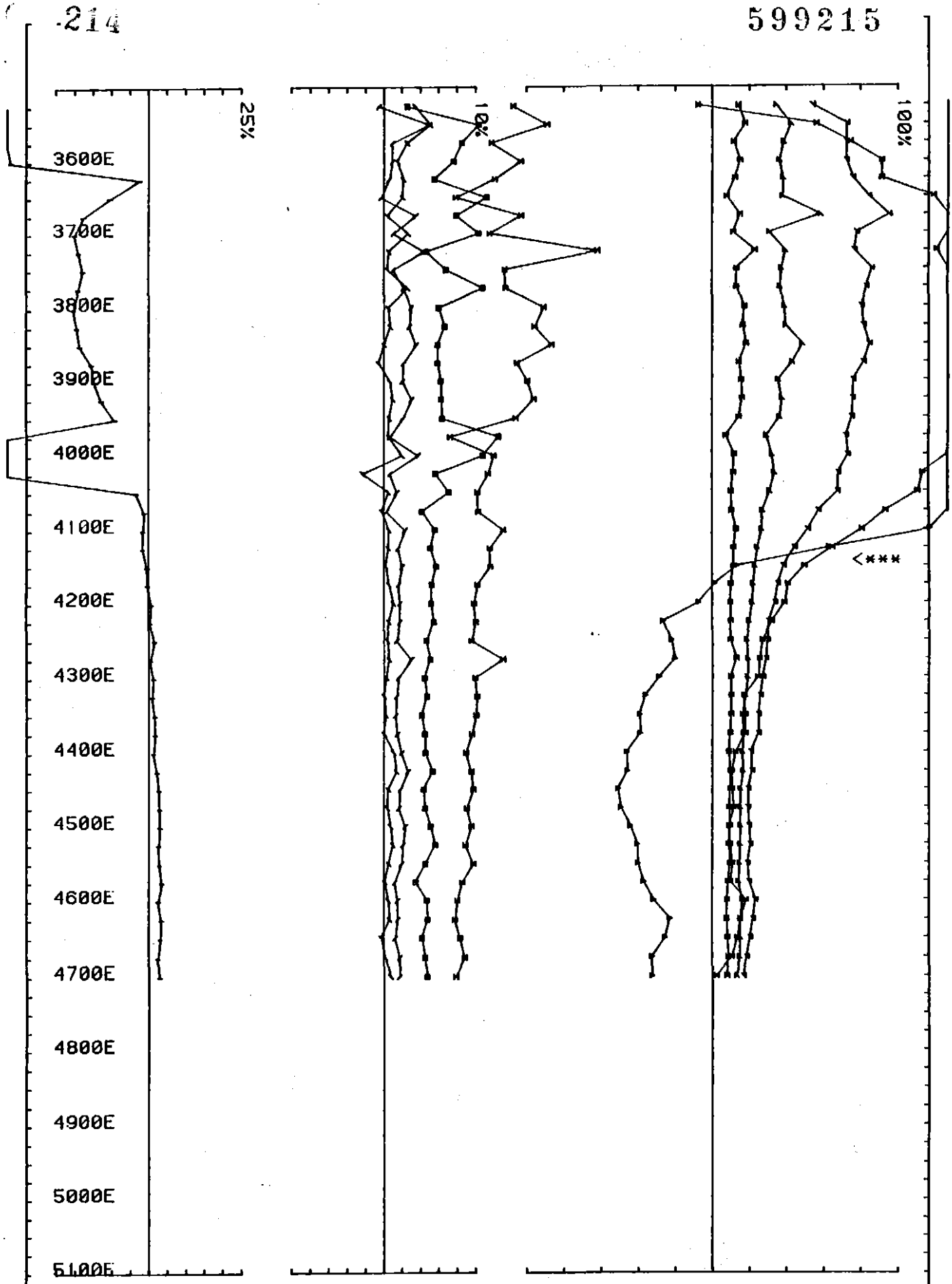
UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 2/9/87

Loop 0004 line 1800N component Hz secondary field Ch 1 contin. norm..

214

599215



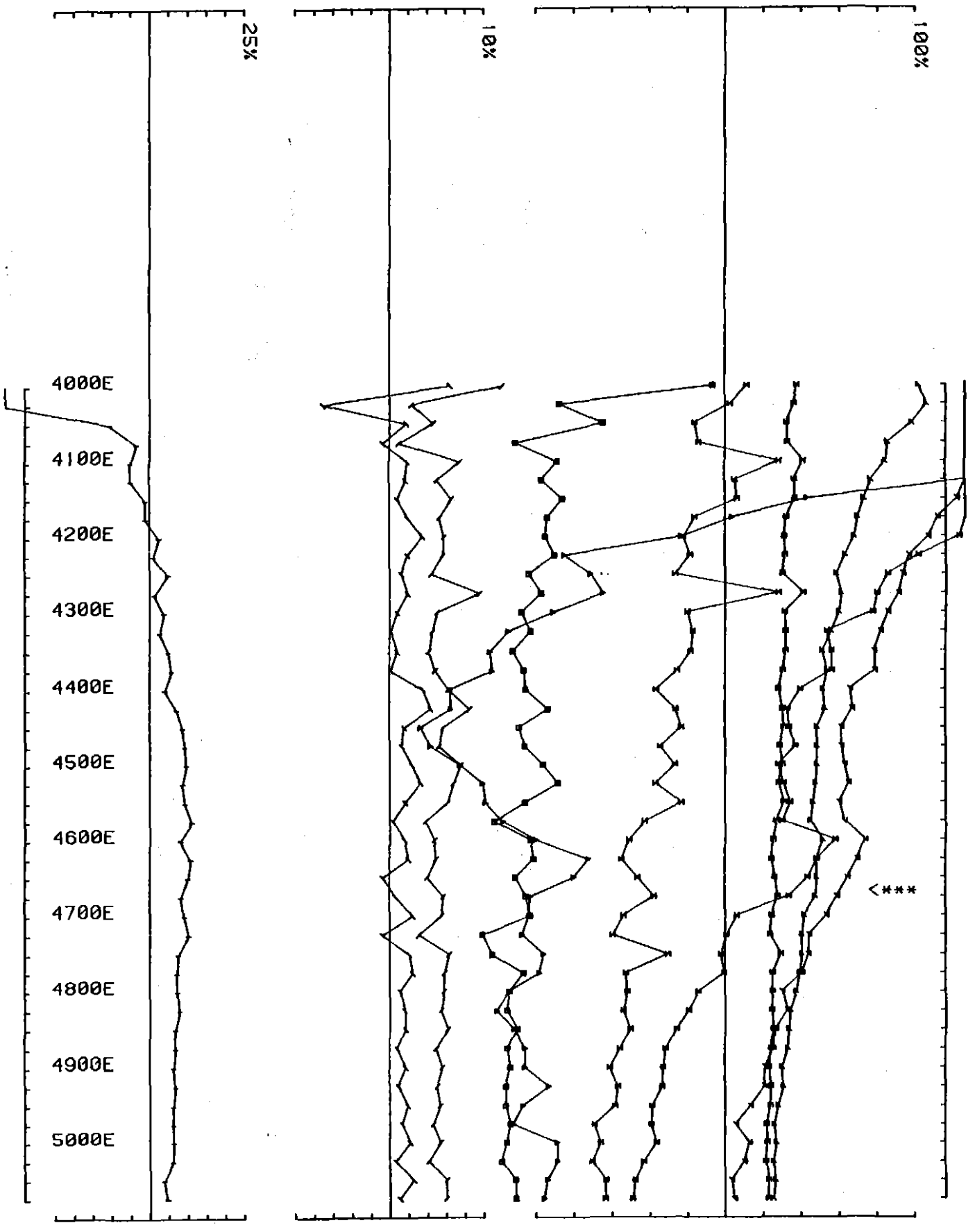
UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

Loop 0004 line 9900N component Hz secondary field Ch 1 point norm.

215

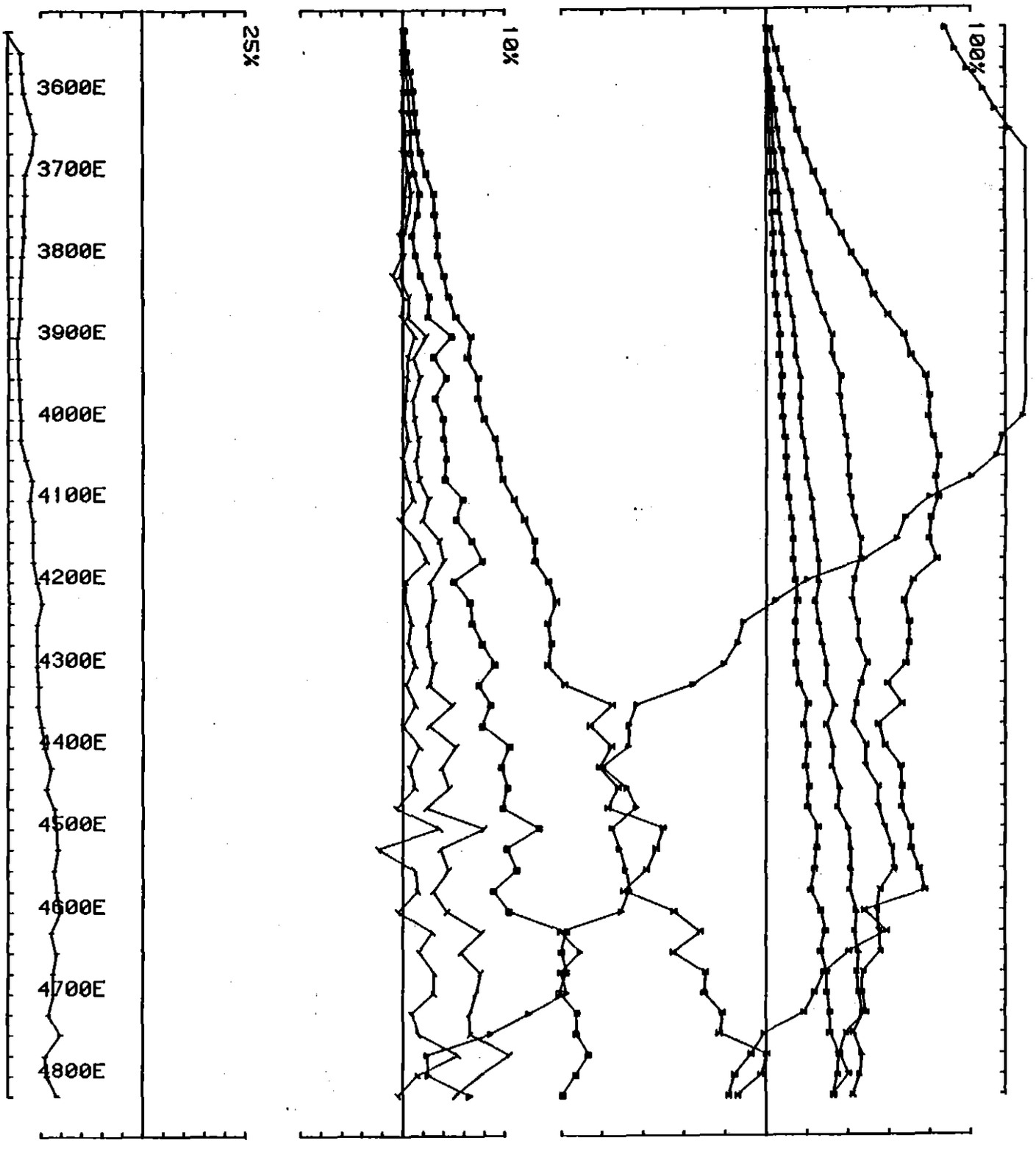
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

Loop 0004 line 1800N component Hz secondary field Ch 1 point norm.



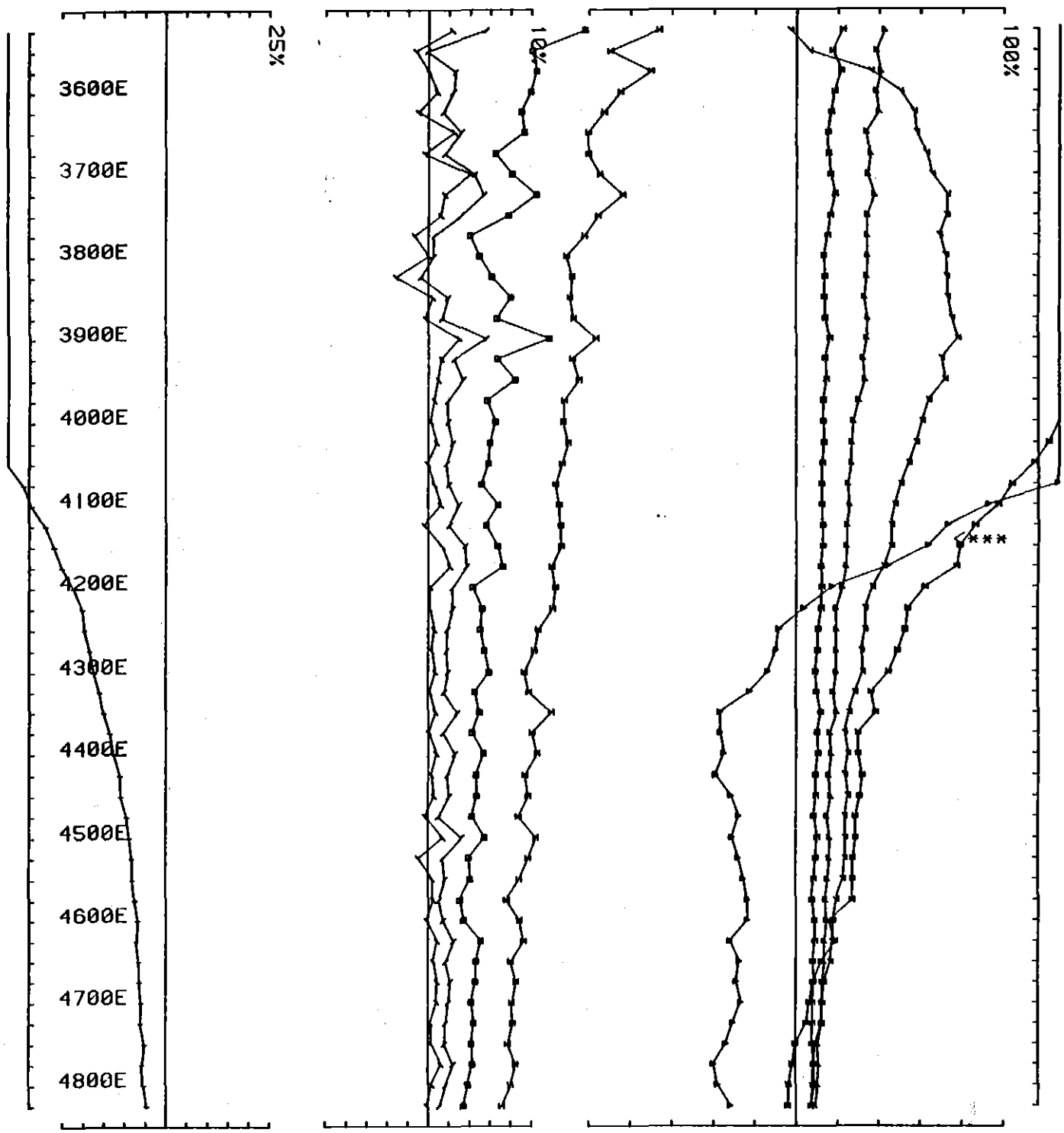
UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 31/8/87

Loop 0004 line 2000N component Hz secondary field Ch 1 contin. norm.

217

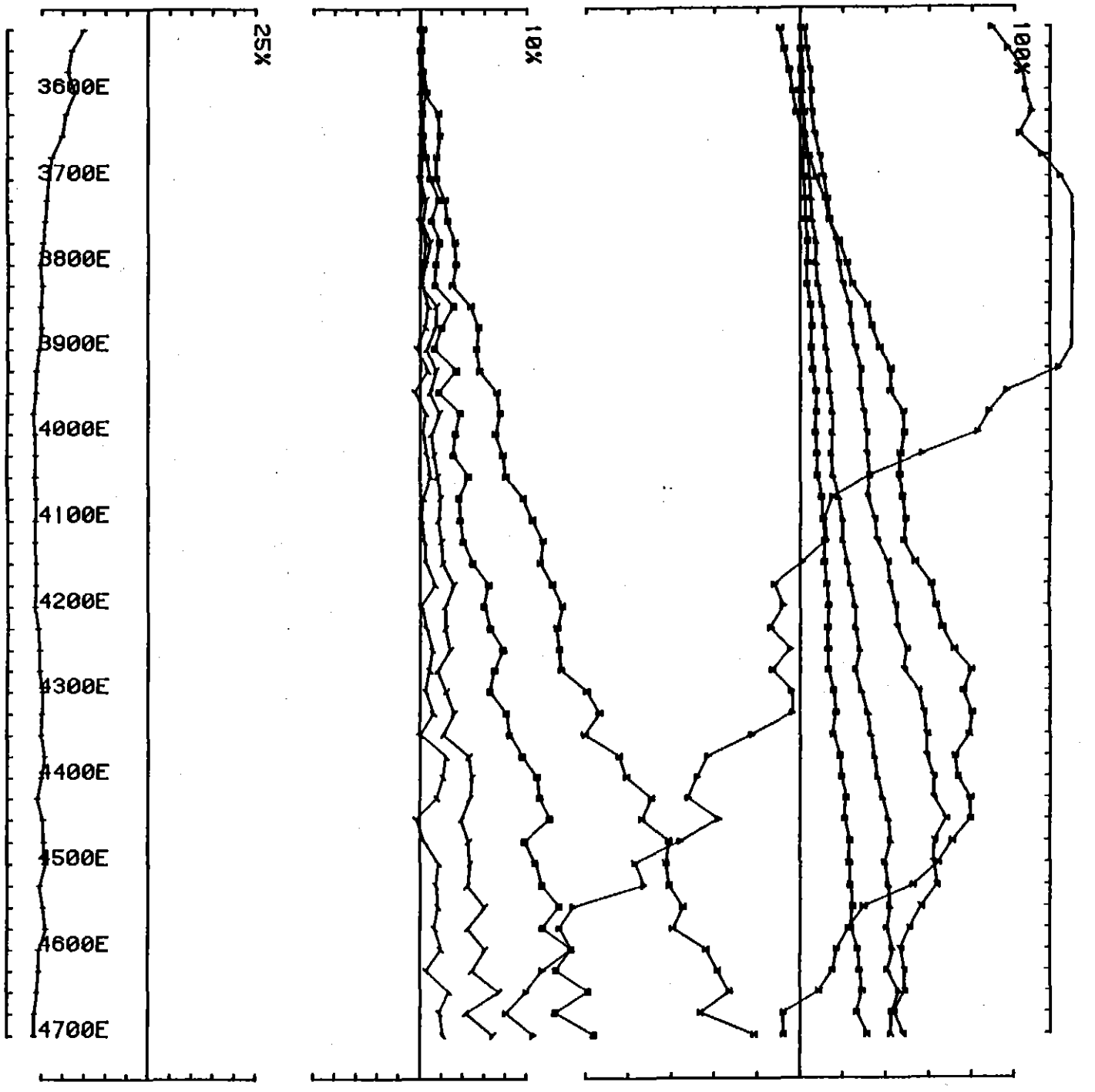
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

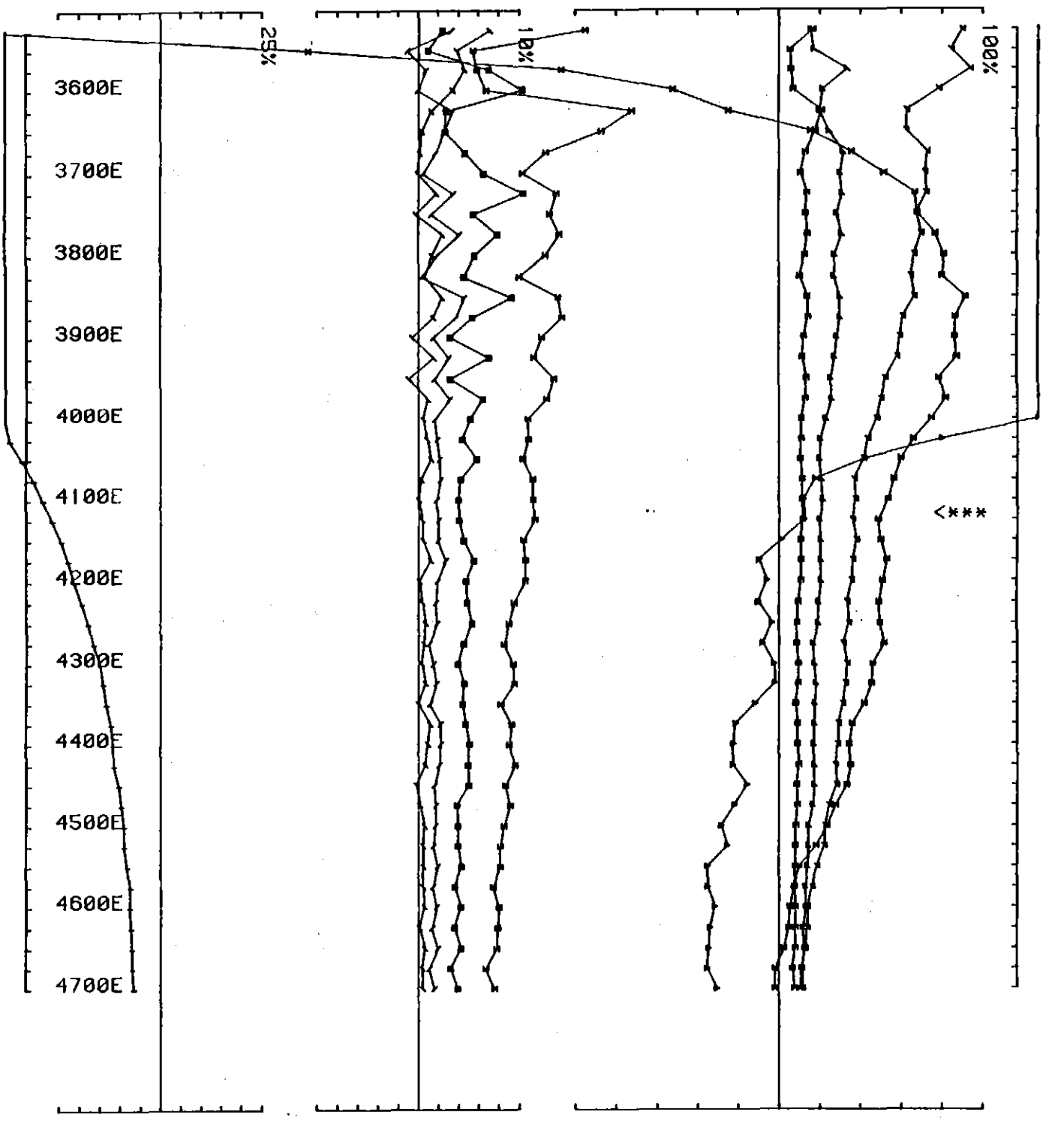
Loop 0004 line 2000N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 31/8/87

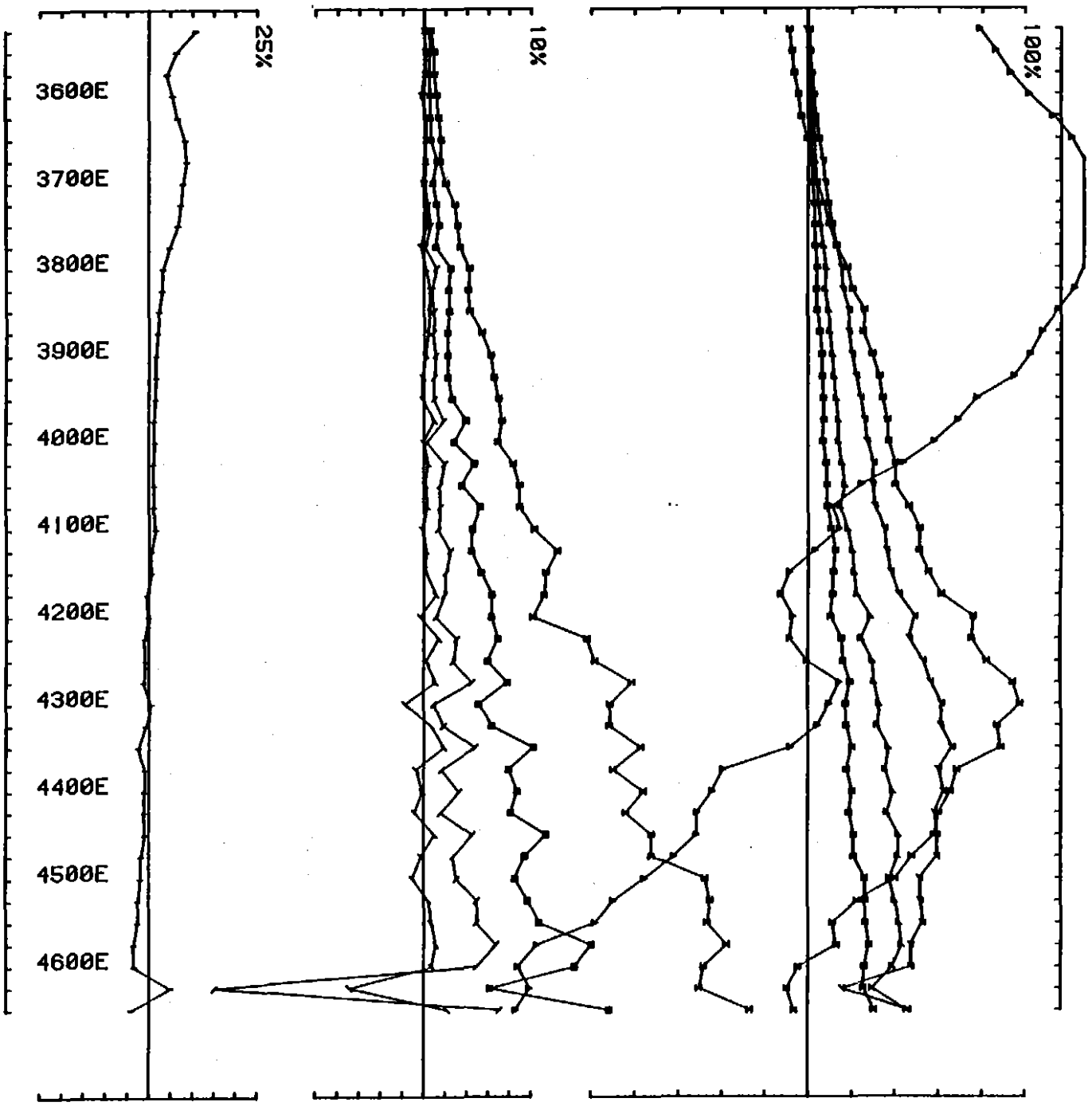
Loop 0004 line 2200N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

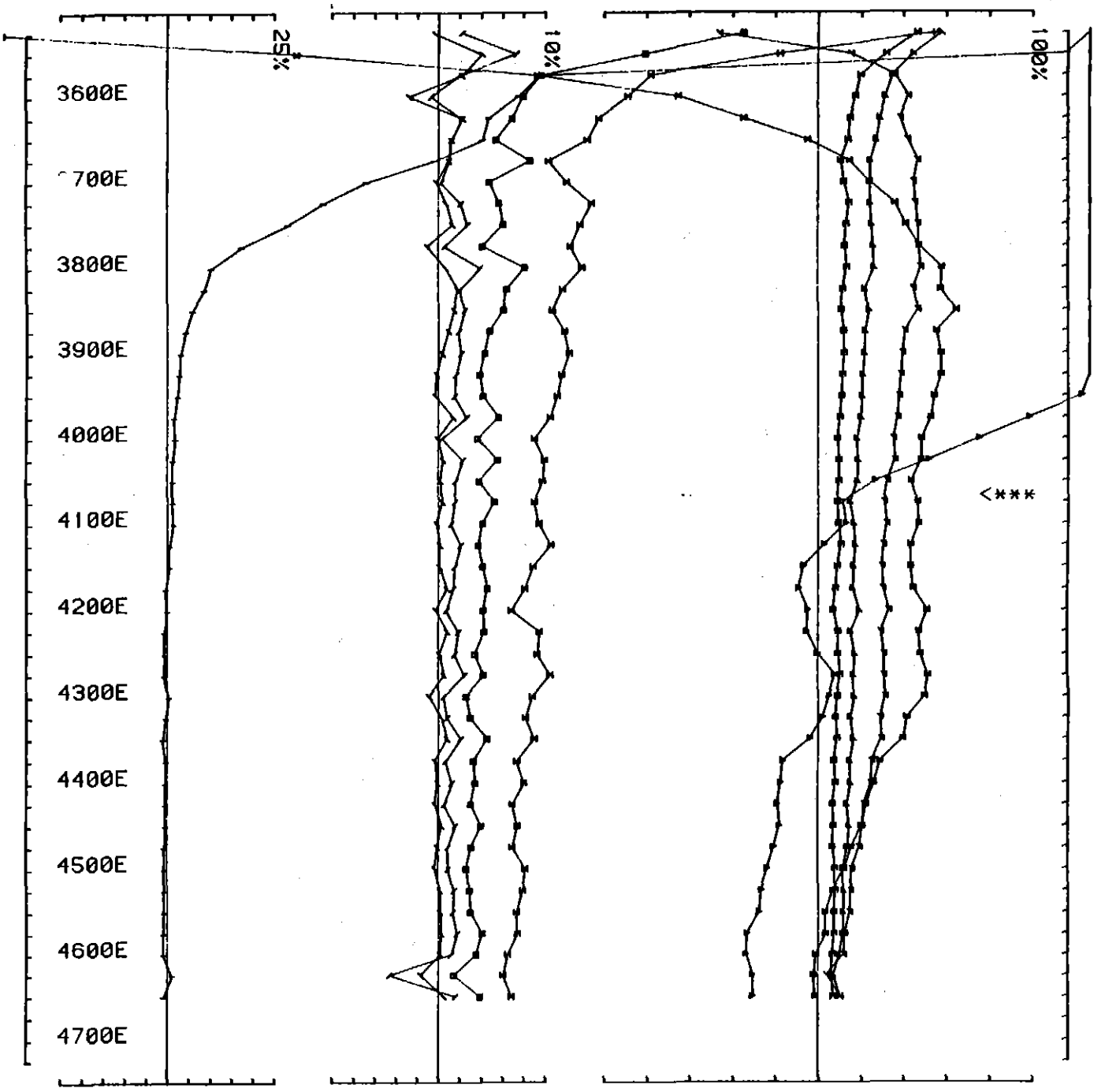
Loop 0004 line 2200N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 31/8/87

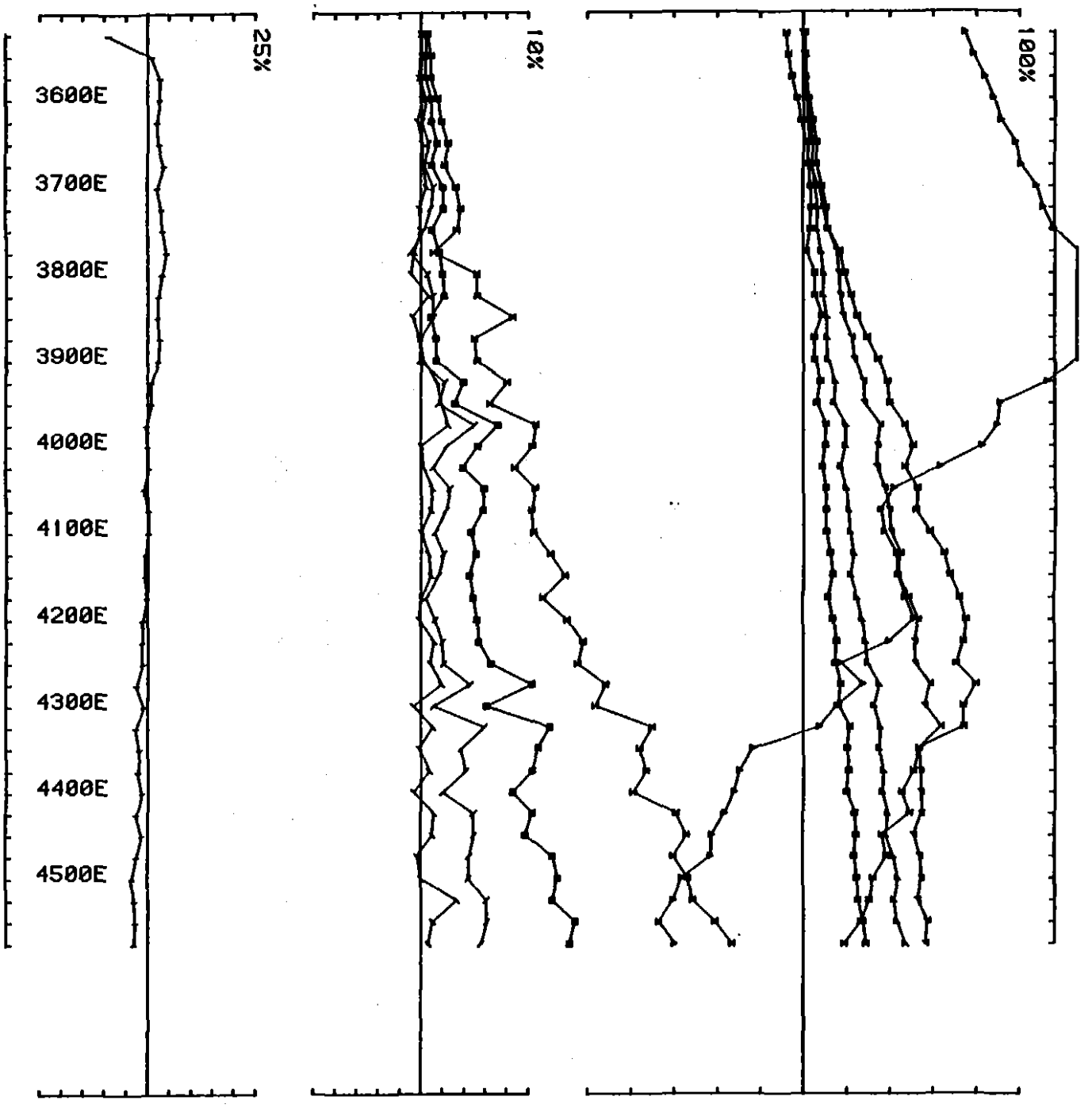
Loop 0004 line 2400N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt...CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

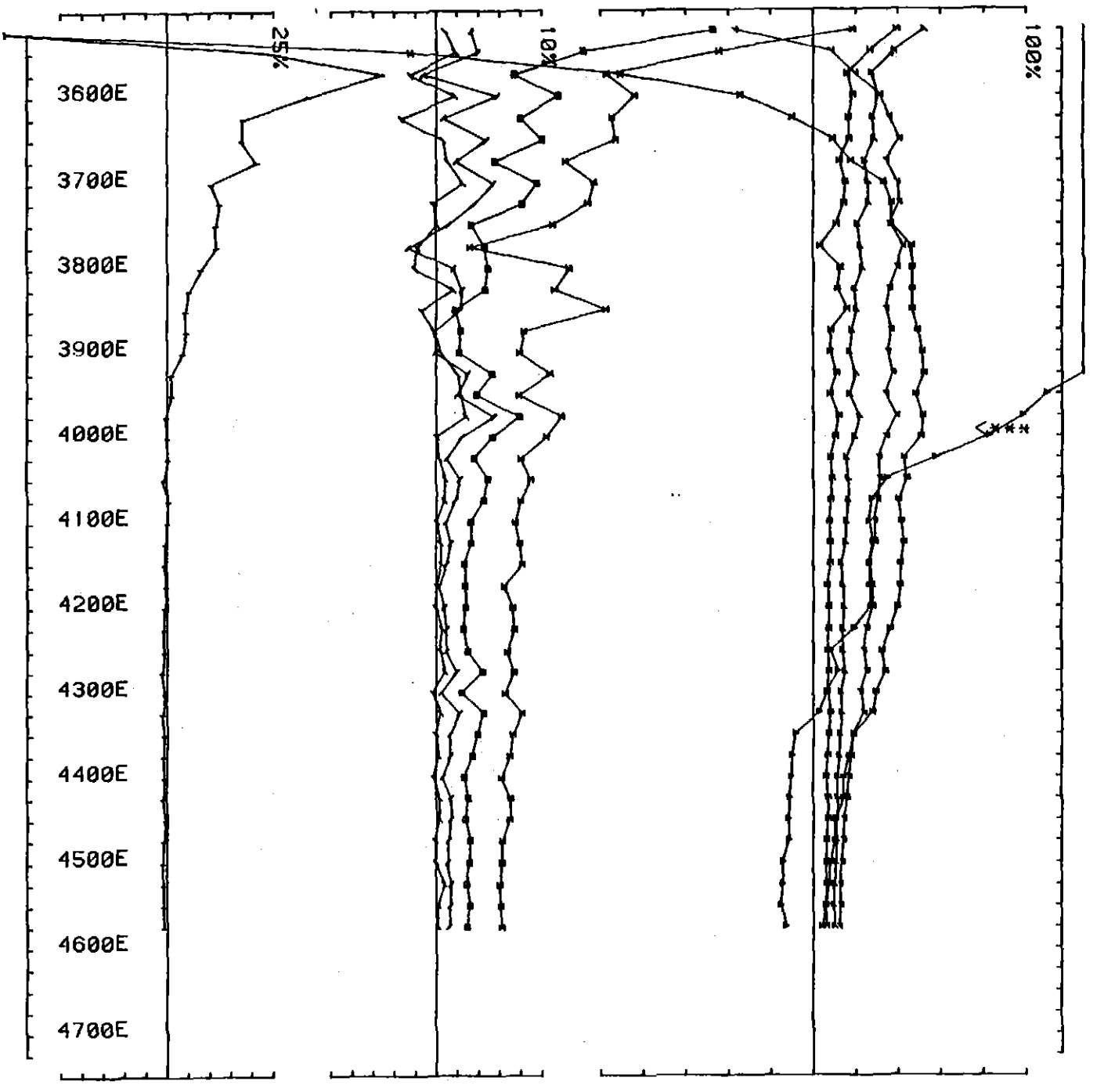
Loop 0004 line 2400N component Hz secondary field Ch 1 point norm. .



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 31/8/87

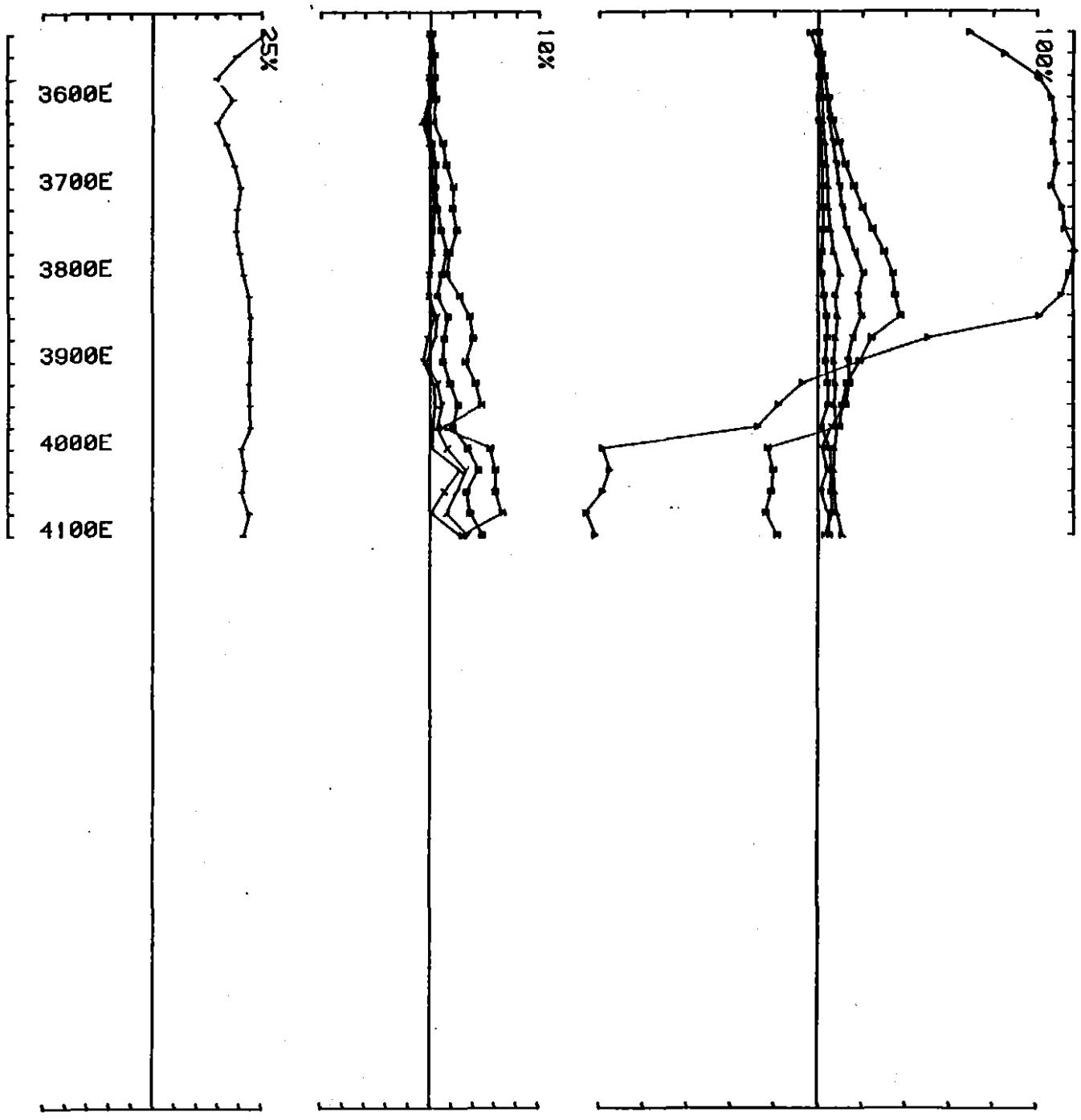
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

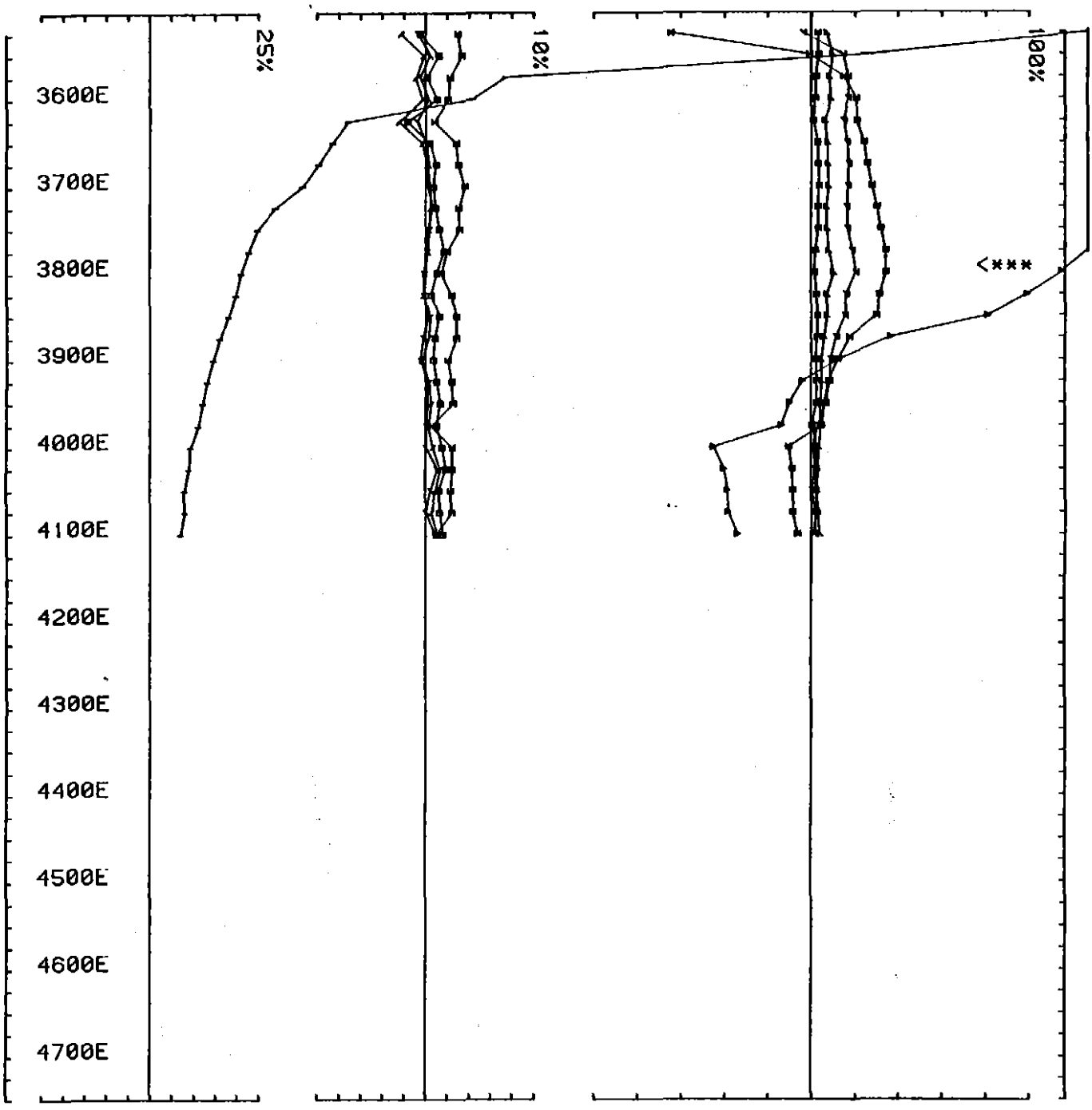
Loop 0004 line 2600N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 1/9/87

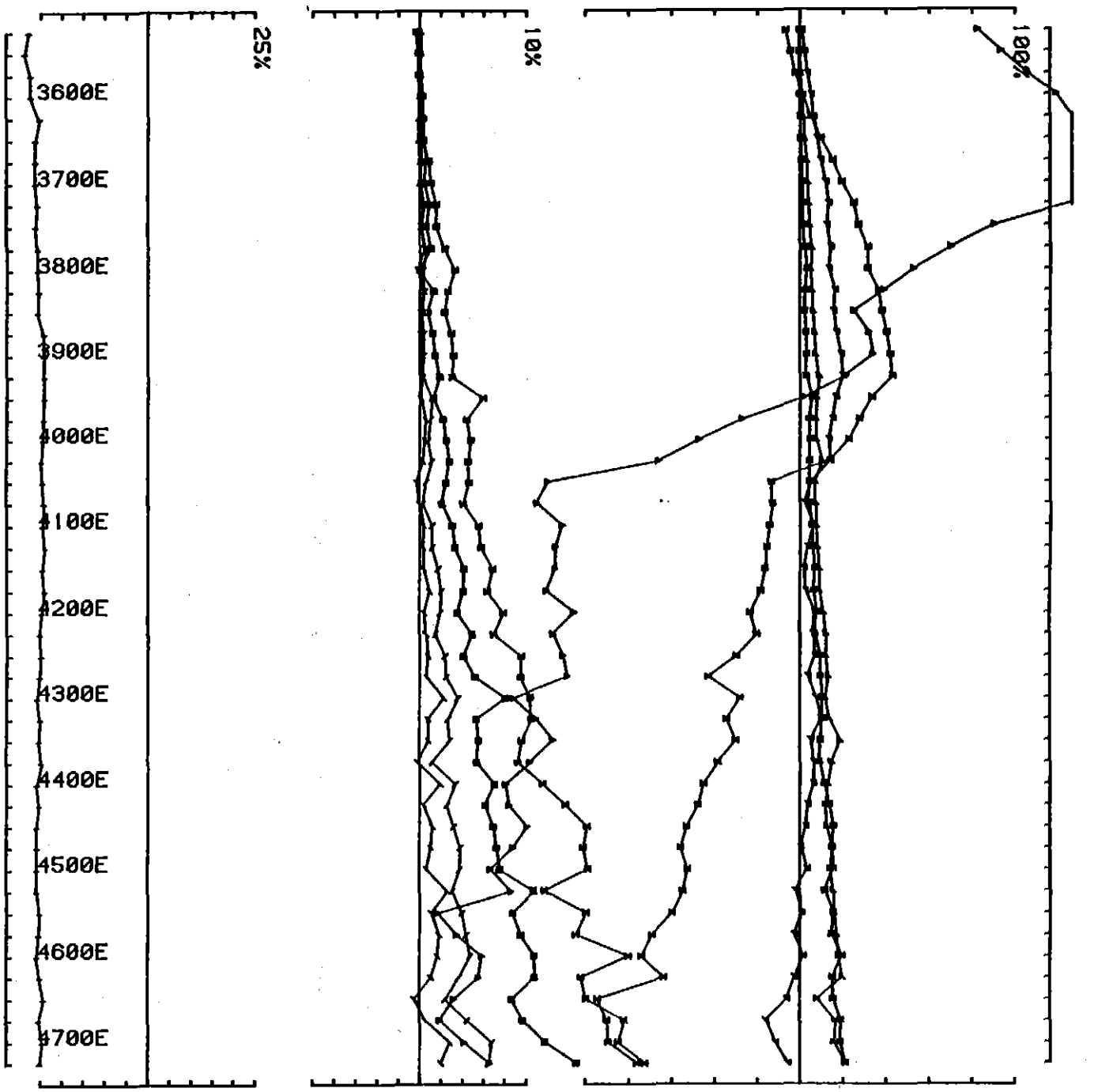
Loop 0005 line 1000N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 6/9/87

Loop 0005 line 1000N component Hz secondary field Ch 1 point norm.

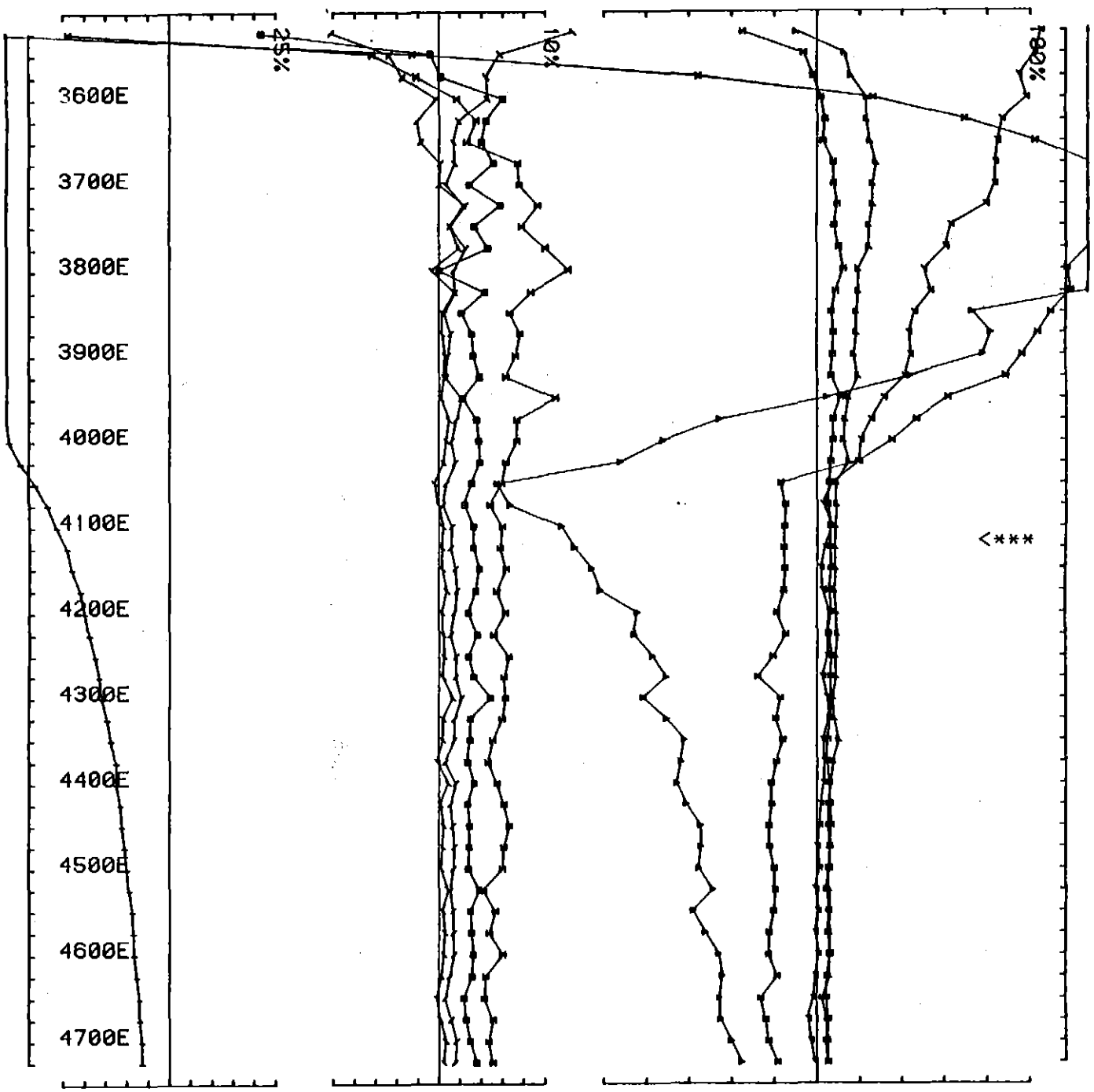


UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 2/9/87

Loop 0005 line 1200N component Hz secondary field Ch 1 contin. norm.

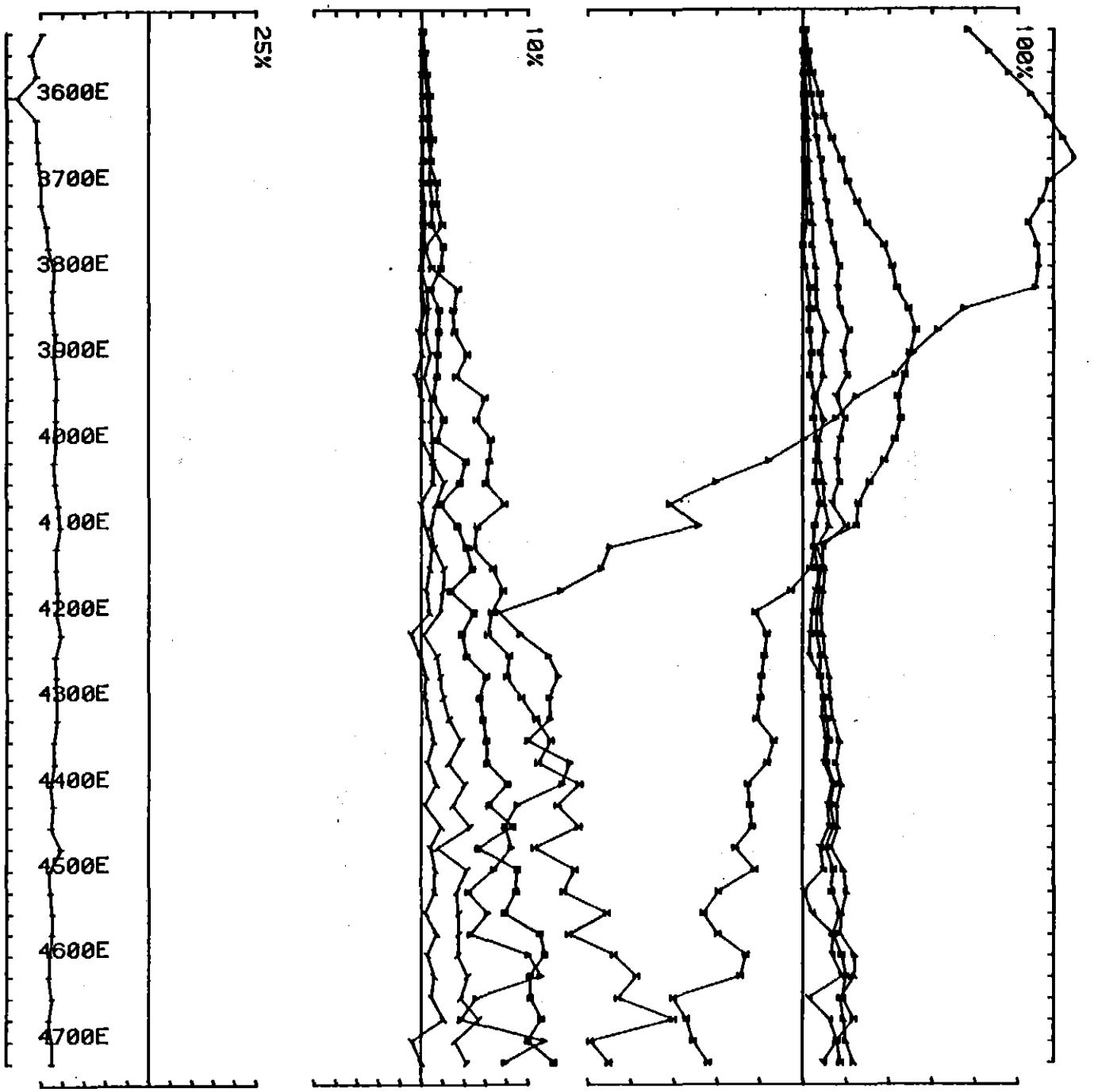
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UTEM SURVEY at Mt.. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

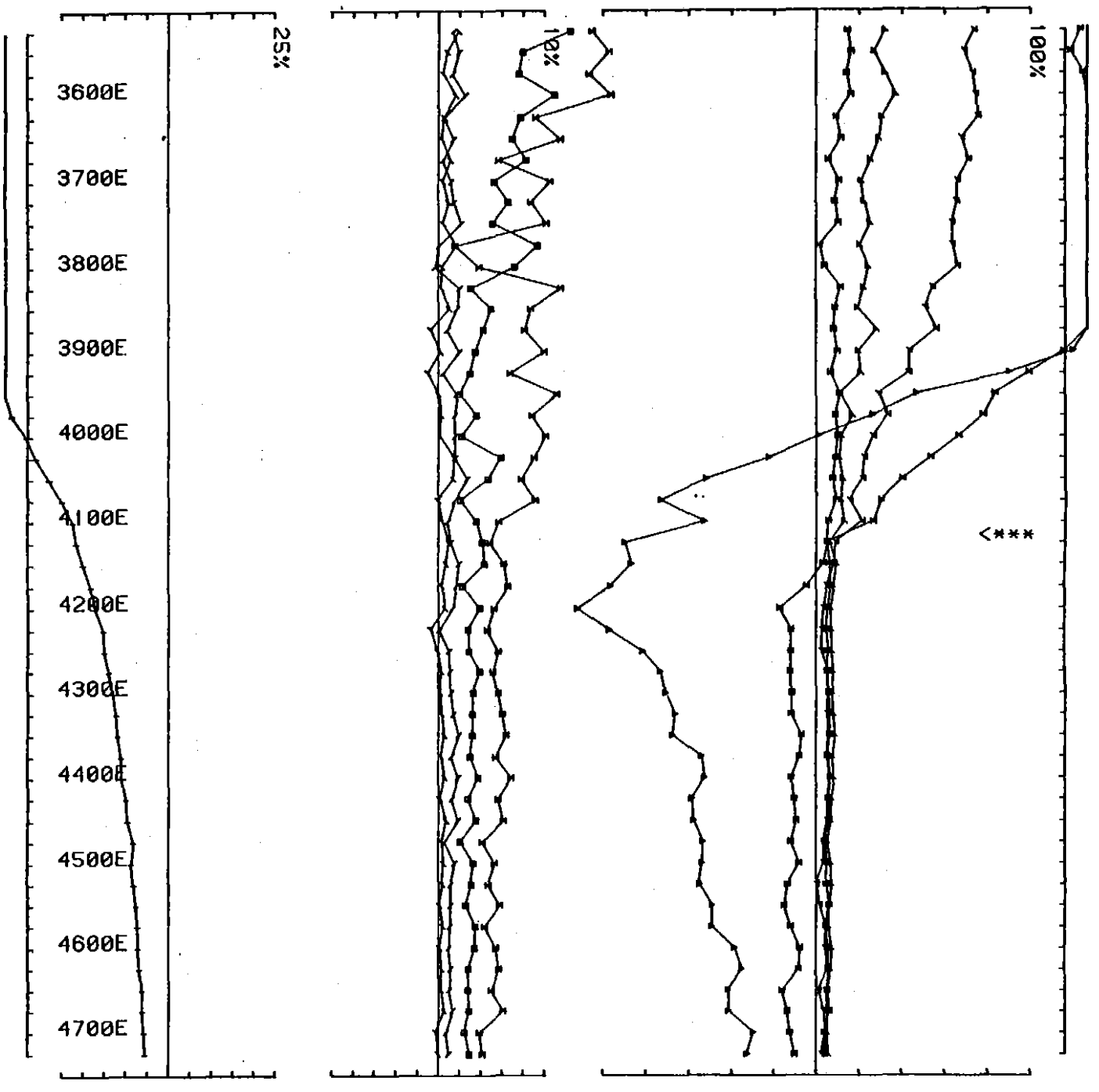
Loop 0005 line 1200N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 2/9/87

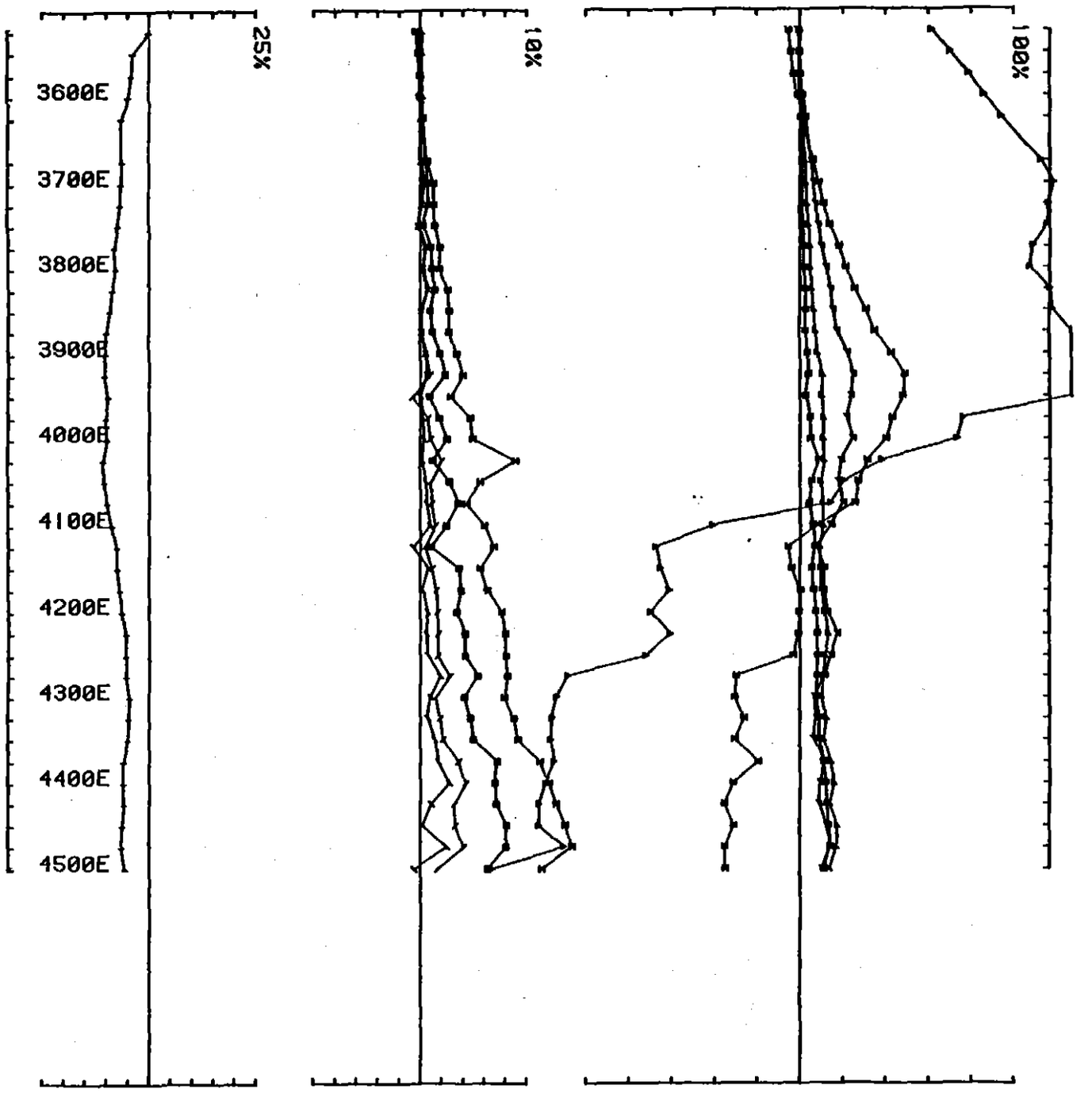
Loop 0005 line 1400N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

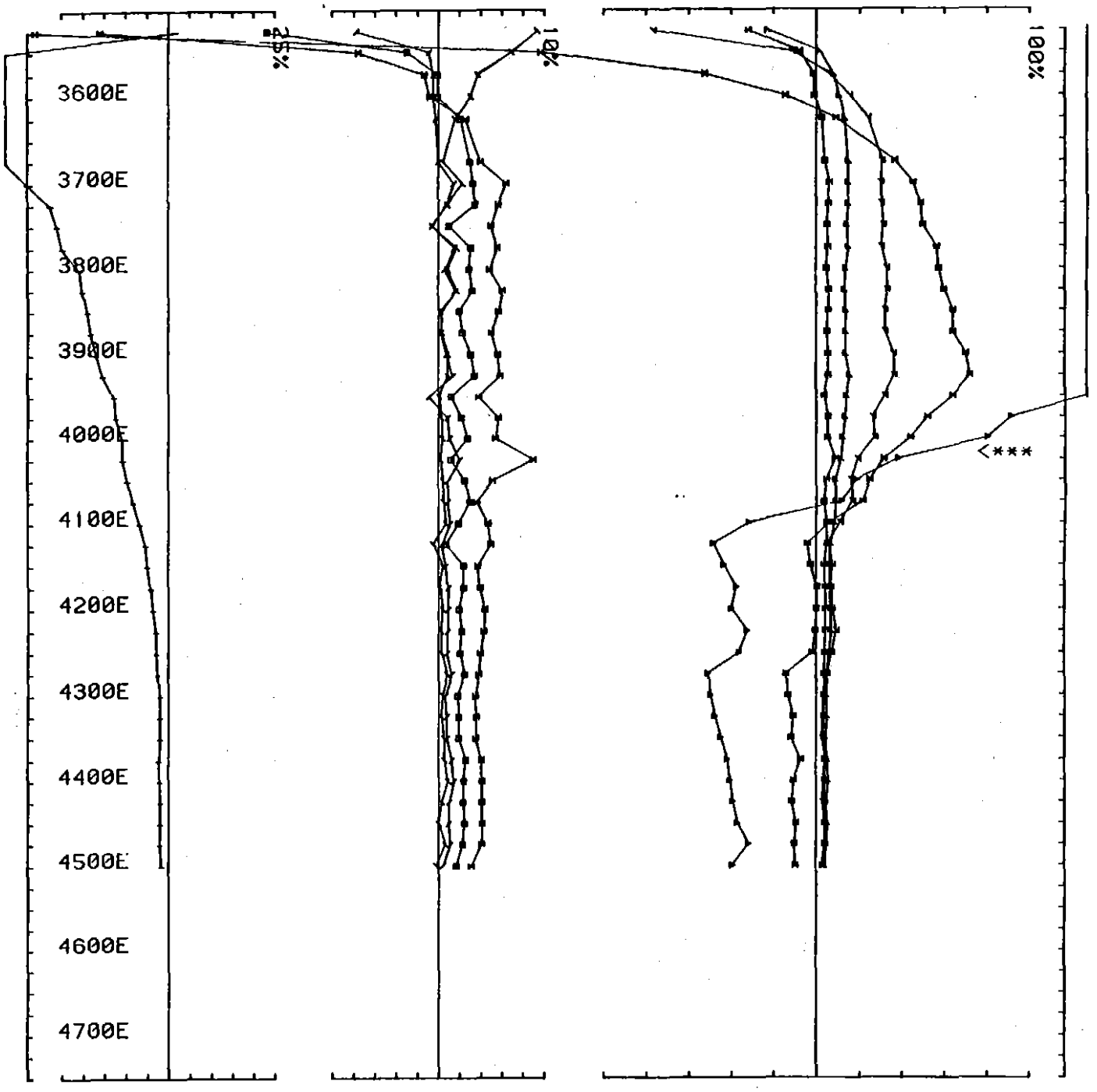
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

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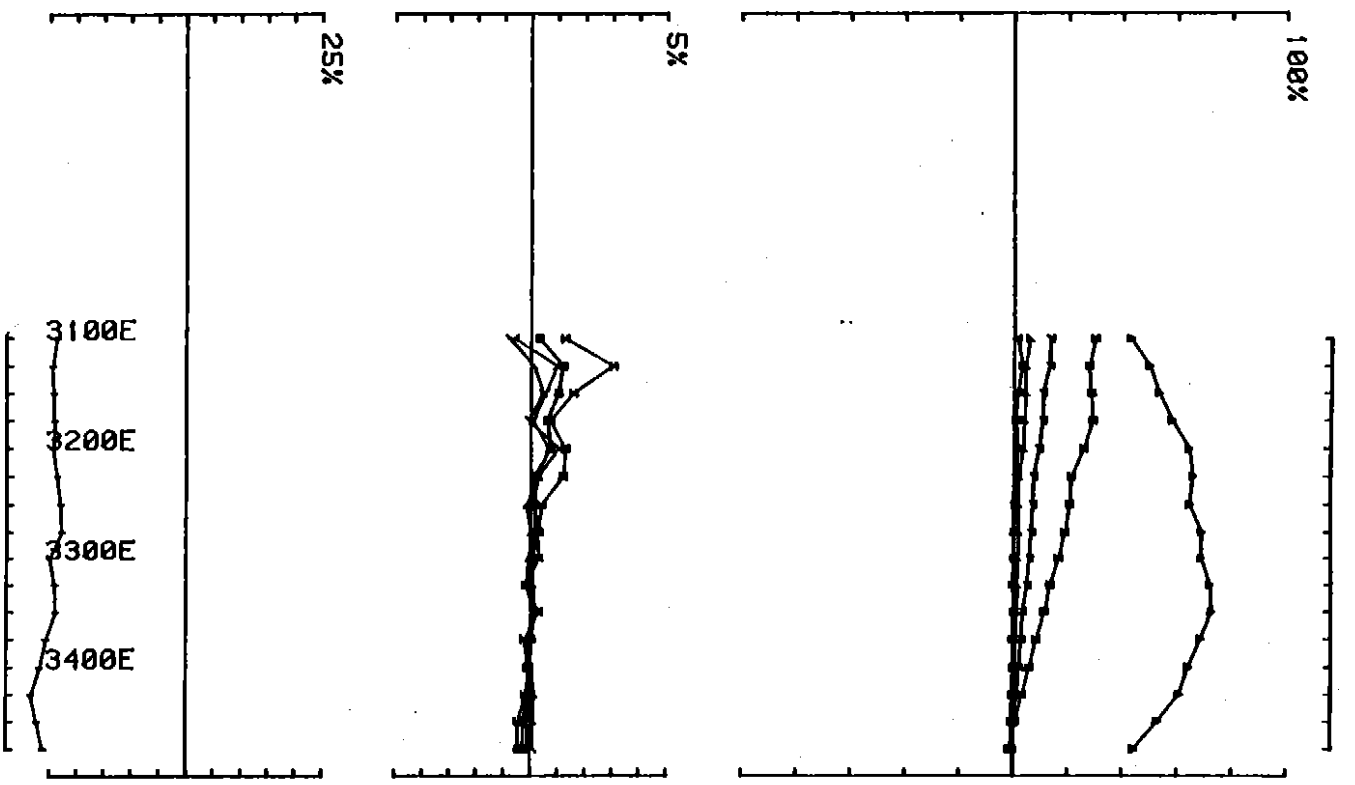
Loop 0005 line 1600N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

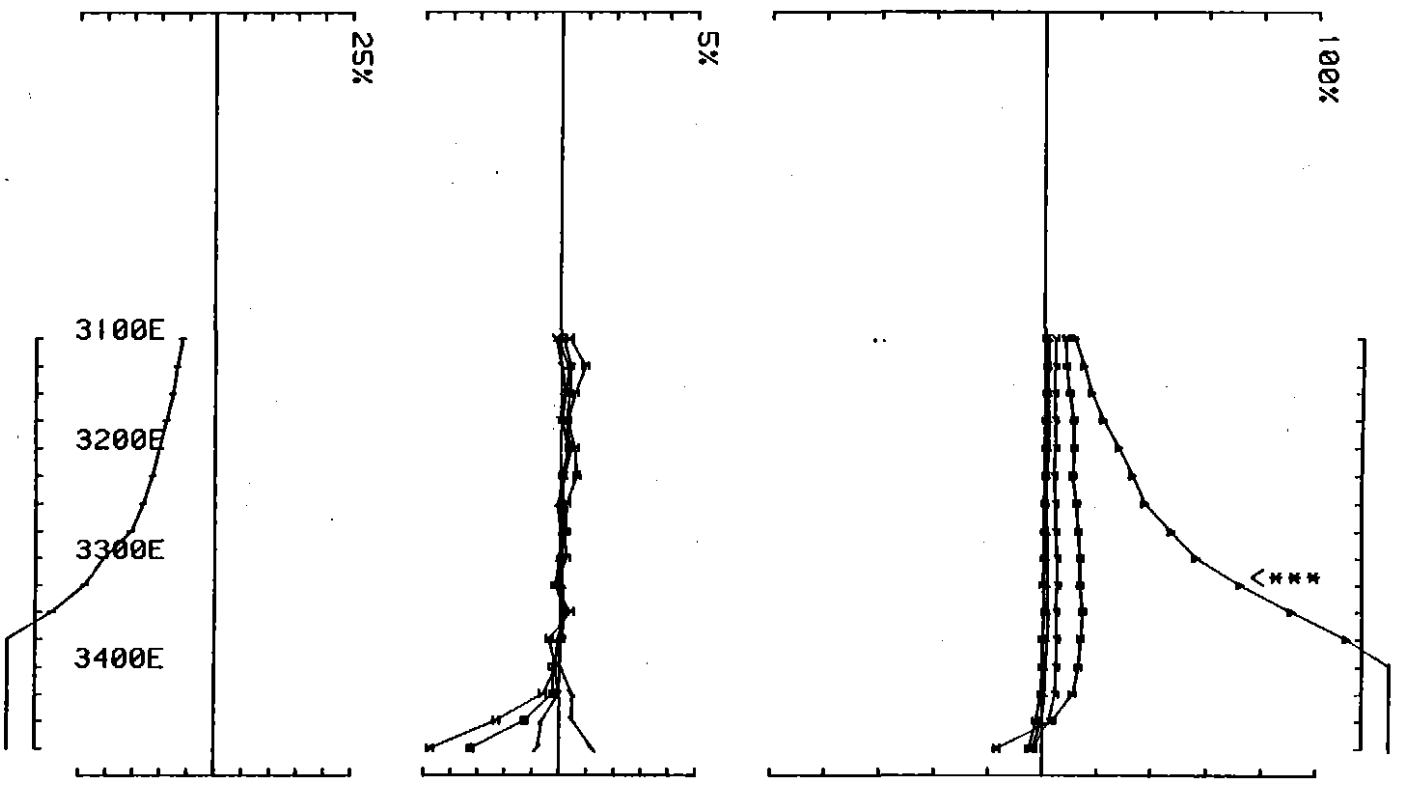
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

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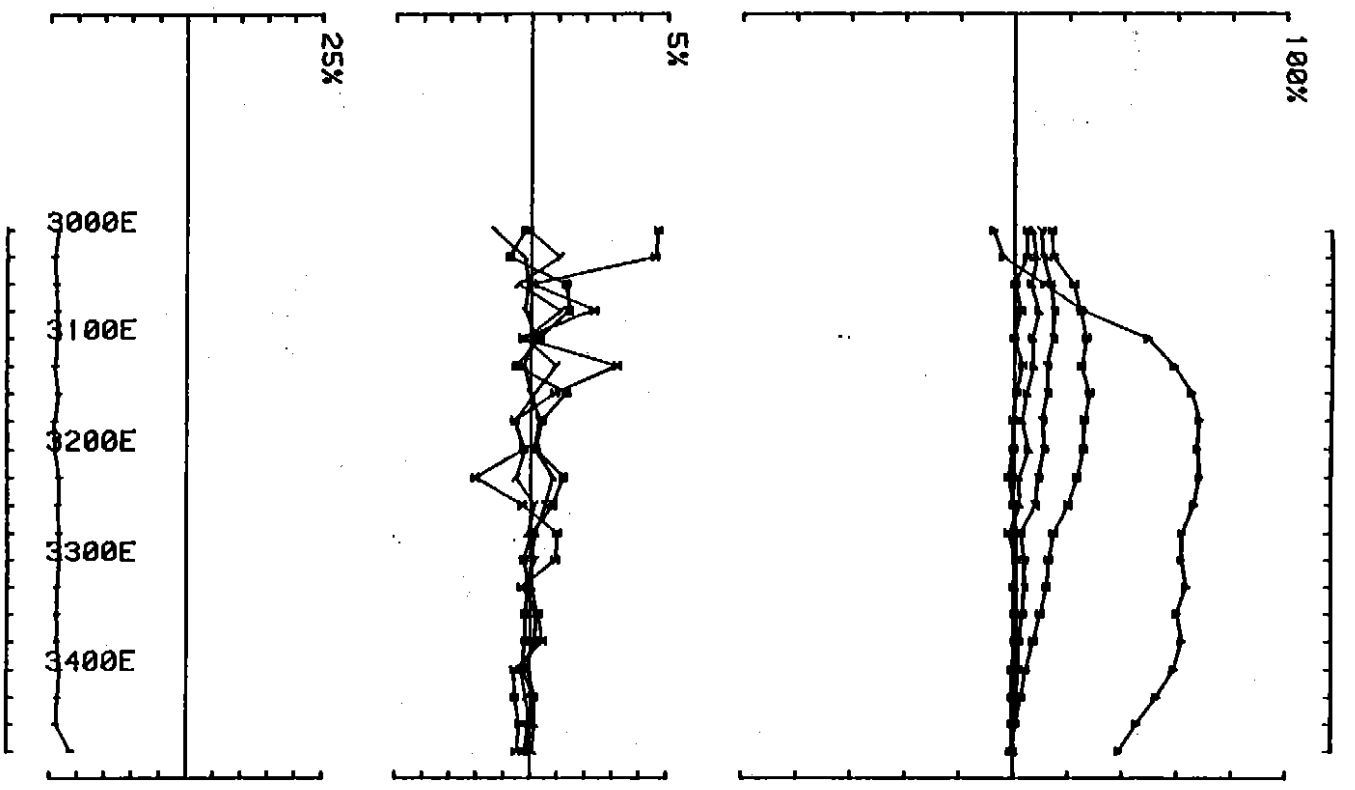
Loop 0006 line 1200N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26 230 6/9/87

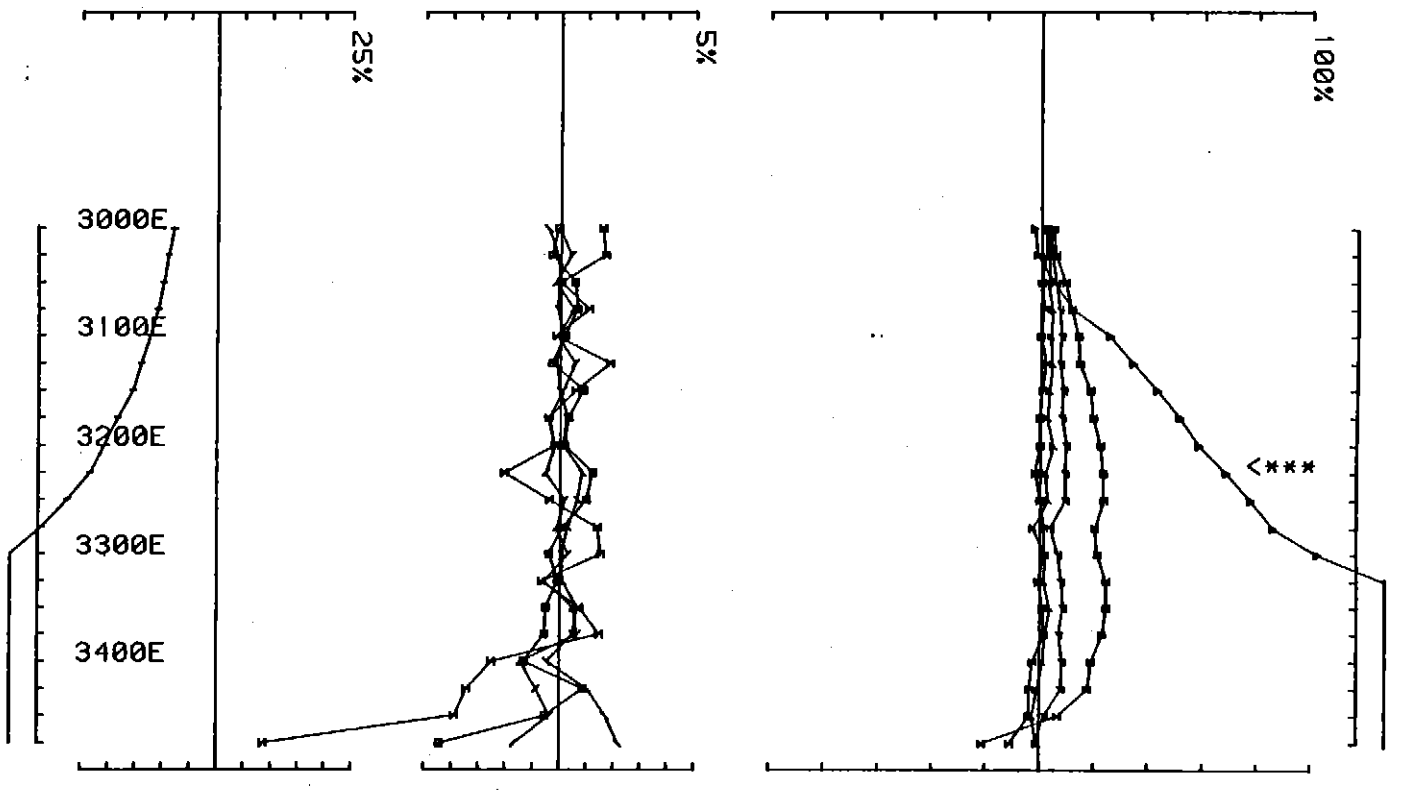
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

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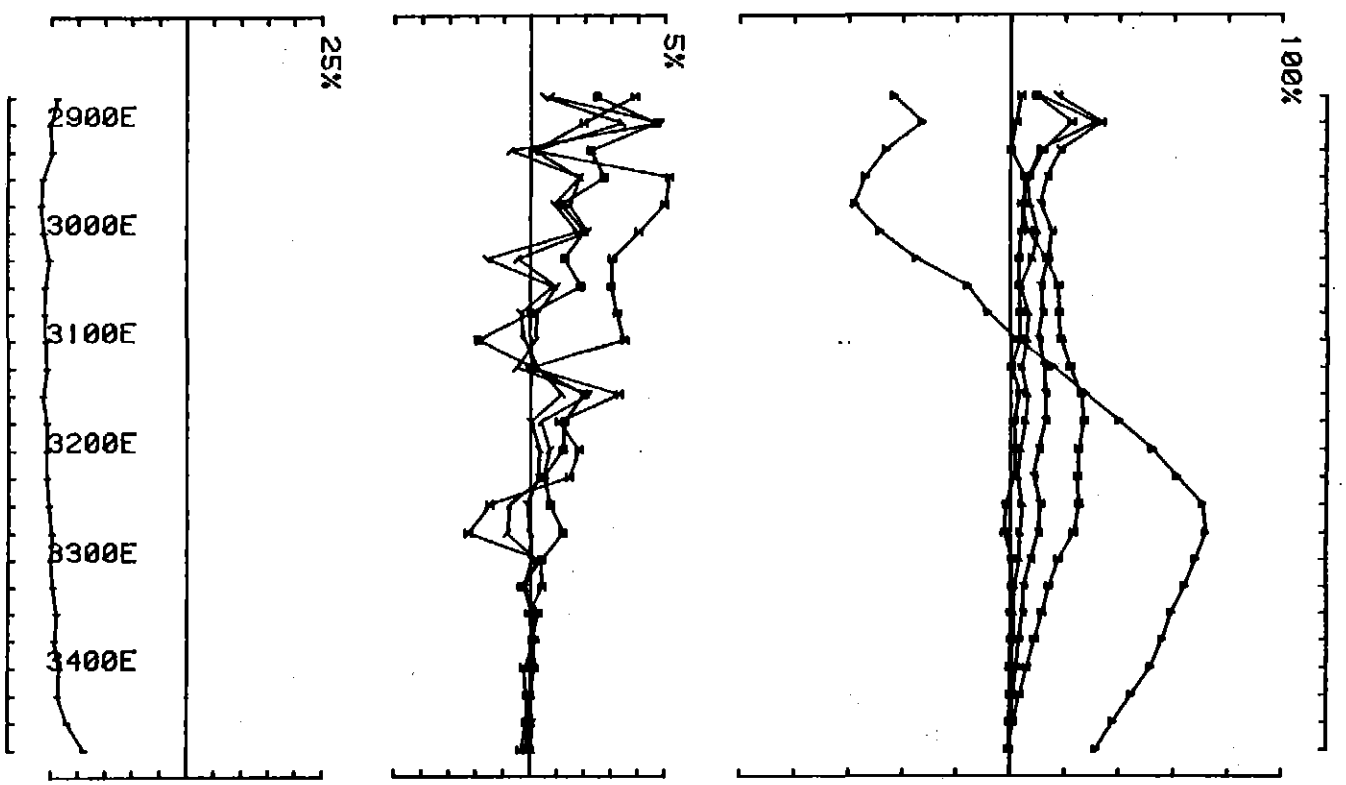
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UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

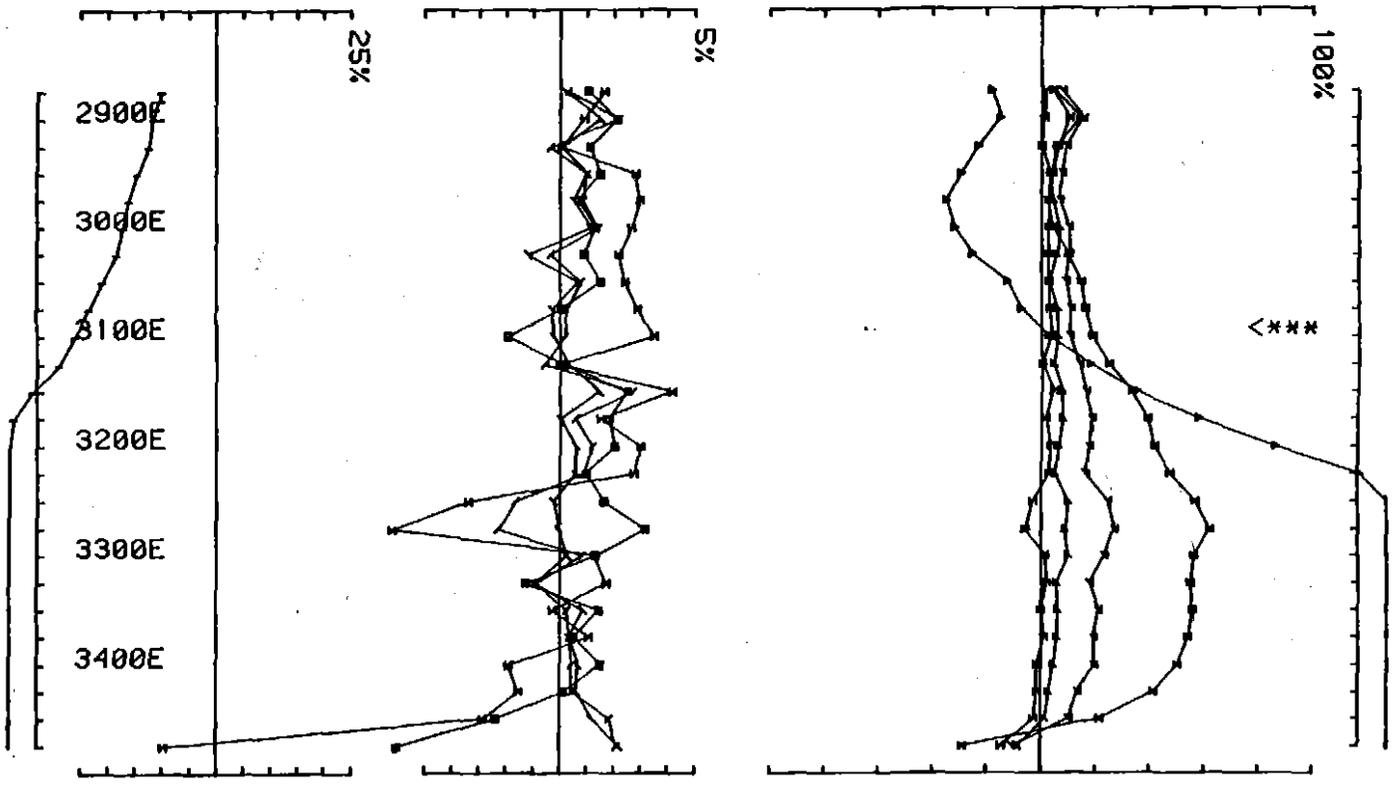
Loop 0006 line 1400N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO Job 8721 base freq (hz) 26.230 4/9/87

Loop 0006 line 1600N component Hz secondary field Ch 1 contin. norm. .



UTEM SURVEY at Mt. CHARTER for ABERFOYLE

conducted by PMM PAO job 8721 base freq (hz) 26.230 6/9/87

Loop 0006 line 1600N component Hz secondary field Ch 1 point norm.

238

599239

EXPLORATION LICENCE 15/73 HATFIELD

TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

JUNE 1986 - FEBRUARY 1988

Volume 2

Appendices 5-~~22~~ 24

89-3005

89-3005 VOL 2/4

89-3005

MINES
File Ref. EL 15/73
10 AUG 1989
Doc. Ref.
Action Officer
Letter 9-8-89 refers
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Date

Distribution

Aberfoyle - Hawthorn (1)
Aberfoyle - Burnie (1)
Department of Mines (1)

APPENDIX 5.

240

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599241

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

HOLE NO: MAC - 10
PAGE: 1 of 13
LOGGED: AMH
DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				TRICONE.								
4												
6				6.0								
8			BLACK SHALE	BLACK PREDOMINANTLY MASSIVE BLACK SHALE WITH SOME ZONES SHOWING VERY FAINT BEDDING.							SHALE UNWEATHERED FROM 6m MARKER.	
10												
12								13.2 BACA 45°				
14												
16												
18												
20								19.4 BACA 35°				
22						21.0 VUGGY DIRTY YELLOW-BROWN, PARTLY OXIDIZED CARB/ QTZ VEINS INFILLING FRACTURES CUTTING 15° FABRIC AT 30°. 2.3						
24												
26												
28								30.3. 200mm SHEAR RUBBLE (FAULT?) REMARKED WITH QTZ/CARB				
30												
32												
34												
36						37.0 2cm. 1-5mm WIDE QTZ/CARB VEINS PARALLEL						
38												
40												
42												

ABERFOYLE EXPLORATION

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

241

DIAMOND DRILL LOG

599242

HOLE NO: MAC-10
PAGE: 2 of 13
LOGGED: AMH
DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			BLACK SAND									
46				HQ / NQ 47.9								
48												
50								50.0 BACA. 40°				
52												
54												
56												
58												
60								59.4 B.A.CA. 45°				
62												
64												
66												
68						69.4		69.4			69.4 BASALT?	
70						ZONE OF BROKEN CORE ASSOCIATED WITH LIGHT CALCITE/QTZ VEINING 3		POSSIBLY A FAULT IN THIS ZONE				
72												
74												
76												
78												
80								80.2 B.A.CA. 45°				
82												
84												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

242

599243

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

HOLE NO: MAC-10

PAGE: 3 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86			BLACK SHALE.									
88												
90								90.0 B. ACA. 20°				
92						91.7 WISPY IRREGULAR 1-2mm WHITE CALCITE/QTZ VEINS	91.6 ONE SPECK OF RED-BROWN SOFT IN VEIN	91.7 "				
94												
96												
98												
100												
102												
104								103.6 B. ACA. 5°				
106												
108								DETRITAL INCL IN OVERLYING LAVA UNIT AT 20° TO C.A.				
110												
112												
114												
116				CALCITE/QTZ VEINED BROKEN CORE BUT INTERLOCKING TO BE SHEAR CONFORMABLE CONTACT			115.9 PATCHY MASSIVE CALCITE - FINE GRAINED TAN BROWN IN SOME LIMITED VESICLES AND FRACTURES IN BASALT	?? ON CONTACT 117.5, 70cm SOME SOFT PUSHY SHALE AND SOME BROKEN AND QTZ/CALCITE VEINING				
117.4						117.0	120.3					
118			BASALT LAVA. (PILLOW LAVA)	CHILL: PILLOW LAVA GREY-GREEN LAVA WITH CALCITE/QTZ FILLED SPHERICAL AMYGDULES TO 30mm. NUMEROUS BRECCIA PATCHES (PILLOW MARGINS) CEMENTED WITH BLACK MUDSTONE OR GREY CHERT.			TYPICAL PAINT-STRAW CALCITE-QTZ VEINING FOUND IN BASALT IE. VESICLE FILL, IRREGULAR SOMETIMES PATCHES, AND IRREGULAR VEINS.						
120												
122												
124												
126												

243

ABERFOYLE EXPLORATION

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

DIAMOND DRILL LOG

599244

HOLE NO: MAC-10
PAGE: 4 of 13
LOGGED: ADMH
DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128			BASALT PILLOW LAVA									PPM 396701 128.7 REP 117.4 - 256.4	
130						"	4						
132													
134													
136						137.0							
138						"	3						
140													
142													
144													
146						146.0							
148												149.5 - 170.0 [illegible]	
150						"	4					CRYSTAL?	
152													
154													
156													
158													
160													
162						"	4						
164													
166													
168													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

244

599245

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

HOLE NO: MAC-10

PAGE: 5 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170			BASALT PILLOW LAVA											
172				173.5 CLASTS (TO 10cm) OF BASALT IN DK GN MATRIX ARE PINK (PTD-SER?) AND. WITH "ILLITE" FLECKS.	173.5			4						
174				174.9	174.9	3								
176					PALE GREEN TO BUFF CRYPTOCRYST. (SERICITE) + MINOR FUCHSITE ASSOCIATED WITH LARGE QTZ/CALCITE VEIN									
178														
180														
182														
184								4						
186				186.8 SHALE RICH PATCH			185.5	3						
188														
190														
192				192.6			192.3	4						
194														
196														
198							199.3							
200								3						
202				202.3	202.3									
204			DACITE INTRUSIVE	PINK BROWN BRECCIA OF SUBROUNDED PARTLY ROTATED, 1mm - 10cm BASALT FRAGMENTS IN SILICIFIED MATRIX	PERVASIVE PINK-BROWN FLD-SIL ALT	3								
206			BASALT PILLOW LAVA	205.2 INTERPRETED TO BE A DEPOSITIONAL BRECCIA WHICH WAS SELECTIVELY ALTERED RELATIVE TO SURROUNDING BASALT.	205.2									
208								3						
210														

245

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599246

PROJECT : MACKINTOSH

PROSPECT : HELLYER TAILINGS DAM

HOLE NO : MK-10

PAGE : 6 of 12

LOGGED : AMH

DATE : APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			BASALT PILLOW LAVA			" 3						
214				215.4	215.1	215.1	215.1				Res. 396734. 221.7m; Rep. 215.1–225.1	
216			DACITE INTRUSIVE BRECCIA	SIMILAR TO 202.3 - 205.2 BUT MUCH MORE THOROUGHLY BRECCIATED AND ALTERED.	VERY STRONG WHITE 5 FLO/SI(?) ALT.	1/ SUGARY QTZ/CREAM CARBONATE (ANKERITE?) VEINS WITH TRACE OF BLUE-GREEN MTH, RED-BROWN STH AND GALENA.	← IN VEINS				IDENTITY BLUE GREEN MINERAL IN VEINS	
218												
220				(COULD BE BX QTZ PORPHYRY DYKE - SOME REMAINING APPEAR TO HAVE QTZ. PHENOCRYSTS.)								
222												
224				225.1	225.1	225.1	225.1					
226			BASALT LAVA	PROBABLY SUBSEA LAVA — NO CHERT / SHALE SEDIMENTS BELOW 225.1		V						
228						" 2						
230						(FEW VESICLES)						
232												
234												
236				237.4	237.4	237.4		F				
238				PINK ALT. BASALT LAVA BELOW FAULT. SIMILAR TO 202.3 - 205.2	STRONG PERVASIVE 4 PINK FLO/SI ALT.	QUARTZ/CALCITE VEINING, 2 PATCHES		• 237.7, MODERATELY SILICIFIED BASALT + ORTHOCLASE PUG.			DEFINITE FAULT	
240				240.4	240.4	240.4						
242						PAINT SPLASH VEINING 3-4 DISTINCT PURPLE (MANGANESE) TINT TO CARBONATE IN THIS INTERVAL						
244												
246												
248												
250				250.8 TENSELY SPOTTED WITH PALE YELLOW-GREEN 1mm ? PHENOCRYSTS. (EPIDOTE?)		3-4						
252				↓								

PAUL

ABERFOYLE EXPLORATION

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

248

DIAMOND DRILL LOG

599247

HOLE NO: MAC-10

PAGE: 7 of 13

LOGGED: A.M.H.

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
256			BASALT LAVA											
258														
260				VERY SHARP CONTACT			"	3-4						
260.7					260.7		260.7							
262			FP. ANDESITE LAVA, LAVA BRECCIA	PINK TO YELLOW-GREEN MASSIVE, TO WEAKLY BRECCIATED, NON-FP. ANDESITE LAVA	PERVASIVE PINK FD-SI ALT WITH VEINLET STYLE YELLOW-GREEN ILLITE ALT.	3	11 SWD 0.5-20mm WIDE CALCITE-QUARTZ VEINS WITH SOME CHLORITE WISPY VEINLETS	2-3						
262.7				PINK TO YELLOW GREEN BRECCIATED LAVA; MOSTLY REMINANT WITH FEW 1-30cm CLASTS GRADING INTO TYPICAL MT CHARLES STYLE FELDSPAR-PHYRIC ANDESITE LAVA BRECCIA										
264														
266														
268														
270							(VEIN STYLE IN MASSIVE FP.A.L)							
271.0										f. 271.0-271.6, 273.3-273.9 2cm WIDE, SUB-PARALLEL TO C.A. SILICIFIC ZONES. ASSOCIATED VEINING IN FAULT ZONE.				
272							MUCH VEINING ABOVE f→							
274						3								
275.9														
274							STABLE, VERY THIN (<1mm) WHITE WISPY QUARTZ-CALCITE VEINS	1-2						
276							(VEIN STYLE IN BRECC. FP.A.L)							
278														
280														
281.7				FLOW BANDED FP. ANDESITE LAVA. STRONGLY CONTRASTING TEXTURE. VERY SMALL (<1mm) FELDSPARS PHENOCRYSTS.	281.3									
282						2								
284														
286.2					286.2									
286				UNUSUAL "INCIPIENTLY BRECCIATED TEXTURE OR "CRACKLE TEXTURE" SHATTERED FP. LAVA WITH CLASTS SURROUNDED BY VEINLETS OF ? EXTENSIVE PINK TO WHITE SILICIFICATION / FENOCRYSTALLIZATION		5								
288														
290														
292														
294						1								

ABERFOYLE EXPLORATION

PROJECT : MACKINTOSH

PROSPECT: HELMER TAKINIS DOME

247

DIAMOND DRILL LOG

599248

HOLE NO: MAC-10

PAGE: 8 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296			fp. ANDESITE LAVA; LAVA BRECCIA	296.2 PORE GRAINED 2+1% RAT LOSS SHOW SHARP CHANGE AT 296.2 (10cm SAMPLE)	" 5	"	1						
298													
300												PET: 39-705; 300.5, REF 296.2 - 306.6 LEUCO ANDESITE BRECCIA. PHENOCRYSTS OF ALBITISED PLAGIOCLASE FELSIC GROUNDMASS. QTZ - ALB - SERICITE AND SERICITE ALT.	
302													
304													
306				306.9 GRADATIONAL CHANGE TO MASSIVE fp. A LAVA. TEXTURE - MT CHARLES TYPE BRECCIA	306.6 " 3	306 "	1					306 - 307.2 EVIDENCE THAT "BRECCIA" TEXTURE IS ALTERATION ENHANCED.	
308						M FOR 266.7 - 271.0	2						
310				310.0					307.1; 10cm, HEMATITIC FUS.				
312			fp. ANDESITE LAVA.	DARK GREY - GREEN STRONGLY FELDSPAR PHYRIC ANDESITE LAVA. MASSIVE WITH A FEW CLAST DOMINANT BRECCIA ZONES.	PATCHES (10cm - 2cm) of STRONG RUSTY - YELLOW - GREEN SERICITE(?) ALT. WITH 1mm DARK GREEN PYROXENE SEDS								
314													
316													
318													
320						"	2						
322													
324													
326													
328													
330													
332					332.2 "UNALTERED" TO 356.8.								
334													
336						"	2						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : MACKINTOSH

PROSPECT: HELMYAR TAILINGS DAM

248

599249

HOLE NO: MAC 10

PAGE: 9 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338			PP. ANDESITE LAVA.										
340													
342													
344													
346													
348													
350													
352													
354				CONTACT MARKED BY LIGHT GREY SILICIFICATION AND BLACK CHLORITE									
356			356.8			356.8							
358			BASALT LAVA	GREEN - GREY MASSIVE BASALT WITH VERY FEW VESICLES AND LITTLE VEINING		UPPER SECTION OF BASALT VERY WEAKLY VEINED IRREGULAR PATCHES OF SILICA/CALCITE WITH CORES OF PINK FELDSPAR?) IN INTERVAL 366.0 - 369.0 (ASSOCIATED WITH CHLORITE)	1						
360				AT 1.2m INTERVALS ARE 10-20cm CHLORITE PATCHES COMMONLY WITH A CORE OF LIGHT GREEN CLEAR M A MM OR TO 8MM PHENOCRYSTS (PILLOW RIMS?)									
362													
364													
366													
368													
370													
372													
374													
376			376.0	MORE VESICULAR AND VEINED SECTION WITH NO CHLORITE / CLEAR PATCHES.		376.3 FAINT SPLASH VEINING	3					377.1 [illegible] DIFFUSE, RUSTY SPLASH MIN + FINE FLOOD IN VEIN.	
378													

249

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599250

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

HOLE NO: MAC 10

PAGE: 10 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
380						"	3						
382				5cm CARBONATE VEIN ON CONTACT									
				382.8	382.8	382.8							
384			FP. ANDESITE LAVA BRECCIA	GREY TO YELLOW-GREEN LAVA BRECCIA CREAM. PINK ANGULAR FRAGMENTS IN GREY SILICEOUS MATRIX. PATCHES OF YELLOW-GREEN SERICITE ALT. FELDSPARS ALT. TO YELLOW-GREEN ILLITE (CHLORITE)	PATCHY PERVASIVE KHAKI-YELLOW-GREEN SERICITE ALT. PATCHES → CONTINUOUS ALT. REMAINING FELDSPATHIC PHENOCRYSTS ALTERED TO YELLOW-GREEN ILLITE THIN TO DARK INTENSE GREEN PERVASIVE	3	THIN QTZ/CALCITE VEIN	1				CONTACT IN DETAIL OF VEINING IN DARK AND ANDESITE	
386				388.0		5cm PATCHES TO 1cm							
388			FP ANDESITE LAVA.	LAVA M ARGUE (382.8 - 388.0) BUT PREDOMINANTLY MASSIVE, NO DISTINCTLY FLOW BANDING BELOW HORN. THIN UNIT IS WEAKLY VESICULAR								382.8 - 388.0 ALTERATION AND INCIPIENT "BRECCIATION"	
390													
392													
394													
396													
398													
400													
402													
404													
406													
408													
410													
412													
414													
416													
418													
420													

" 3

" 1

" 3

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599251

PROJECT : MACKINTOSH

PROSPECT: HEUGEN TAKING DAM

250

HOLE NO: MAC 10
PAGE: 11 of 13
LOGGED: AmH
DATE: April 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
432			fp. Andesitic Lava.		"	"	3						
434						"	1						
436													
438													
440				CONFORMABLE, SHARP, INTERPENETRATIVE CONTACTS WITH FRAGMENTS OF SHALE / ANDESITE INCLUSIONS/OUTSIDE CONTACTS CHLORITIC	"	"	3						
						"	1						
441.2					441.2	441.2							
442			Micaceous sandstone + Black shale	Sections of massive black shale (2 cms), finely laminated black shale and mica sandstone and breccia of angular 1-5 mm shale fragments in mica sandstone matrix		Irregular patchy, thin with veinlets of calcite/quartz. Patchy - evidence of hydraulic fracturing - splintery shale fragments in calcite/quartz matrix		Occasional quartz blebs of fine grained pyrite (typical of BC shale).	449.3 BACA 71° 446.2 BACA 50° 447.9 BACA 65° 449.0 BACA 80°			Sediment band contains dendritic (originally quenched?) andesite fragments.	
444													
446													
448													
450					450.1	450.1							
450.1			fp Andesite lava breccia	Grey feldspar-phyric andesitic lava. Weakly brecciated. Gradual change (2m) to a lava with 5mm chlorite filled vesicles and a few 8mm qtz/carb vesicles	(Grey ms - pcc) Silicified?	Parallel clots, < 5mm calcite veins (≈ 45° CA) with wispy offshoots	2					Breccia zone 450.1	
452													
454							2						
456													
458													
460													
462													

ABERFOYLE EXPLORATION

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

251

DIAMOND DRILL LOG

599252

HOLE NO: MAC 10
PAGE: 12 of 13
LOGGED: AMH
DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
464			PP. ANDESITE LAVA BRECCIA.		(SEE ALT FROM 475.8)	"	2						
466				VERY ANGULAR ELONGATE WISPY BLACK SHALE FRAGMENTS IN MICA SANDSTONE MATRIX (WET SEDIMENT SLUMPING)									
468				SHARP INTER-PENETRATIVE CONTACT									
470				475.8	475.8	475.8			F 471.4, H60mm 25°CA; CARBONATE 477.6 (MINOR FAULT?)				
472				476.4	476.4	476.4 NO VEIN							
474			PP. ANDESITE LAVA BRECCIA		PINK GRAIN SUCROSIC STATIC CONTACT (SEAT OF TOURMALINE) LOWER CONTACT		2						
476				480.2	480.2	480.2							
478			BLACK SHALE/ MICA SANDSTONE	BROKEN ON CONTACT		CALCITE/QTZ, // SHALE	1						
480				SEQUENCE OF (i) FINELY LAMINATED BLACK SHALE AND MICA SANDSTONE (ii) MASSIVE BLACK SHALE (iii) MICA SANDSTONE WITH VERY SUBTLE LAMINATIONS (iv) BRECCIA OF SHALE FRAGMENTS IN SANDSTONE MATRIX					486.5 BACA 40°				
482									489.9 BACA 40°				
484									492.7 BACA 30°				
486						"	1						
488													
490													
492													
494													
496				MEDIUM LAPILLI VOLCANICLASTIC OF WHITE ASH (CRYSTALLINE) VOLCANIC FRAGMENTS AND SHALE FRAGMENTS									
498				499.3									
500				500.2 A-Y contact								ALTERATION OF VOLC FROM PRE-DEFORMATION?	
502			BLACK SHALE MICA SANDSTONE						504.6 BACA 45°				
504													

202

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599253

PROJECT : MACKINTOSH

PROSPECT: HELLYER TAILINGS DAM

HOLE NO: MAC 40

PAGE: 13 of 13

LOGGED: AMH

DATE: APRIL 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
506						"	'						
508				508.5 BLACK SHALE TO EOH.					508.0 DACA 45°				
510													
512													
514													
516						"	'						
518													
520													
522													
524									? 524; 3cm of BLACK CLAY; 10° to C.A? INCLUDES MINOR CHLORITE BX REMARKED WITH QTZ+CARB.				
526													
528						"	'						
530			529.6 EOH										

SAMPLE NO : 396701
LOCATION : MAC-10/128.7
REPRESENTATIVE OF : 117.4-225.1
REMARKS : Typical pillow basalt.

SAMPLE NO : 396702
LOCATION : MAC-10/160.4
REPRESENTATIVE OF : 149.5-170.0
REMARKS : Is this basalt epidote altered.

SAMPLE NO : 396703
LOCATION : MAC-10/202.5
REPRESENTATIVE OF : 202.3-205.2
REMARKS : Are clasts in this breccia basaltic? What is the composition of the matrix and alteration mineralogy of the clasts?

SAMPLE NO : 396704
LOCATION : MAC-10/221.7
REPRESENTATIVE OF : 215.1-225.1
REMARKS : Looks similar to 202.3-205.2 but some fragments appear to have quartz phenocrysts. Could be an intrusive.

SAMPLE NO : 396705
LOCATION : MAC-10/300.5
REPRESENTATIVE OF : 286.2-300.6 306.6
REMARKS : Originally a feldsparphyric andesite lava. How has it been altered? * volcaniclastic?

SAMPLE NO : 396706
LOCATION : MAC-10/327.1
REPRESENTATIVE OF : Patches of alteration in 310.0-332.2
REMARKS : What is the alteration mineralogy? Unaltered rock represented by next sample (396707).

SAMPLE NO : 396707
LOCATION : MAC-10/338.5
REPRESENTATIVE OF : Unaltered sections, 310.0-356.8
REMARKS : Unaltered feldsparphyric andesite lava.

SAMPLE NO : 396708
LOCATION : MAC-10/364.1
REPRESENTATIVE OF : 356.8-376.0 (non vesicuar section)
REMARKS : The stratigraphic "Lower basalt". Contrast with upper basalt (396701)

SAMPLE NO : 396709
LOCATION : MAC-10/379.2
REPRESENTATIVE OF : 376.0-382.8
REMARKS : The stratigraphic "Lower basalt"; more vesicular and carbonate veined than 396708.

SAMPLE NO : 396710
LOCATION : MAC-10/399.1
REPRESENTATIVE OF : Alteration within 388.0-441.2
REMARKS : Andesite below lower basalt. Alteration similar to 321.7 (incipient Quellite).
321.1

SAMPLE NO : 396711
LOCATION : MAC-10/407.4
REPRESENTATIVE OF : Unaltered sections within 388.0-441.2
REMARKS : Massive feldsparphyric andesite. Compare with altered sample (396710). Is this lava vesicular?

SAMPLE NO : 396712
LOCATION : MAC-10/431.2
REPRESENTATIVE OF : Flow banded section of 388.0-441.2, below 408.0
REMARKS : Flow banded feldsparphyric andesite.

SAMPLE NO : 396713
LOCATION : MAC-10/447.6
REPRESENTATIVE OF : Laminated section within 441.2-450.1
REMARKS : Laminated black shale/micaceous sandstone.

SAMPLE NO : 396714
LOCATION : MAC-10/457.4
REPRESENTATIVE OF : 450.1-475.8, 476.4-480.2
REMARKS : Feldsparphyric andesite - compare alteration with that in sample 399.1 (396710).

SAMPLE NO	: 396715
LOCATION	: MAC-10/499.8
REPRESENTATIVE OF	: 499.3-500.2
REMARKS	: Polymict volcaniclastic within basal sediments.

SAMPLE NO	: 396716
LOCATION	: MAC-10/504.4
REPRESENTATIVE OF	: 480.2-529.6
REMARKS	: Black Shale.

SAMPLE NO	: 396717
LOCATION	: MAC-10/519.1
REPRESENTATIVE OF	: 480.2-529.6
REMARKS	: Mica sandstone.

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

FAX. 08-363 1820

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

2nd June, 1987

REPORT CMS 87/5/8

YOUR REFERENCE:	Letter dated 5.5.1987
DATE RECEIVED:	7th May, 1987
SAMPLE NOS.:	396701 - 396717
SUBMITTED BY:	A.M. Hespe
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 87/5/8

Seventeen samples of drill core from DDH/MAC-10 were received for routine petrological examination. Representative thin-sections were prepared and examined together with respective offcuts, with carbonate stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative and comparative comments.

Summary

As sampled, the drilled sequence comprises two sequences of basaltic lava with intervening and underlying andesites and a basal sequence of carbonaceous psammopelites.

Basalt units are quite similar in terms of relict primary features (textural and compositional) and alteration assemblages, with both units exhibiting chlorite-quartz-carbonate-albite assemblages carrying accessory cloudy microcrystalline epidote, but lacking the more typical prehnite-pumpellyite assemblage. In comparison, the upper basalts exhibit chloritic glassy mesostases and clear, colourless augite, whereas the lower basalt is characterised by felsic mesostases and pale brown clinopyroxene, at least with respect to the groundmass laths.

Andesites from both above and below the lower basalt are dominated by variably amygdaloidal perlitic-devitrified lavas with subordinate lava breccias. These rocks typically exhibit relatively advanced alteration, with assemblages analogous to those in the basalts. A few examples exhibit sericite-quartz-carbonate (typically sideritic) assemblages, and these tend to exhibit enhanced pyrite contents.

A similar assemblage, clearly partly fracture-controlled, is reflected in two examples of acid (dacitic to rhyodacitic) porphyry (samples 396703, 396704), interpreted as intrusives.

The basal sediments include calcareous, carbonaceous, pyritic pelites (siltstone, silty shale), a polymict grit (396715), and a distinctly (mildly reworked) tuffaceous siltstone (396717). These sediments are variably quartzose and micaceous, but are relatively devoid of low-grade regional metapelite-derived lithic clasts. The grit includes abundant andesite-derived lithic clasts and subordinate acid volcanic debris. Andesitic material includes typical perlitic lava analogous to that in the overlying units, suggesting this psammopelitic sequence is situated within, rather than basalt to, the andesitic volcanics. This may explain the paucity of metapelite clasts.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
396701 (T.S. 57890)	Amygdaloidal Basalt. Augite and chlorite-calcite-pseudomorphed ?orthopyroxene phenocrysts, calcite amygdales in a groundmass of albitised plagioclase microlaths, augite granules and a chloritic, subvitric mesostasis.	Coarsely amygdaloidal, weakly flow-structured porphyritic, basaltic. Incipiently stressed.	Traces of chromite, rare albitised plagioclase phenocrysts, very minor traces of pyrite. Minor cloudy epidote.	Moderately chlorite-calcite-altered porphyritic basalt with microscopic clots of cloudy microcrystalline epidote in a chloritic mesostasis.
396702	Porphyritic Basalt. Frequent weakly chloritised augite, subordinate calcite-pseudomorphed ?orthopyroxene phenocrysts, sparse chlorite micro-amygdales in a chlorite-mesostasised albitised plagioclase microlath/minor pyroxene	Weakly banded, strongly porphyritic, weakly amygdaloidal, basaltic. granule groundmass.	Traces cloudy microcrystalline epidote (sim.396701), chromite, minor traces chalcopyrite.	Close affinities with 396701; similarly chlorite-calcite-altered, with associated accessory cloudy epidote in the chloritic, primarily subvitric mesostasis.
396703	Dacitic Porphyry. Phenocrysts of weakly calcite-stained oligoclase-albite, subordinate embayed quartz, sericite-calcite-pseudomorphed amphibole in a groundmass of sericitic, microcrystalline feldspar, subordinate quartz.	Evenly disseminated phenocrysts and feldspar glomerophenocrysts; weakly banded microfelsitic groundmass.	Minor sericitic albite micro-amygdales. Leucoxenised opaques, rare ultrafine pyrite. Minor displacive chlorite films.	Verges on sodic rhyolitic composition. Textural features consistent with a semi-chilled minor intrusive.
396704	Rhyodacitic Breccia. Clasts of weakly sericite-calcite-altered porphyry (similar to 396703, sparse K-spar phenocrysts). Matrix of quartz-sericite aggregates. Pervasive irregular network of sericite veinlets. Semi-pervasive fine pyrite.	Random angular to subangular, porphyritic, microfelsitic clasts. Poorly defined matrix. Displacive veinlets.	Leucoxenised opaques. Minor traces of sphalerite (in embayments in quartz and rare albite micro-amygdales).	Close affinities with 396703, slightly potassic in comparison. Detail obscured by sericite veining, but general features consistent with an intrusive breccia.
396705	Leuco-Andesitic Breccia. Phenocrysts, clusters of albitised plagioclase in microcrystalline quartz-albite-altered/variably sideritic carbonate-stained felsic groundmass. Late veinlets, pyritic stringers, replacements of sericite.	Lapilli to agglomerate grade, moulded, lithoclastic. Confused by displacive carbonate- and late sericite veinlets.	Leucoxenised opaques, minor clots of chlorite, minor traces of apatite.	Primarily a felsic (leuco-)andesitic lava breccia. Reflects silicification with accessory albite and sideritic carbonate, complexed by a sericite-pyrite overprint.
396706	Felsitic Andesite. Sericitised feldspar, subordinate quartz(-sericite)-pseudomorphed amphibole and silicified to carbonate-pseudomorphed pyroxene phenocrysts. Groundmass of silicified felsite with included sericitised feldspar microlites.	Porphyritic, banded, felsitic; weakly quartz-micro-amygdaloidal. Unstressed.	Leucoxenised opaques, sporadic veinlets of quartz, sericite, sideritic carbonate, with traces of chalcopyrite, sulphosalt.	Devitrified, banded andesitic pitchstone. Quartz(-sericite-sideritic carbonate)-altered and veined with minor vein-hosted sulphide.
396707	Perlitic Andesite. Albitised/weakly sericitic plagioclase-, minor quartz-chlorite-carbonate-pseudomorphed pyroxene phenocrysts; chloritic microcrystalline albite-altered groundmass. Replacive zones of microcrystalline quartz.	Strongly porphyritic with a coarsely perlitic-devitrified groundmass. Vaguely microfracture-controlled silicified zones.	Leucoxenised opaques.	Coarsely perlitic in contrast to the banded felsitic 396706. Albite-chlorite-carbonate-altered, with irregular zones of late corrosive silicification.
396708	Amygdaloidal Basalt. Sparse silicified ?orthopyroxene phenocrysts, augite microphenocrysts, quartz-calcite amygdales in a groundmass of augite laths, granules, albitised plagioclase laths, and a weakly chloritic albite-quartz mesostasis.	Weakly porphyritic, weakly amygdaloidal, basaltic; incipiently flow-structured.	Traces chromite, pyrite, chalcopyrite (amygdales). Minor quartz-calcite and late calcite veinlets.	Similarly but relatively mildly altered in comparison with 396701 and 396702. Main contrast is presence of a felsic rather than chloritic, subvitric mesostasis.

699259

Sample No.	Classification - Composition	Fabric	Accessories	CENTRAL MINERALOGICAL SERVICES Comments
396709	Amygdaloidal Basalt. Quartz(-chlorite-calcite)-pseudomorphed pyroxene phenocrysts, sparse quartz-chlorite-calcite amygdales in a groundmass of weakly chloritic augite laths, albitised plagioclase microlaths with a chlorite-quartz-minor albite mesostasis.	Similar to 396708; relatively porphyritic and amygdaloidal.	Chromite. Traces cloudy microcrystalline epidote; minor traces chalcopyrite. Minor quartz and late calcite veinlets.	Close affinities with 396708. Groundmass chlorite is in microscopic interlath amygdales rather than replacive. Augite is pale brown (sim. 396708, in contrast to 396701, 396702).
396710	Perlitic Andesite. Albitised/sericite-carbonate-stained plagioclase-, quartz-sericite-carbonate-pseudomorphed pyroxene phenocrysts. Altered groundmass of microcrystalline quartz, sericite and cloudy sideritic carbonate. Pyritic cherty quartz veinlets.	Similar to 396707; weakly sericite-quartz-amygdaloidal.	Leucoxenised opaques. Sporadic patches of chalcedony in quartz veins, amygdales.	Primarily similar to 396707. Alteration assemblage closely analogous to that in 396706. Minor late sericitic-calcitic microfractures.
396711	Amygdaloidal Andesite. Albitised/sericite-calcite-stained plagioclase-, minor calcite-pseudomorphed ferromagnesian phenocrysts, frequent quartz-chlorite amygdales in a microcrystalline quartz-sericite-chlorite/minor calcite-altered groundmass.	Strongly porphyritic and amygdaloidal, flow-structured; perlitic.	Leucoxenised opaques, rare chromite, minor traces pyrite. Minor chloritic quartz-calcite veinlets.	Close affinities with 396710; amygdaloidal and flow-structured in comparison and with a chlorite-quartz-calcite(-sericite-albite) alteration assemblage.
396712	Amygdaloidal "Andesite". Albitised calcite-sericite-stained feldspar-, minor chlorite-carbonate-pseudomorphed ferromagnesian phenocrysts, quartz-chlorite-sericite-carbonate amygdales; chlorite-carbonate-altered to partly silicified groundmass.	Porphyritic, weakly/variably amygdaloidal; compositionally banded, variably albitised feldspar-microlathic.	Leucoxenised opaques, rare chromite.	Compositionally banded, andesitic/trend basaltic lava with chlorite-carbonate-altered, relatively mafic and relatively silicified felsic bands.
396713	Dolomitic Siltstone. Framework of sericite-chlorite-carbonate-altered feldspar grains, poorly determinate lithic clasts, quartz grains, minor muscovite flakes. Variably carbonaceous and dolomitic sericite-chlorite matrix.	Well-sorted, silty clastic, banded on a sub- to fine millimetric scale. Weakly crenulated.	Carbonaceous pelite clasts, dolomitic limestone clasts. Detrital biotite, leucoxene. Minor traces syngenetic pyrite.	Dolomitic-carbonaceous, weakly pyritic arkosic and weakly lithoclastic siltstone. Vaguely volcanomict. Finer detail obscured by sericite-chlorite-carbonate alteration.
396714	Perlitic Andesite. Albitised plagioclase-, relatively minor cloudy carbonate-pseudomorphed ferromagnesian phenocrysts, sparse calcite-chlorite amygdales in a chloritic/weakly calcite-stained microcrystalline albite-quartz-altered groundmass.	Porphyritic, weakly amygdaloidal; pervasively finely perlitic.	Leucoxenised opaques, minor relics dark brown phenocrystal hornblende, traces of magnetite. Minor traces of pyrite.	Relatively finely perlitic/devitrified andesite with an albite-chlorite-carbonate-quartz alteration assemblage; minor relics of dark hornblende.
396715	Polymict Grit. Framework of chlorite-sericite-albite-calcite-altered, variably calcite-amygdaloidal andesitic lava clasts, subordinate carbonaceous pelite clasts, quartz grains. Carbonaceous shaly pelitic matrix with clots of calcite.	Poorly sorted, sandy gritty clastic. Incipiently bedded; incipiently sheared.	Sericitic-albitised clastic feldspar, minor sericitised rhyolite clasts. Minor pyrite. Traces detrital chromite.	Includes minor clasts of low-grade regional metapelite. Dominated by andesitic and reworked carbonaceous pelite clasts, relatively minor rhyolite-derived components.
396716	Carbonaceous Pelite. Fine silt-sized detrital muscovite flakes, minor quartz grains in a pervasively carbonaceous kaolin-illite matrix with semi-pervasive clots of dolomite, pervasive ultrafine pyrite disseminations.	Massive to incipiently bedded slightly silty shale. Essentially unsheared.	Minor silt- to fine sand-sized carbonaceous pelite clasts. Sparse late microscale calcite veinlets.	Dolomitic, carbonaceous silty shale with reworked carbonaceous pelite clasts, thinly/pervasively disseminated ultrafine syngenetic pyrite.

CENTRAL MINERALOGICAL SERVICES

Sample No.	260 Classification - Composition	Fabric	Accessories	Comments
396717 (T.S. 57906)	Tuffaceous Siltstone. Framework of extensively kaolinised/illitised shards/shard fragments, subordinate albite and quartz grains, carbonaceous shale and sericitic, carbonaceous slate clasts. Kaolin-illite matrix with clots of calcite.	Massive to incipiently bedded fine sandy siltstone/silty fine sandstone. Shale-matrixed.	Detrital muscovite flakes, leucoxenic semi-opaques, chloritised biotite flakes. Traces ultrafine pyrite.	Distinctly tuffaceous (mildly reworked vitroclastic) pelite-matrixed fine sandy siltstone. Essentially unmetamorphosed.

599261

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261

599262

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04455	14/05/87	2375	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	396701	105	40	105	<0.5	200	6	1850	550	320
2	396702	125	20	85	<0.5	160	5	2900	650	150
3	396703	25	65	175	<0.5	15	5	510	7	180
4	396704	60	875	1500	<0.5	20	36	400	30	250
5	396705	5	85	415	<0.5	10	13	560	<5	260
6	396706	35	15	60	<0.5	20	6	600	90	200
7	396707	<5	40	200	<0.5	15	1	710	50	220
8	396708	170	35	55	<0.5	105	14	160	470	120
9	396709	120	25	70	<0.5	125	3	440	540	140
10	396710	5	25	60	<0.5	20	5	920	60	180
11	396711	5	95	390	<0.5	20	1	470	35	170
12	396712	<5	20	80	<0.5	25	3	630	65	180
13	396713	50	35	110	<0.5	70	23	380	130	170
14	396714	35	20	100	<0.5	30	16	230	110	150
15	396715	45	65	135	<0.5	60	16	520	150	130
16	396716	25	30	55	<0.5	40	8	420	80	140
17	396717	55	60	105	<0.5	60	16	660	75	150
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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262

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599263

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04455	14/05/87	2375	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Zr/Ti						
1	396701	3650	<0.008	.038						
2	396702	3000	<0.008	.050						
3	396703	1250	<0.008	.144						
4	396704	1700	<0.008	.147						
5	396705	2900	<0.008	.089						
6	396706	2050	<0.008	.098						
7	396707	2250	<0.008	.098						
8	396708	1800	<0.008	.061						
9	396709	2000	<0.008	.070						
10	396710	2300	<0.008	.078						
11	396711	2450	<0.008	.078						
12	396712	2350	<0.008	.077						
13	396713	4800	<0.008	.035						
14	396714	3000	<0.008	.050						
15	396715	3800	<0.008	.034						
16	396716	2000	<0.008	.070						
17	396717	2750	<0.008	.085						
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 6.

364 (264)

599265

PAGE OF

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. MAC-10

DATE 13-APRIL-87

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	396637	6.0 - 16.0	Cu Pb Zn Ag As Ba As Co Fe Zr Ni		396660	306.0 - 316.0		
2	38	16.0 - 26.0			71	316.0 - 326.0		
3	39	26.0 - 36.0			72	326.0 - 332.2		
4	40	36.0 - 46.0			73	332.2 - 342.2		
5	41	46.0 - 56.0			74	342.2 - 352.2		
6	42	56.0 - 66.0			75	352.2 - 356.8		
7	43	66.0 - 76.0			76	356.8 - 366.0		
8	44	76.0 - 86.0			77	366.0 - 376.0		
9	45	86.0 - 96.0			78	376.0 - 382.8		
10	46	96.0 - 106.0			79	382.8 - 388.0		
11	47	106.0 - 117.4			80	388.0 - 398.0		
12	48	117.4 - 127.0			81	398.0 - 408.0		
13	49	127.0 - 137.0			82	408.0 - 418.0		
14	50	137.0 - 147.0			83	418.0 - 428.0		
15	51	147.0 - 157.0			84	428.0 - 434.0		
16	52	157.0 - 167.0			85	434.0 - 441.2		
17	53	167.0 - 177.0			86	441.2 - 450.1	STD	
18	54	177.0 - 187.0		STD	#87			
19	55	187.0 - 197.0			88	450.1 - 460.0		
20	56	197.0 - 202.3	INSERT STD		89	460.0 - 470.0		
21	STD #57 58	202.3 - 205.2			90	470.0 - 475.8		
22	59	205.2 - 215.1			91	475.8 - 476.4		
23	60	215.1 - 225.1			92	476.4 - 480.2		
24	61	225.1 - 237.4			93	480.2 - 490.0		
25	62	237.4 - 240.4			94	490.0 - 500.0		
26	63	240.4 - 250.0			95	500.0 - 510.0		
27	64	250.0 - 260.7			96	510.0 - 520.0		
28	65	260.7 - 270.0			97	520.0 - 529.6		
29	66	270.0 - 281.3						
30	67	281.3 - 286.2						
31	68	286.2 - 296.2						
32	69	296.2 - 306.0						

265

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599266

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 97224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04485

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
2384	

DATE RECEIVED	RESULTS REQUIRED
15/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	27/05/87	1	61

STATE SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	396637/97	PU Prep: 01							Cu,Pb,Zn,Ag,Ni/101,As/114		
	396637/97	PU							Ba,Cr,Zr,Ti/401		
	396637/97	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MAC-10
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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265

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599267

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04405	27/05/87	2384	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	6-16 396637	75	40	185	<0.5	105	15	760	120	150
2	16-26 396638	50	50	85	<0.5	95	13	750	120	150
3	26-36 396639	60	50	95	<0.5	100	15	800	110	150
4	36-46 396640	65	45	75	<0.5	105	18	820	110	150
5	46-56 396641	100	35	130	<0.5	95	15	690	110	140
6	56-66 396642	65	45	110	<0.5	90	20	780	100	140
7	66-76 396643	75	45	195	<0.5	90	180	810	90	140
8	76-86 396644	70	95	165	<0.5	90	19	690	95	130
9	86-96 396645	80	50	145	<0.5	90	19	720	90	120
10	96-106 396646	85	50	180	<0.5	105	19	740	110	140
11	106-117.4 396647	75	365	140	<0.5	100	27	680	100	120
12	117.4-127 396648	100	60	135	<0.5	240	52	1900	600	140
13	127-137 396649	115	20	80	<0.5	280	17	2300	660	380
14	137-147 396650	115	25	90	<0.5	265	10	2150	650	360
15	147-157 396651	95	20	70	<0.5	215	27	1600	640	200
16	157-167 396652	120	15	70	<0.5	190	17	1150	630	130
17	167-177 396653	190	35	240	<0.5	210	65	900	620	130
18	177-187 396654	135	35	325	<0.5	165	17	1850	370	120
19	187-197 396655	85	330	910	<0.5	200	18	1300	440	220
20	197-202.3 396656	110	35	125	<0.5	270	7	1950	590	340
21	396657 * STD 3	135	180	2200	<0.5	290	20	1100	860	80
22	202.3-205.2 396658	15	20	50	<0.5	45	12	330	20	200
23	205.2-215.1 396659	370	10	135	<0.5	190	6	95	740	130
24	215.1-225.1 396660	85	380	590	<0.5	40	18	370	40	240
25	225.1-237.4 396661	120	15	145	<0.5	170	5	520	610	180

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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267

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599268

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04485	27/05/87	2384	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	237.4-240.4 396662	50	25	45	<0.5	60	7	840	100/	190
2	240.4-250 396663	300	215	470	<0.5	200	10	640	490/	120
3	250-260.7 396664	75	120	225	<0.5	185	11	570	600/	100
4	260.7-270 396665	30	30	50	<0.5	50	18	520	40/	260
5	270-281.3 396666	95	50	60	<0.5	35	8	440	15/	220
6	281.3-286.2 396667	10	10	70	<0.5	25	3	590	5/	260
7	286.2-296.2 396668	10	20	50	<0.5	30	3	600	6/	260
8	296.2-306 396669	35	80	185	<0.5	20	7	570	<5/	220
9	306-316 396670	10	50	190	<0.5	45	11	470	55/	210
10	316-326 396671	10	65	200	<0.5	40	6	680	45/	210
11	326-332.2 396672	100	20	90	<0.5	35	6	770	45/	210
12	332.2-342.2 396673	4625	65	4075	<0.5	830	3	730	40/	210
13	342.2-352.2 396674	35	110	180	<0.5	45	4	580	60/	210
14	352.2-356.8 396675	95	175	335	<0.5	110	8	280	290/	170
15	356.8-366 396676	95	315	620	<0.5	195	13	2050	560/	150
16	366-376 396677	55	25	125	<0.5	195	8	1350	670/	150
	376-382.8 396678	60	15	90	<0.5	160	7	510	540/	130
18	382.8-388 396679	45	20	80	<0.5	45	7	680	30/	180
19	388-398 396680	45	60	165	<0.5	35	4	630	40/	160
20	398-408 396681	20	45	130	<0.5	30	3	560	20/	170
21	408-418 396682	30	<5	20	<0.5	30	2	550	25/	160
22	418-428 396683	25	5	40	<0.5	25	2	680	20/	170
23	428-434 396684	30	5	30	<0.5	30	6	690	40/	170
24	434-441.2 396685	45	<5	50	<0.5	35	17	600	35/	170
25	441.2-450.1 396686	50	135	295	<0.5	95	28	430	140	140

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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599269

268

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04485	27/05/87	2384	3 OF 6

TUBE No	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	396687 ~~450~~ 3	125	200	2300	<0.5	300	17	1100	900	70
2	450·1-460 396688	40	35	110	<0.5	55	15	1850	130/	160
3	460-470 396689	90	260	775	<0.5	50	8	1250	100/	140
4	470-475·8 396690	40	75	335	<0.5	50	5	1100	110/	140
5	475·8-476·4 396691	50	35	100	<0.5	80	15	470	110/	140
6	476·4-480·2 396692	35	25	150	<0.5	55	6	860	110/	160
7	480·2-490 396693	45	35	110	<0.5	100	15	370	160	170
8	490-500 396694	50	50	110	<0.5	80	14	520	90	170
9	500-510 396695	45	45	100	<0.5	80	12	540	75	180
10	510-520 396696	65	45	70	<0.5	85	12	620	65	150
11	520-529.6 396697	60	25	60	<0.5	75	10	540	70	170
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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(-269

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599270

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04485	27/05/87	2384	4 OF 6

TUBE No.	SAMPLE No.	Ti	Au	Zr/Ti
1	396637	3450	<0.008	.043
2	396638	3400	0.008	.044
3	396639	3400	<0.008	.044
4	396640	3450	<0.008	.043
5	396641	3150	<0.008	.044
6	396642	3050	<0.008	.046
7	396643	3050	<0.008	.046
8	396644	2950	<0.008	.044
9	396645	3050	<0.008	.039
10	396646	4050	<0.008	.035
11	396647	3550	<0.008	.034
12	396648	4950	<0.008	.028
13	396649	4550	<0.008	.083
14	396650	4350	<0.008	.083
15	396651	3100	<0.008	.064
16	396652	2550	<0.008	.051
17	396653	2650	<0.008	.049
18	396654	2750	<0.008	.044
19	396655	3600	<0.008	.061
20	396656	4150	<0.008	.082
21	396657 ~~STD~~ [3]	2350	<0.008	.034
22	396658	1300	<0.008	.154
23	396659	2750	<0.008	.047
24	396660	1550	<0.008	.155
25	396661	2600	<0.008	.069

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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270

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599271

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04485	27/05/87	2384	5 OF 6

TUBE No.	SAMPLE No.	Ti	Au							
1	396662	1300	<0.008	·146						
2	396663	2050	<0.008	·058						
3	396664	2300	<0.008	·043						
4	396665	1450	<0.008	·180						
5	396666	1100	<0.008	·200						
6	396667	1250	<0.008	·208						
7	396668	1200	<0.008	·217						
8	396669	2200	<0.008	·100						
9	396670	2100	<0.008	·100						
10	396671	2150	<0.008	·098						
11	396672	1900	<0.008	·110						
12	396673	2150	<0.008	·098						
13	396674	2100	<0.008	·100						
14	396675	2200	<0.008	·077						
15	396676	2400	<0.008	·062						
16	396677	2650	<0.008	·057						
17	396678	2300	<0.008	·056						
18	396679	2300	<0.008	·078						
19	396680	2200	<0.008	·073						
20	396681	2200	<0.008	·077						
21	396682	2100	<0.008	·076						
22	396683	2150	<0.008	·079						
23	396684	2200	<0.008	·077						
24	396685	2250	<0.008	·075						
25	396686	4400	<0.008	·032						

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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271

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599272

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04485	27/05/87	2384	6 OF 6

TUBE No.	SAMPLE No.	Ti	Au							
1	396687 ~~X STD~~ 3	2350	<0.008	.030						
2	396688	2950	<0.008	.054						
3	396689	2800	<0.008	.050						
4	396690	2750	<0.008	.051						
5	396691	4050	<0.008	.034						
6	396692	3050	<0.008	.052						
7	396693	3750	<0.008	.045						
8	396694	3200	<0.008	.053						
9	396695	2750	<0.008	.065						
10	396696	2550	<0.008	.059						
11	396697	2900	<0.008	.065						
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 7.

ABERFOYLE RESOURCES
Exploration Division

INTERPRETATION REPORT

DHEM SURVEYS
DDH's HAT 6 - HAT 9, MC 14, MC 15, MC 17, MC 19 AND MAC 10

HATFIELD EL 15/73

Prepared by:

J SILIC

Issued by:

J SILIC
Chief Geophysicist

Distribution

Hawthorn (1)
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599276

LIST OF CONTENTS

Introduction

Survey Specifications

Discussion of Results

Conclusion

References

Appendix I

DHEM: The Que-Hellyer Volcanics Experience

Appendix II

Fig 1 - 9
Loop Locations and DHEM profiles

LIST OF FIGURES

Fig 1 : DHEM - HAT 6 Loop Location
1a: HAT 6 - Sirotem DHEM profile

Fig 2 : DHEM - HAT 7 Loop Location
2a: HAT 7 - Sirotem DHEM profile

Fig 3 : DHEM - HAT 8 Loop Location
3a: HAT 8 - Sirotem DHEM profile

Fig 4 : DHEM - HAT 9 Loop Location
4a: HAT 9 - Sirotem DHEM profile

Fig 5 : MC 14 - Sirotem DHEM and UTEM surface profiles

Fig 6 : DHEM - MC 15 Loop Location
6a: MC 15 - Sirotem DHEM profile
6b: MC 15 - Sirotem DHEM profile

Fig 7 : DHEM - MC 17 Loop Location
7a: MC 17 - Sirotem DHEM profile

Fig 8 : DHEM - MC 19 Loop Location
8a: MC 19 - Sirotem DHEM profile

Fig 9 : DHEM - MAC 10 Loop Location
9a: MAC 10 - Sirotem DHEM profile

Introduction

Electromagnetic techniques have played an important role in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery, downhole Em techniques (DHEM, Silic and Eadie, 1989, Appendix I) have been an important part of the exploration strategy in the volcanic sequence hosting the above deposits because of the failure of blanket Em surveys to locate further targets worthy of follow up and because no other method can accurately target drill holes at depths beyond the surface Em detection limits.

The purpose of this report is to discuss and present the results from DHEM surveys in DDH's HAT 6 - HAT 9, MC 14, MC 15, MC 17, MC 19 and MAC 10, from the Hatfield EL 15/73.

Survey Specifications

All loops were designed so that their primary magnetic field would couple with targets at specified target horizons. Possible variations in the dips of the targets from the predicted dips (based on the geological knowledge) was also taken into account, as was the detection limitations of the DHEM surveys, the parameters of which are known from in-house research studies (Silic and Eadie 1989).

Discussion of Results

No targets worthy of follow up were detected by any of the surveys. In fact the only inhole response which could be attributed to a conductive feature was observed in MC 14 (fig 5), and outlines the intersected Que River shale as was predicted from the surface UTEM surveys.

Despite some interfering effects from the nearby powerlines the data quality from these DHEM surveys was good enough for an

approximately 2 mt target to have been detected if it was within 150 metres from the holes.

Conclusion

No targets worthy of follow up have been detected by the DHEM surveys in DDH's HAT 6 - HAT 9, MC 14, MC 15, MC 17, MC 19 and MAC 10.

599279

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APENDIX I

599281

7th ASEG Conference Paper No -

DHEM: THE QUE-HELLYER VOLCANICS EXPERIENCE

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Keywords

downhole electromagnetics, Que River, Hellyer, volcanics

Short title

Que Hellyer DHEM

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Abstract

The intermediate volcanic sequence hosting the Que River and Hellyer mines provides an excellent environment for electromagnetics in that the only two strong conductors ever found in them have been developed into mines. Now that the ground has been thoroughly explored by surface EM and the search is by necessity becoming deeper, downhole EM has become an extremely important aspect of the exploration programme. However, even in this ideal environment for EM, there are factors that cause interpretation headaches, although all can be overcome with care and experience. These problems include the overlying moderately conductive black shales, instrumentation responses from the Sirotem unit, responses from culture, and the effect of strong conductors such as the known ore bodies close to the target.

Introduction

Electromagnetic techniques have played an important role in the discoveries of the Que River and Hellyer deposits (Webster and Skey, 1979; Silic et al, 1985; Eadie et al, 1985). Since the Hellyer discovery, downhole EM techniques (DHEM) have become an important part of the exploration strategy in the volcanic sequence hosting the above ore bodies (referred to in this paper as the Que-Hellyer volcanics) because of the failure of blanket surface EM surveys to locate further targets worthy of follow up and because no other method can accurately target drillholes at depths beyond the surface EM detection limits. Some forty exploration drillholes have been logged with EM since the Hellyer discovery. Recently drillhole patterns have been designed and are being drilled to be used as geophysical platforms for potential targets at depths beyond the detection capabilities of the surface systems.

This paper discusses our experience with DHEM techniques in the Que-Hellyer volcanics by illustrating the power of the method and also some of the problems encountered.

The EM environment of the Que Hellyer volcanics

The Que-Hellyer volcanics are known to be relatively resistive with a bulk value of about 500 ohm-metres (Webster and Skey, 1979). The overlying Que River Shales are slightly more conductive, although variable, with resistivities as low as 100 ohm-metres. Conductive weathering is not a problem in this environment, and there are not many other spurious conductors. In fact the only two first-priority surface EM conductors followed up in the Que-Hellyer volcanics are the two ore bodies, Que River and Hellyer. However, given the relatively short time constants associated with parts of these deposits (Silic et al, 1985; Eadie et al, 1985; Staltari, 1986) there have been two candidates identified as having the potential to overshadow an EM response from an ore body: the shales that overlie the Que-Hellyer volcanics and the Sirotem instrumentation response.

DHEM through the overlying shale horizon

The UTEM anomaly shown in Figure 1 is one of the few surface responses in the area that is comparable in strength to the Hellyer UTEM discovery anomaly and the Que River response, with the anomaly lasting beyond 1 ms. An experienced interpreter, using for example the second derivative technique of Silic (1989), would recognise that the sudden changes in slope of the profile mark the edge of a conductive unit, in this case the Que River shale horizon beneath a dolerite sill. This was understood prior to drilling, and a hole was designed not to test the conductor, but rather a prospective horizon some hundreds of metres below the surface. Unlike the surface data which superficially resembles the Hellyer results, the DHEM data (Figure 1) do not at all replicate the DHEM results at Hellyer where a time constant of 3-4 ms is evident (Eadie, 1987). Instead the response can be interpreted to be from a large body with a moderately low resistivity (the shales), and would not be confused with a good inductive ore body response.

Sirotem instrumentation response

A number of responses occur with elevated signal levels which are impossible to reconcile with the resistivites of the Que-Hellyer volcanics. The shape of the response and the signal levels vary significantly with the transmitter loop position. Similar effects have been observed by other companies working in relatively resistive terrains (Irvine, 1986). An example of this effect is shown in Figure 2, where the Sirotem response at 2.05 ms is shown for three loops. Although only the data at 2.05 ms is shown here, the responses at other times have identical shapes with amplitudes decreasing monotonically with time. In this case the signal levels are much higher than the expected signal from the volcanics, which should produce 0.1-0.2 uV/A at this delay time for this set up. The shape of the profile and signal levels vary considerably from loop to loop, with the secondary field being practically zero for Loop 1. The response correlates very closely with the axial component of the primary magnetic field

produced by each transmitter loop (Figure 2), as was confirmed by inverting the data using simple current filament models (eg Fullagar, 1987). This response is presently referred to as the "probe self response", although without further investigations we cannot be absolutely certain whether this is the case. Nevertheless, we have made the observation that in resistive terrains when the loop is close to the drillhole and the primary field is therefore expected to be large, these "probe self responses" have invariably been noted. To ensure that no target responses are overshadowed, it is good practice to keep the loop as far away from the drill hole as is possible.

Locating targets in electromagnetically active areas

One of the important exploration problems in the Que-Hellyer volcanics is to locate targets in the immediate vicinity of the existing deposits. In these cases the responses from the existing deposits and the associated culture invariably contribute to the DHEM data. Thus, the problem posed in these situations is to understand the effects from the known ore bodies and culture so that these responses may be separated from those of the other targets. Two examples, one a discovery near the Hellyer deposit and the other an attractive target about to be drilled near the Que River mine will be used to show some of the problems and solutions.

Figure 3 shows the Sirotem response at 3.4 ms in two drill holes on a section about 100 m north of the northern limits of the Hellyer ore body. The problem is to determine if the total response can be explained by the nearby orebody or if there is an unknown conductor influencing the results. Data from both drillholes show similar amplitude variations from loop to loop which are for the most part explainable by the Hellyer orebody, but in drillhole HL045, there is a consistent migration of crossovers from Loop 1 to 4, with a corresponding reduction in the width of the anomalies. It was this observation that suggested that a target conductor may lie close to this hole and therefore northeast of the known orebody. In particular, loops 3 and 4, which couple relatively well with a hypothesised flat-

lying conductor north east of Hellyer and poorly with Hellyer itself, generate current flow within about 50-70 m of HL045. The intersection of 1.9 m of conductive base metal sulphides in HL069A gives geological support to the hypothetical conductor.

Another example of this type occurred during a drilling programme at Que River. Two deep holes were drilled 400 m apart beneath the mine. This pattern was based on the size and conductivity parameters of the target and the detectability limitations of DHEM. Both holes were surveyed using Sirotem with a late time broad negative trough detected in one of the holes, QR1060A (Figure 4), centred at 975 m down the hole. This trough is at least 700 m wide at 4.8 ms with a half-width greater than 500 m (half-width is defined as the width of the anomaly at half of its peak amplitude). Two questions arose regarding this response. The first question was whether or not the response was due to the Que River massive sulphides or culture associated with the mine, 500 metres above the hole. This possibility was ruled out because no late time anomaly was observed in the other hole, QR1001, which was the same distance from the deposit. The second question involved the change in anomaly sign at approximately 2 ms. To better understand the response, both holes were resurveyed with EM-37, and data was obtained from additional surface loops. Selected time channels from two of the loops are shown in Figure 5.

The early time capability and close channel sampling of the EM-37 system enable a thorough interpretation. In the loop 2 data, a strong broad cultural response can be seen clearly at early times shallow in the hole. In fact this cultural effect which decreases slowly down the hole imprints a large long wavelength background response on the data to late delay times even at depth. It is this background response that gives the apparently large half-width in both the EM-37 and Sirotem loop 2 data. Therefore loop 7 data, which has no cultural contamination is used for the interpretation. The signs of the responses are inverted for the loop 7 data because the loop position is on the opposite side of the conductor.

The major effect to be explained is the transition from a broad

negative, centred at 975 m depth to a broad positive late in time. A similar effect has been noted by Asten et al, (1987) and ascribed to drive delay. However in rocks as resistive as these, this effect can be calculated (Silic, 1987) to die out by 0.1 ms. Another possibility is a change in the magnetic field from being current channelling dominated to vortex flow dominated as documented and reported as a possible effect at Thalanga (Irvine, 1987). This appears to explain the response very well in that from our experience in these volcanics, strong current channelling effects generally last to about 2 ms. In addition, at the changeover time, which in this case is between 1.77 ms and 2.21 ms, the response shows some characteristics of both channelling and vortex flow, instead of just passing straight through zero. Since the channelling and vortex flow responses are of opposite polarity, the conductor is interpreted to lie above the drill hole as shown in Figure 6.

Discussion

Even in the most ideal terrains for electromagnetics, care and experience are necessary to not only ensure that drastic errors are not made in DHEM interpretation, but also to derive the maximum possible information from the data. In fact in these areas, DHEM should be more than just another step in the exploration programme. Rather it should actually lead the effort with every drill hole planned to make full use of its potential. One could also extrapolate the power of DHEM to areas of conductive cover. Having the receiver down the hole overcomes many of the problems of weathering and makes DHEM a powerful exploration tool even in areas where surface EM has been only a limited success.

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Figure Captions

Figure 1: Surface and downhole response to the overlying shale unit. (a) The surface UTEM anomaly lasts to comparable times to that of the Que River and Hellyer ore bodies. (b) The DHEM response is interpreted to be from a large body with a moderately low resistivity.

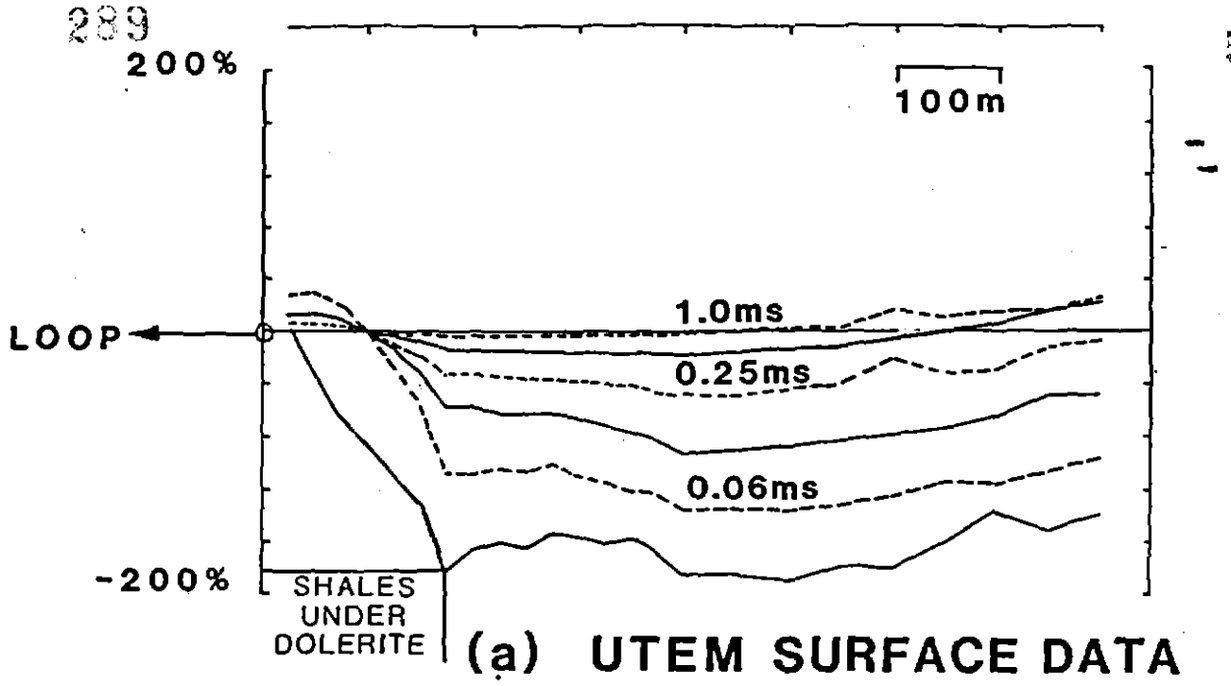
Figure 2: The Sirotem data in MAC 8 from loops 1, 2 and 3 (top) correlates with the axial component of the primary magnetic field of the transmitter loops (bottom). This instrumental response is referred to as "probe self-response".

Figure 3: Immediately north of Hellyer, the large responses in HL045 and HL062 can not be interpreted to arise solely from the known ore body. A second conductor must be invoked and this is supported by drill information.

Figure 4: Downhole Sirotem response for QR1060A, loop 2. A very broad anomaly centred at 975 m changes from a positive to a negative with increasing delay time.

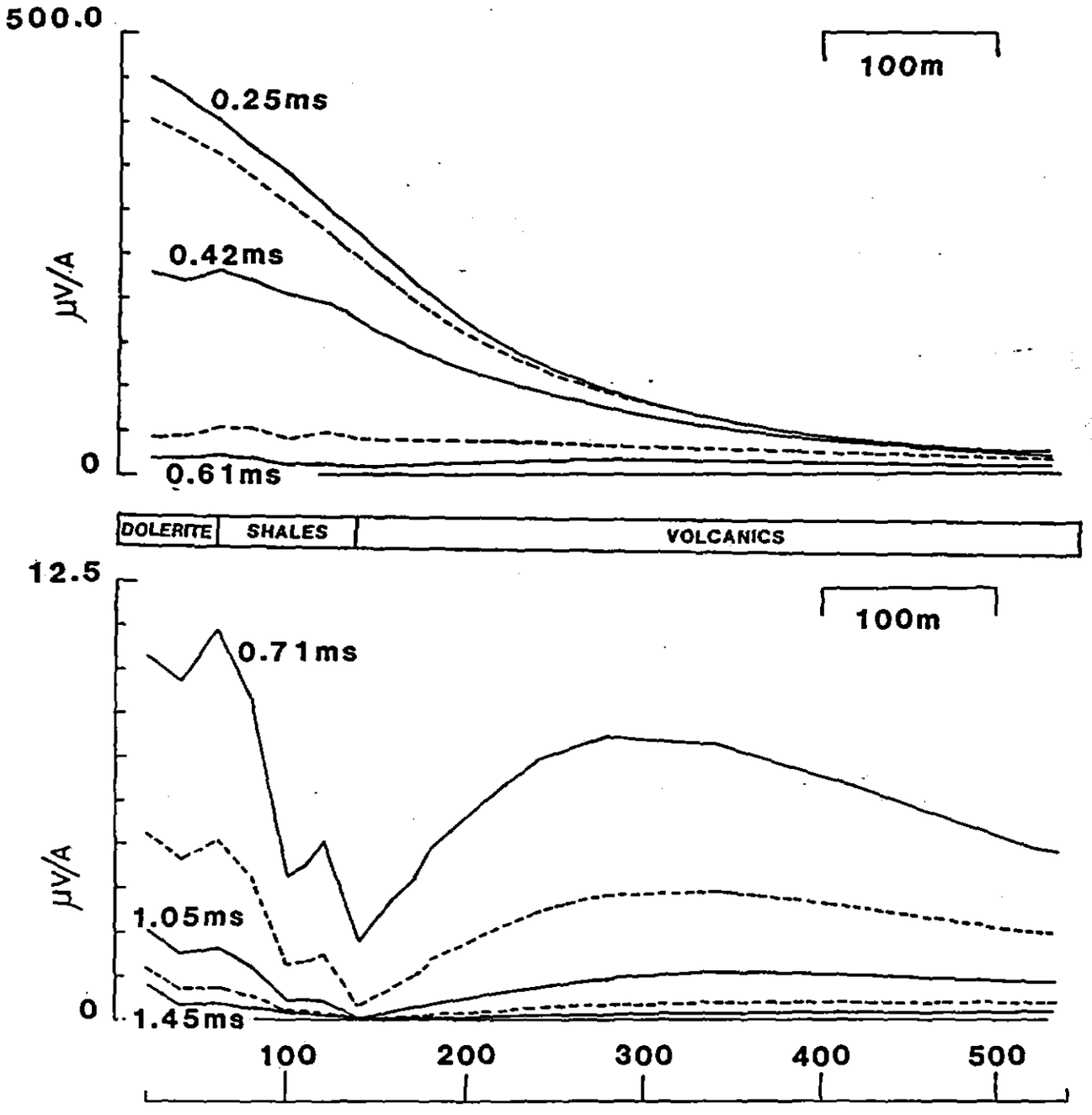
Figure 5: Downhole EM-37 responses for QR1060A, loops 2 and 7. The loop 2 response can be seen to have a very large long wavelength response strongest at shallow depths from culture near the Que River Mine, which superimposes a large background on the response to depth. The loop 7 response is initially dominated by a negative response (current channelling) at about 1000 m. It undergoes a sign change, and is finally dominated by a broad positive peak (vortex flow).

Figure 6: Location of drillhole QR1060A , transmitter loops, Que River Mine and interpreted conductor.

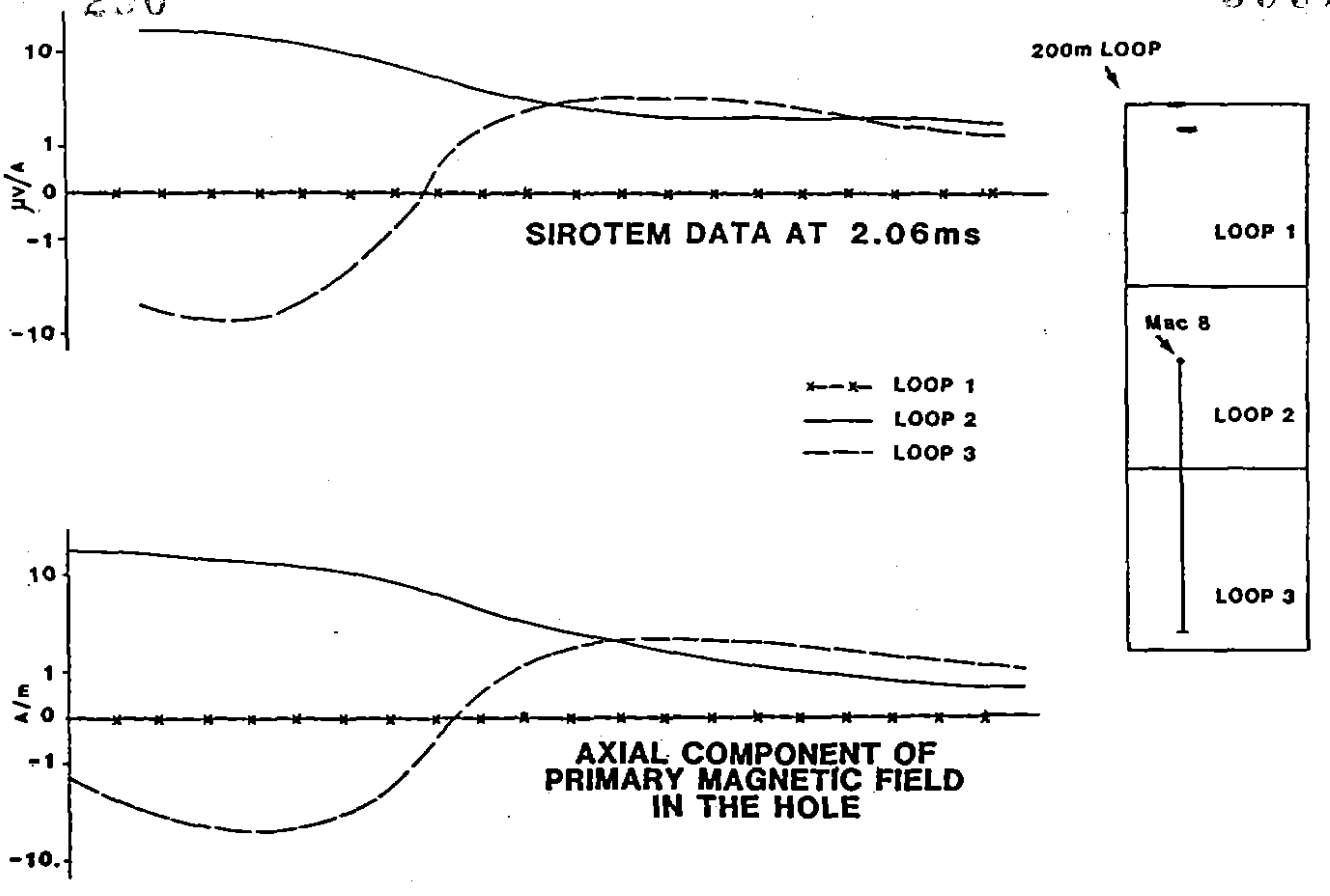


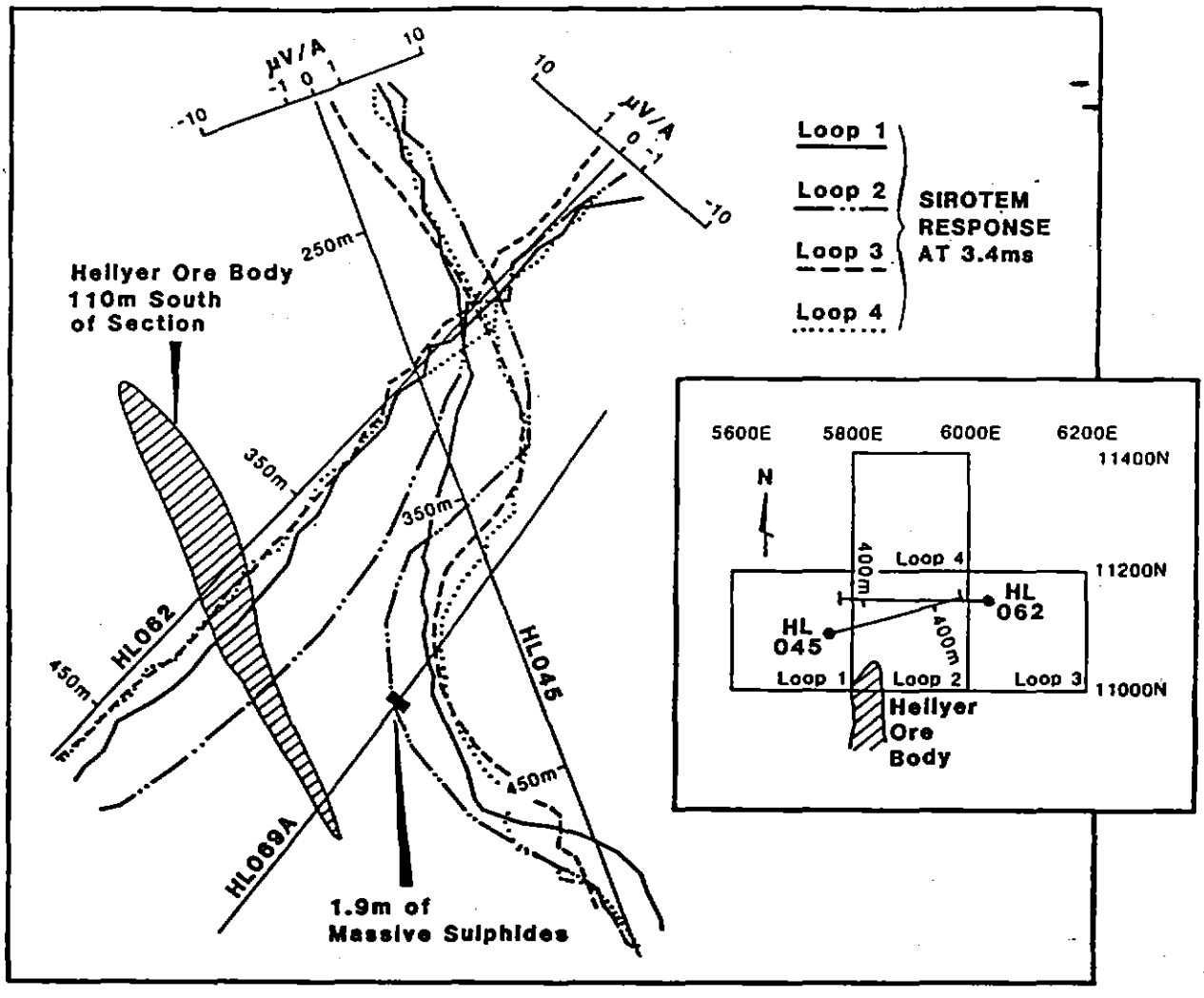
(a) UTEM SURFACE DATA

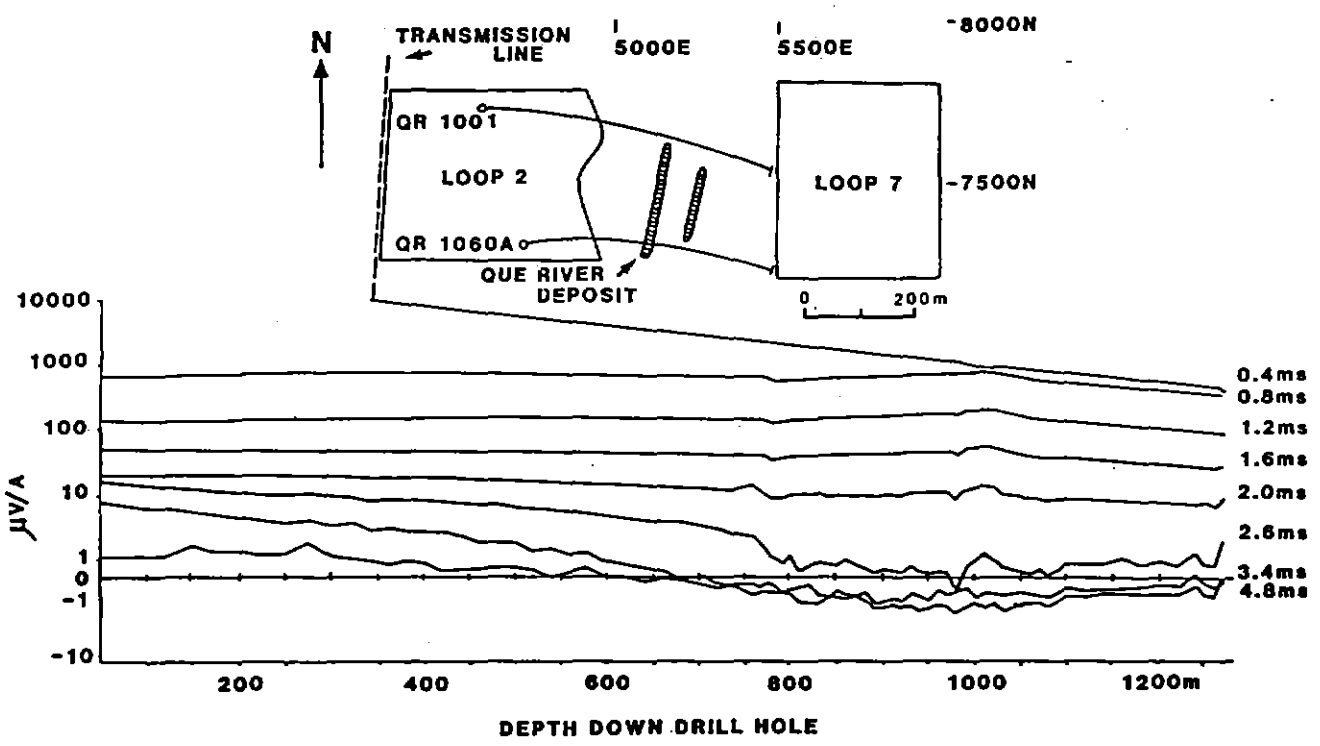
(CONTINUOUS NORMALISATION)

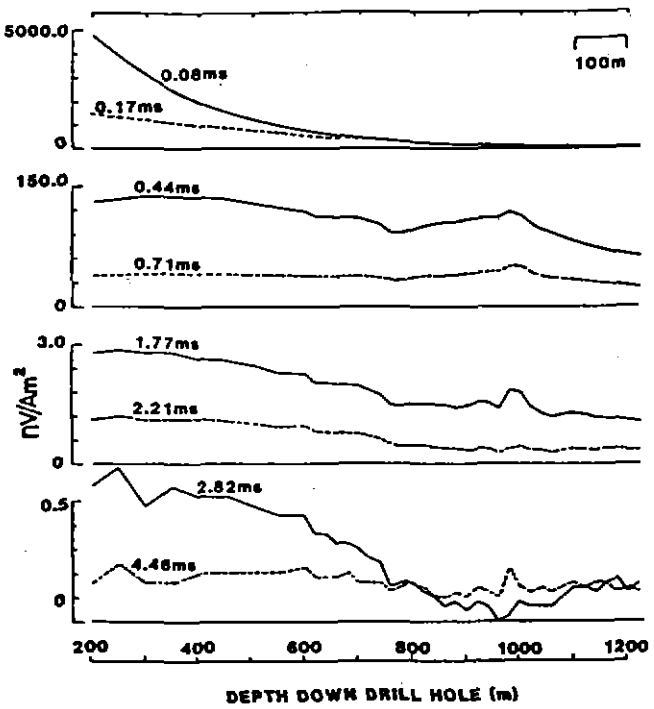


(b) DOWN-HOLE SIROTEM DATA

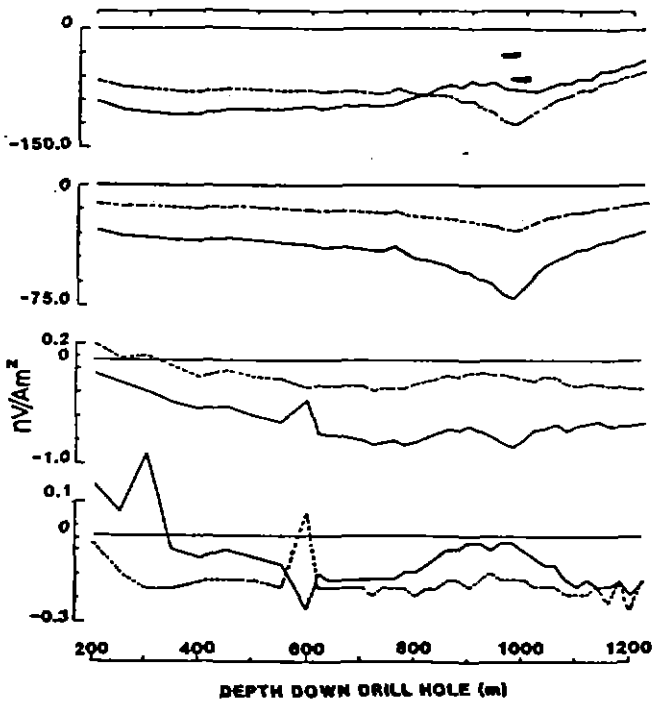

10
1
0
-1
-10
μv/A
SIROTEM DATA AT 2.06ms
LOOP 1
LOOP 2
LOOP 3
200m LOOP
LOOP 1
Mac 8
LOOP 2
LOOP 3
10
1
0
-1
-10.
A/m
AXIAL COMPONENT OF
PRIMARY MAGNETIC FIELD
IN THE HOLE


μV/A
-10
-1 0 1
10
Loop 1
Loop 2
Loop 3
Loop 4
SIROTEM
RESPONSE
AT 3.4ms
Hellyer Ore Body
110m South
of Section
250m
350m
350m
450m
HL062
HL045
HL069A
450m
1.9m of
Massive Sulphides
5600E
5800E
6000E
6200E
11400N
11200N
11000N
N
400m
400m
HL
062
HL
045
Loop 1
Loop 2
Loop 3
Loop 4
Hellyer
Ore
Body

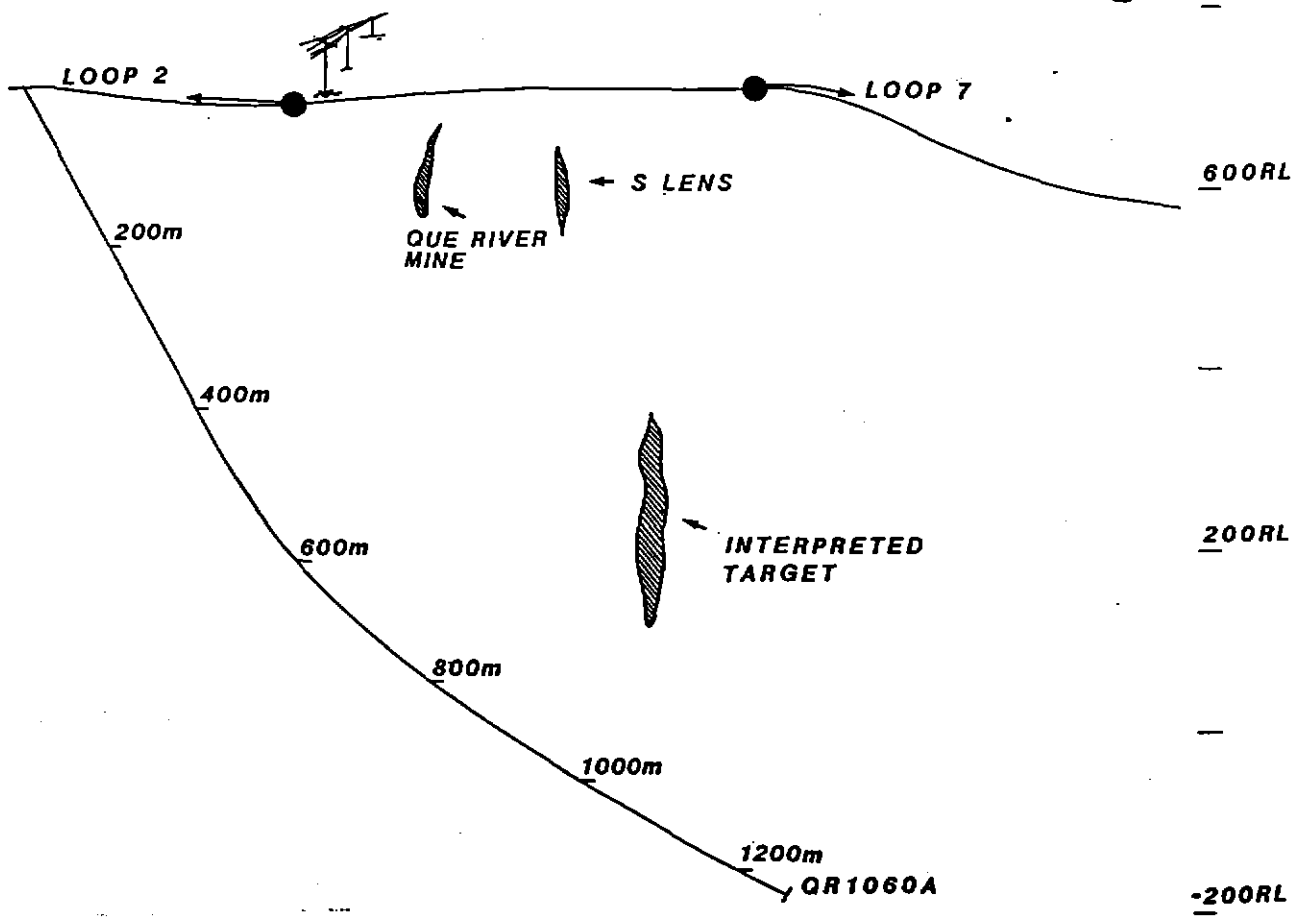

N
TRANSMISSION LINE
5000E
5500E
8000N
7500N
QR 1001
LOOP 2
LOOP 7
QR 1060A
QUE RIVER DEPOSIT
0
200m
10000
1000
100
10
1
0
-1
-10
µV/A
0.4ms
0.8ms
1.2ms
1.6ms
2.0ms
2.6ms
3.4ms
4.8ms
200
400
600
800
1000
1200m
DEPTH DOWN DRILL HOLE


5000.0
0
0.08ms
0.17ms
100m
150.0
0
0.44ms
0.71ms
3.0
0
1.77ms
2.21ms
nV/Am²
0.5
0
2.82ms
4.46ms
200
400
600
800
1000
1200
DEPTH DOWN DRILL HOLE (m)

LOOP 2


0
-150.0
0
-75.0
0.2
0
-1.0
nV/Am²
0.1
0
-0.3
200
400
600
800
1000
1200
DEPTH DOWN DRILL HOLE (m)

LOOP 7


LOOP 2
LOOP 7
600RL
S LENS
QUE RIVER
MINE
200m
400m
600m
INTERPRETED
TARGET
200RL
800m
1000m
1200m
QR1060A
-200RL

APPENDIX II

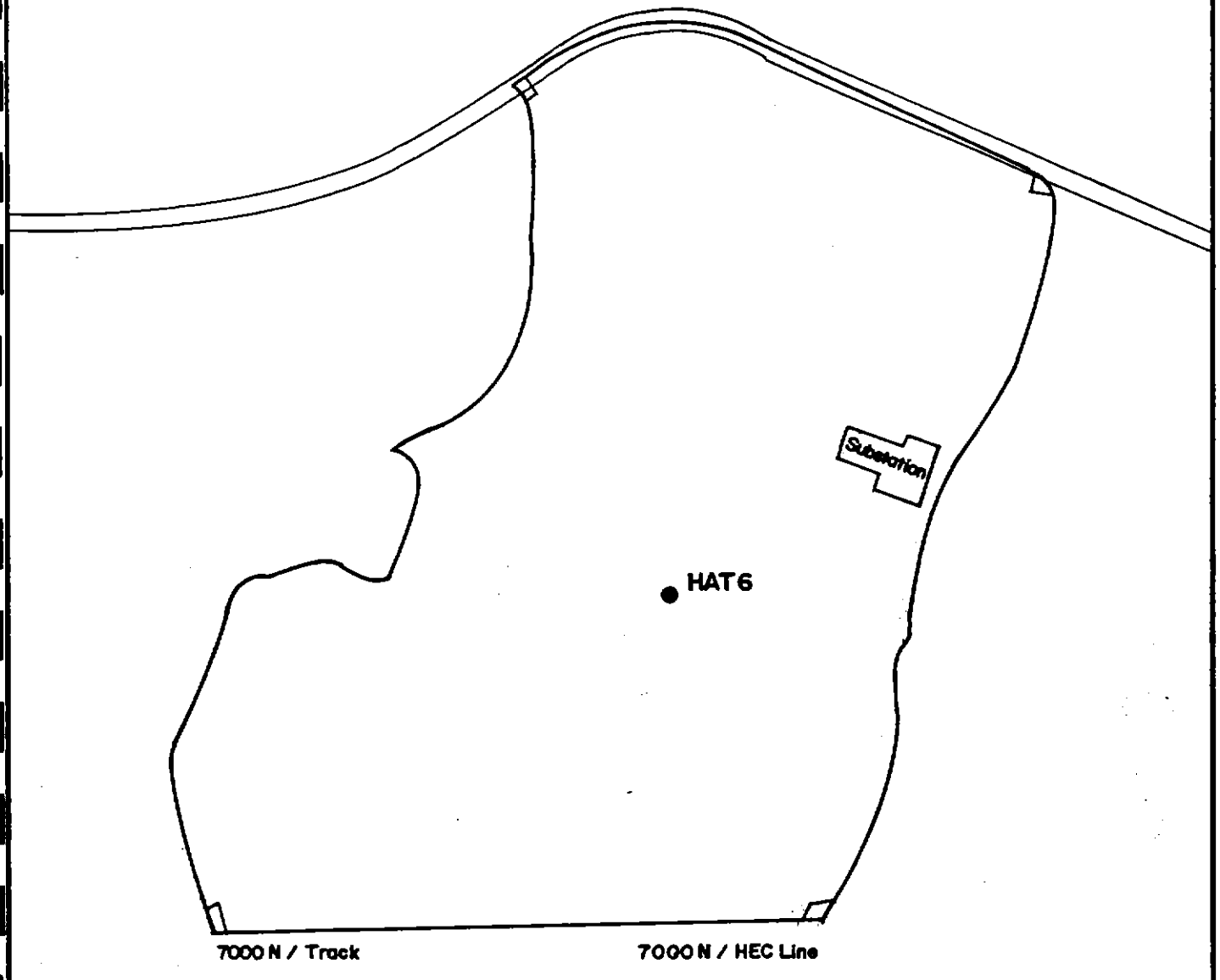


Fig. 1

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA	Compiled : JS
Init.	Date	Init.	Date	EL 15/73—HATFIELD	Drawn : JS
					Traced : AMcK
				DHEM-HAT 6 LOOP LOCATION	Checked :
Location Code :		Scale : As Shown		Date : August, 1989	Plate No. : MAC 251

599298

297

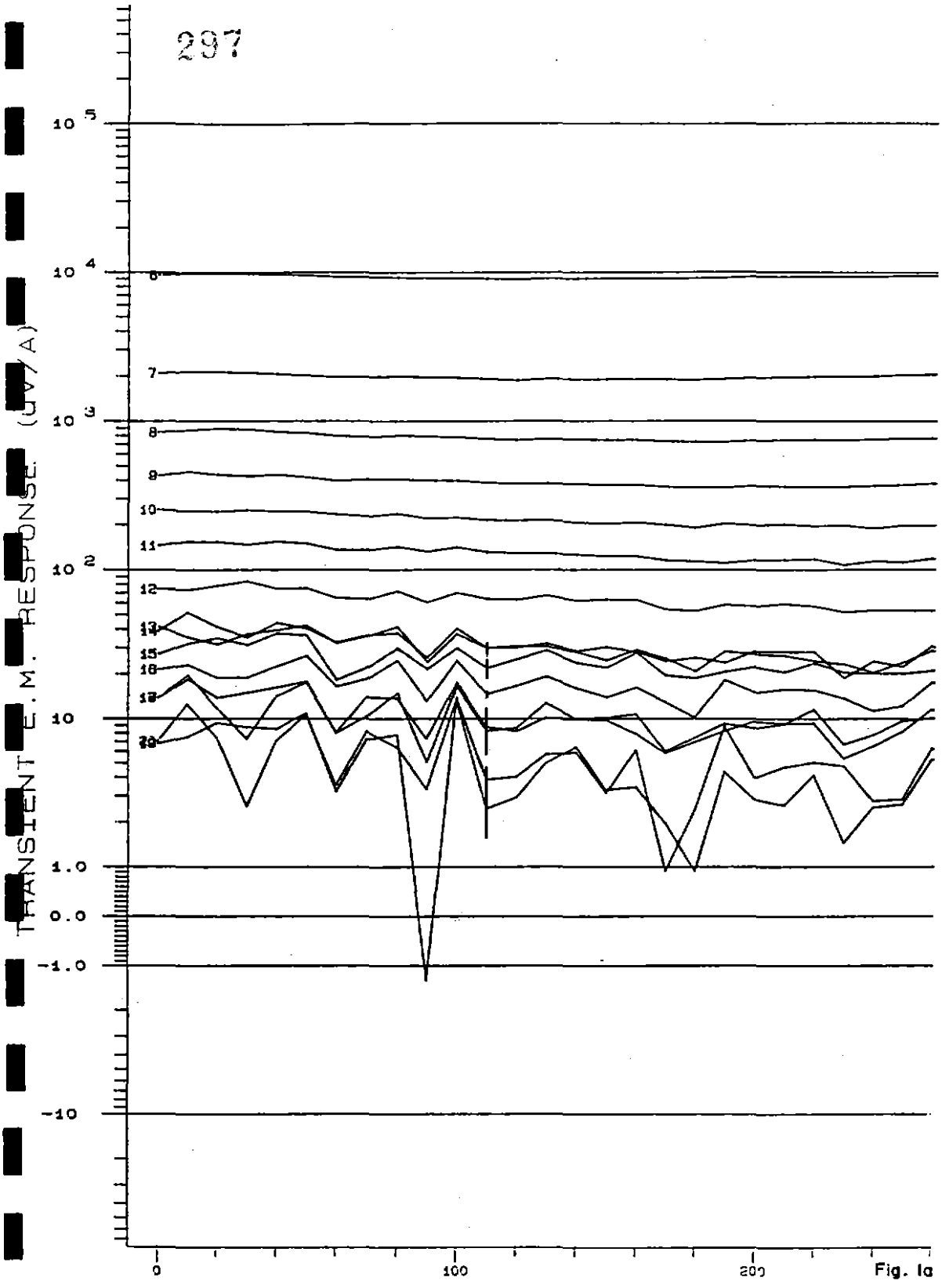


Fig. 1a

ABERFOYLE RESOURCES LTD.
AREA. WEST COAST LOGGING, TASMANIA
GRID: HATFIELD. MT. CHARTER (JOB 673)
MT CHARTER DH-**HAT 6** EARLY TIMES
SIROTEM Survey by SOLO Geophysics & Co. 8/ 6/87
SOLO hole ref. 1004 Reading interval 10.0 m
SCALE 1 : 2000 LOOP SIZE.
LOOP configuration . Drill hole
Plotted : 12:08 PM 8/ 9/87

599299

298

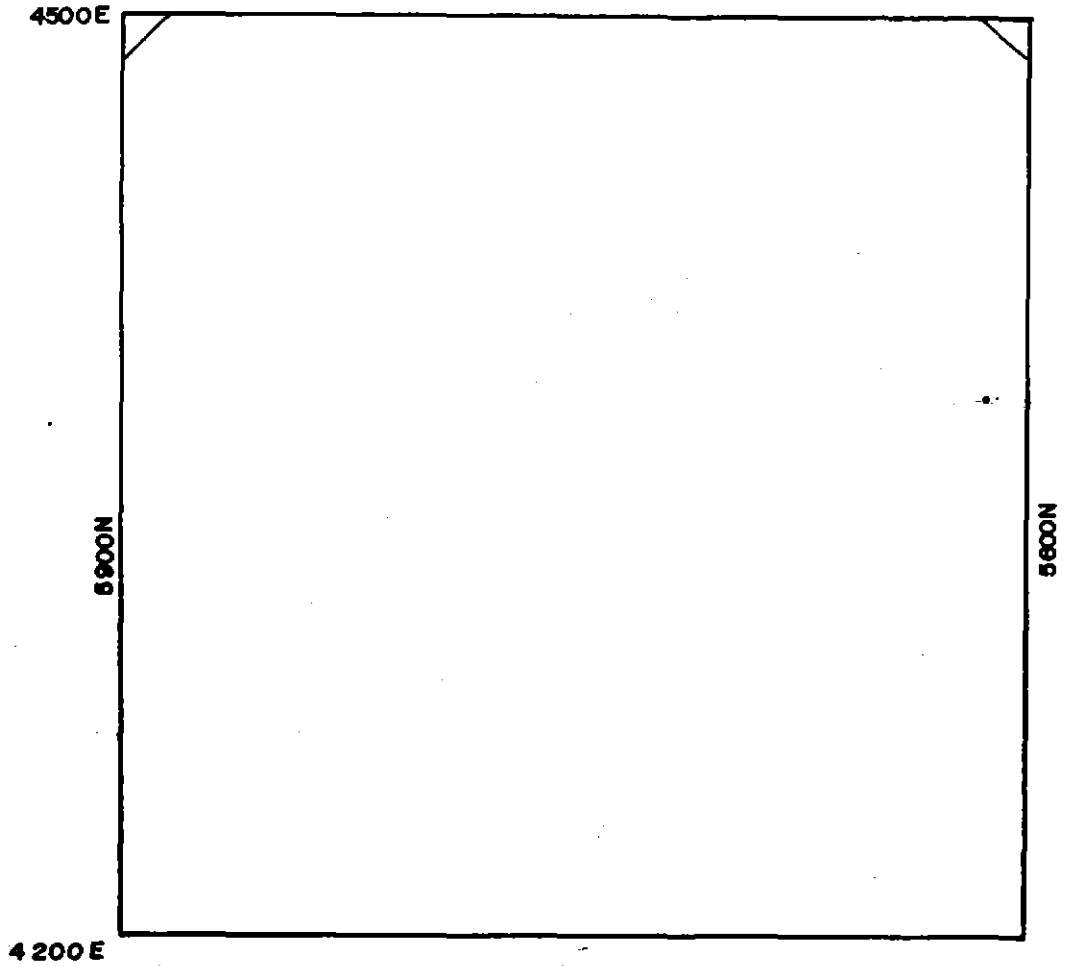
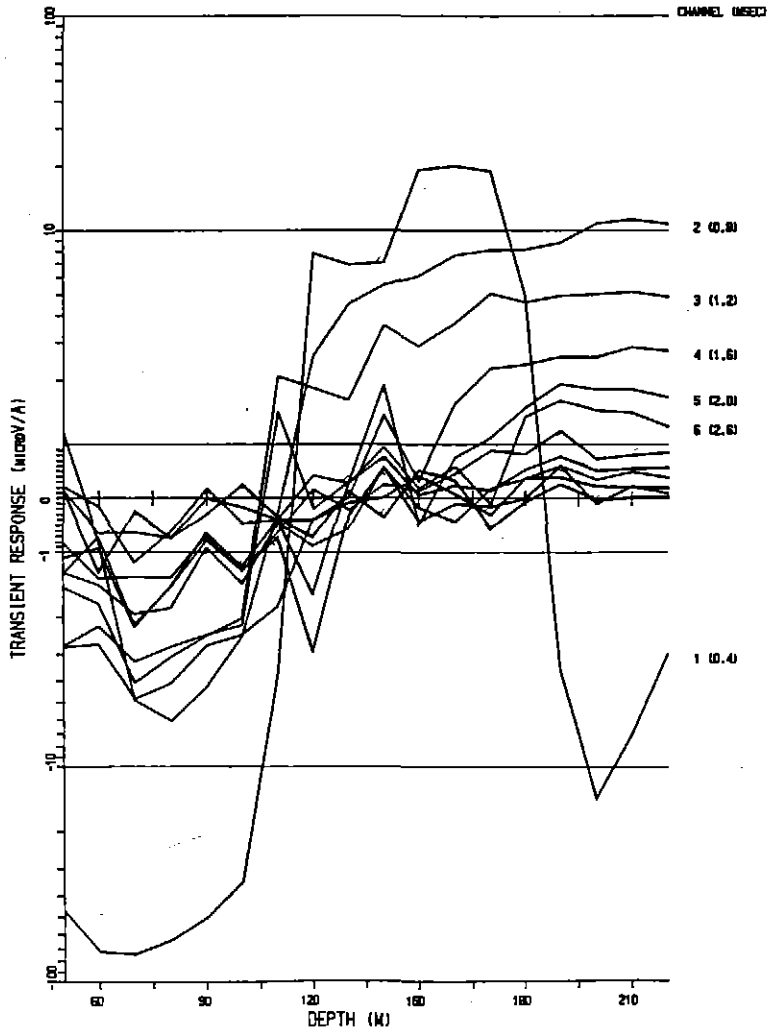


Fig. 2

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA	Compiled : JS
Init.	Date	Init.	Date	EL 15/73—HATFIELD	Drawn : JS
					Traced : AMcK
				DHEM-HAT 7 LOOP LOCATION	Checked :
Location Code :		Scale : As Shown		Date : August, 1989	Plate No. : MAC 252



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1987
CONFIGURATION : 200M SQUARE TRANSMITTER LOOP,
DRILL HOLE SURVEY
READING INT. : 15 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1237
CURRENT : 4.9 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

5 cm

ABERFOYLE EXPLORATION

QUE RIVER, TAS.
HATFIELD
SIROTEM PROFILE
LINE DDH HAT 7

SCALE - 1:1500 | Fig.2a

632

99900

300

599301

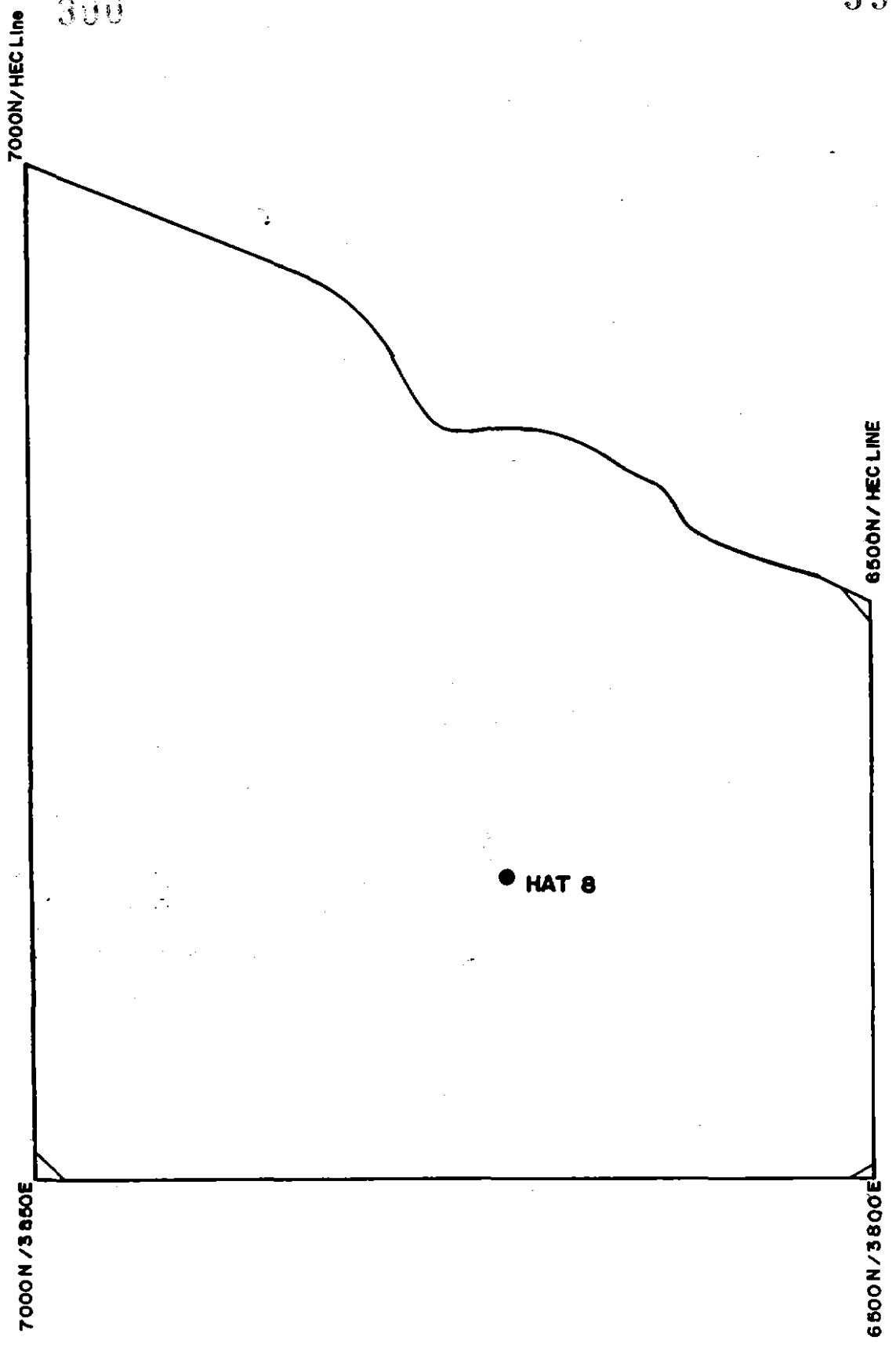


Fig.3

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

EL 15/73-HATFIELD

DHEM-HAT 8 LOOP LOCATION

Scale : As Shown

Date : August, 1989

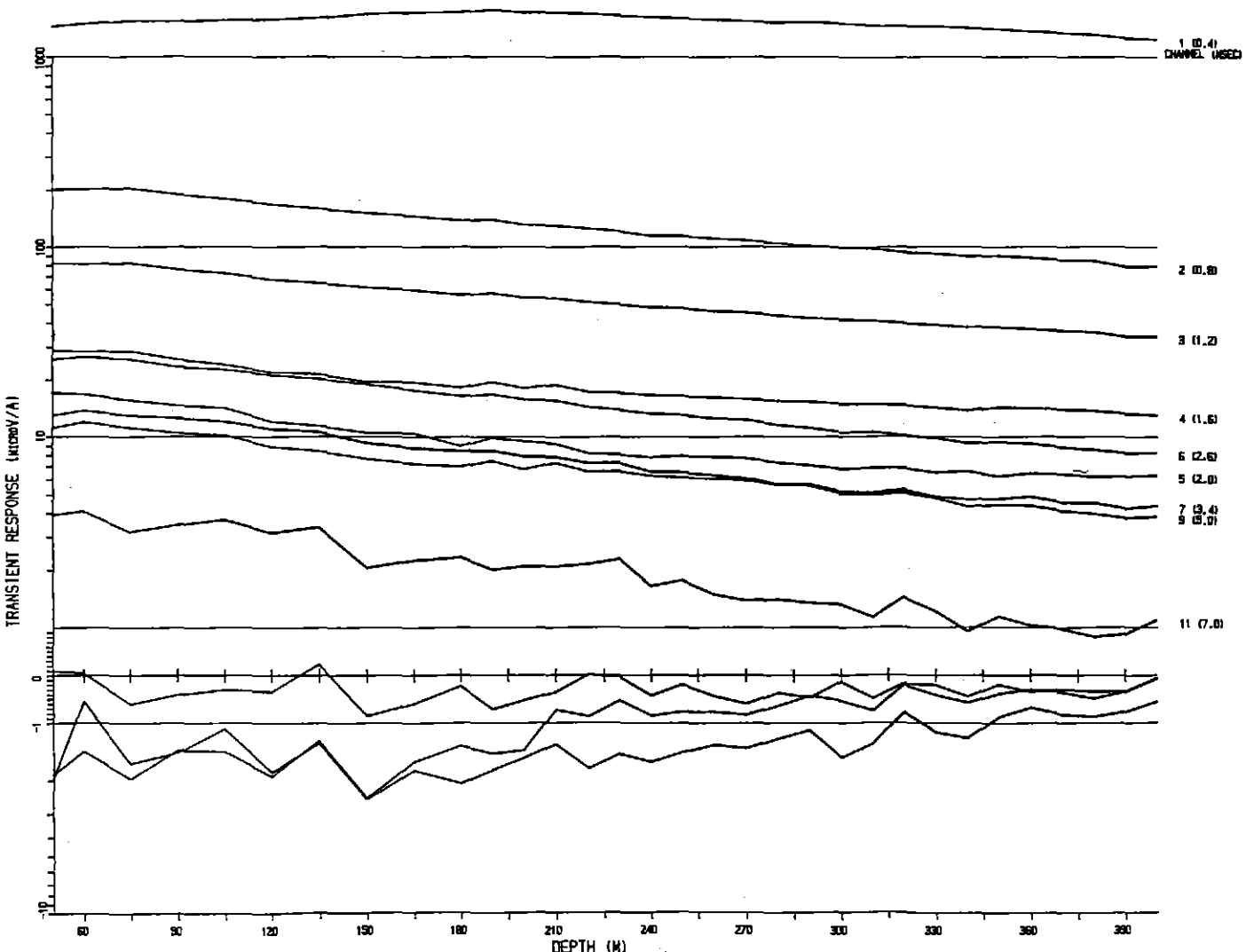
Compiled : JS

Drawn : JS

Traced : AMcK

Checked :

Plate No. : MAC 253



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1987
CONFIGURATION : 800M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 10 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 128P
CURRENT : 7.7 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

5 cm

ABERFOYLE EXPLORATION

QUE RIVER, TAS.
COSTEAN 6700N 4100E
SIROTEM PROFILE
LINE DDH HAT 8

SCALE - 1:1500 | Fig.3a

20066665

599303

302

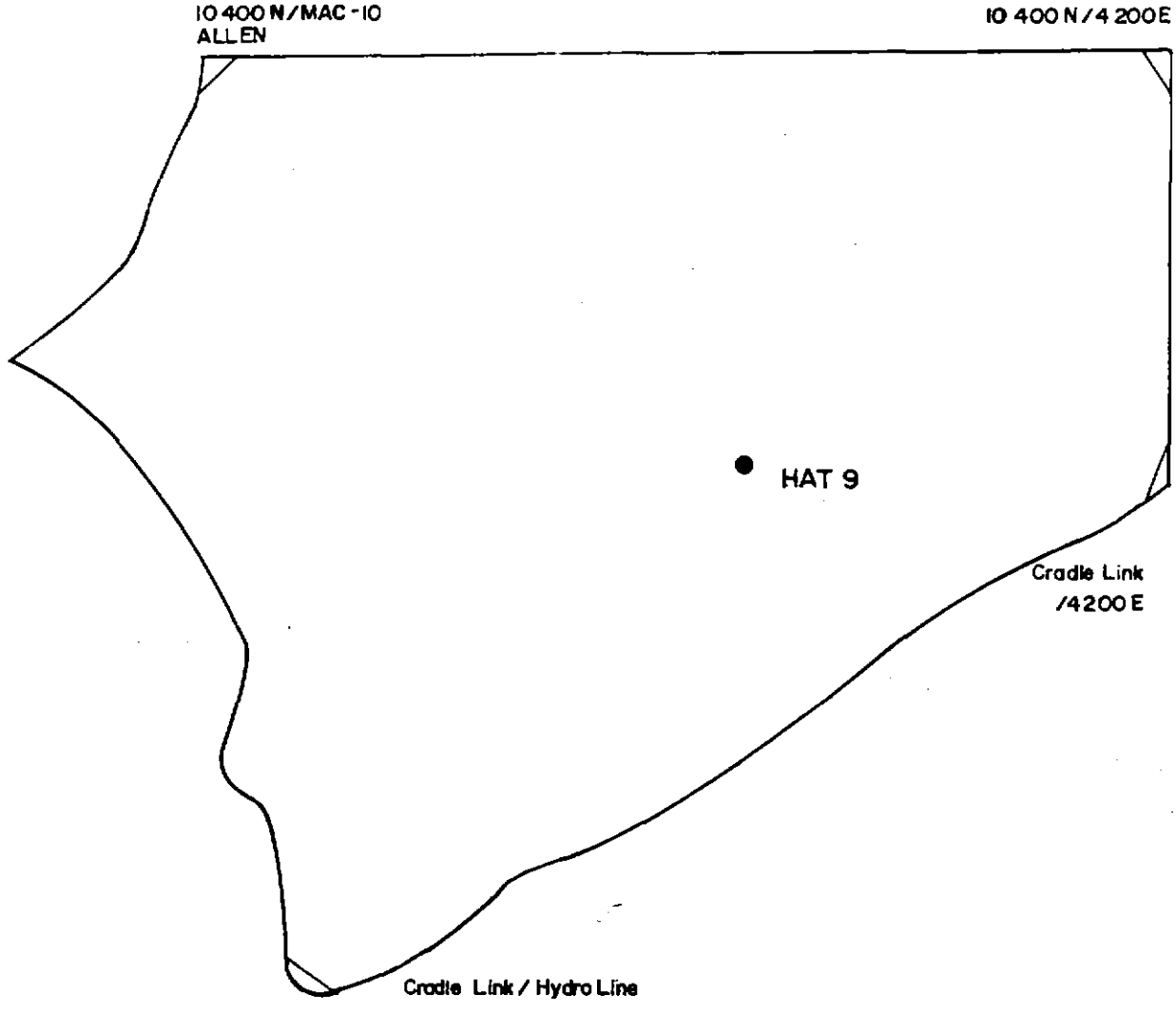


Fig.4

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA		Compiled : JS
Init.	Date	Init.	Date	EL 15/73-HATFIELD		Drawn : JS
						Traced : AMcK
				DHEM-HAT 9 LOOP LOCATION		Checked :
Location Code :				Scale : As Shown	Date : August, 1989	Plate No. : MAC 254

1511

599304

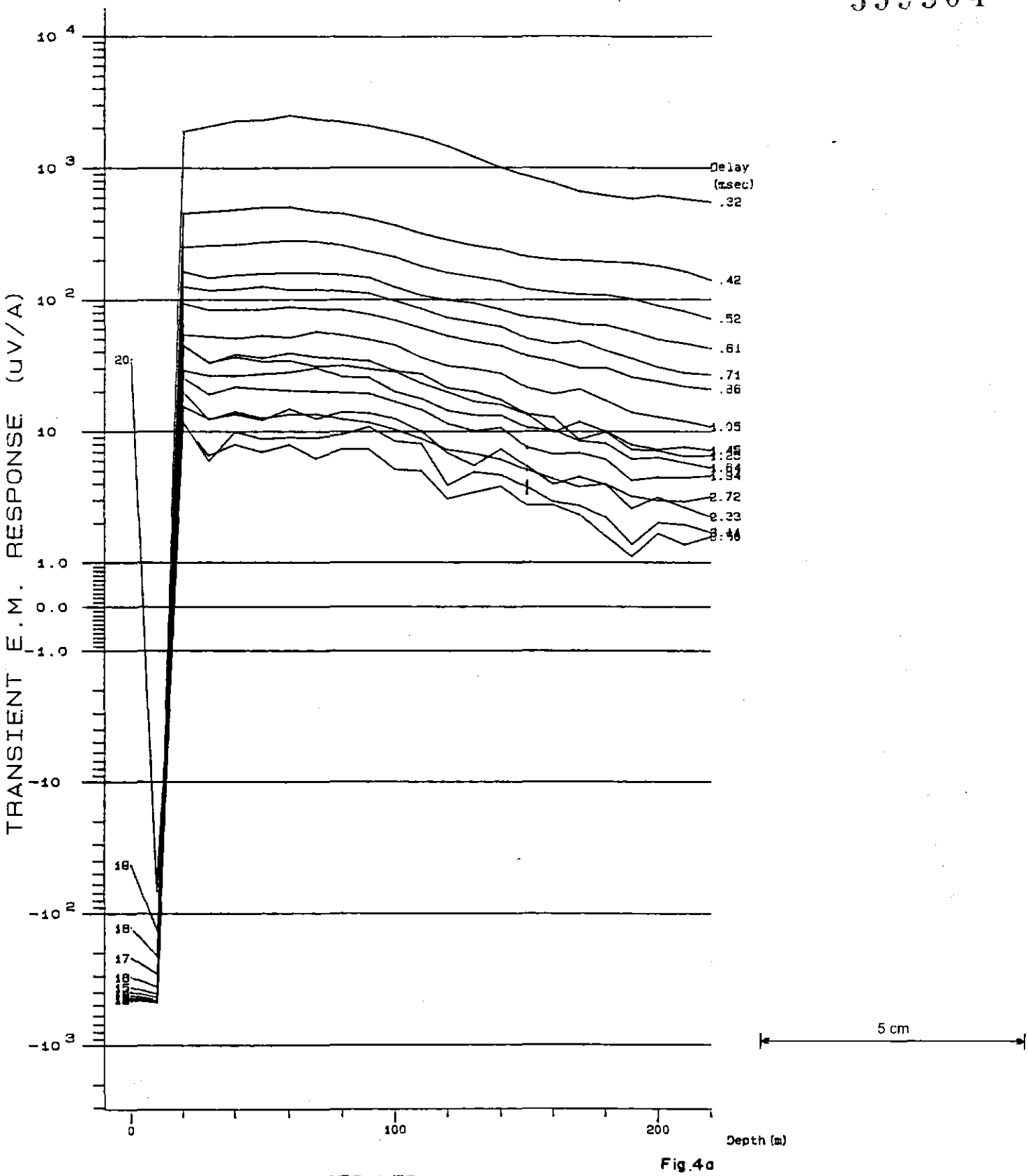
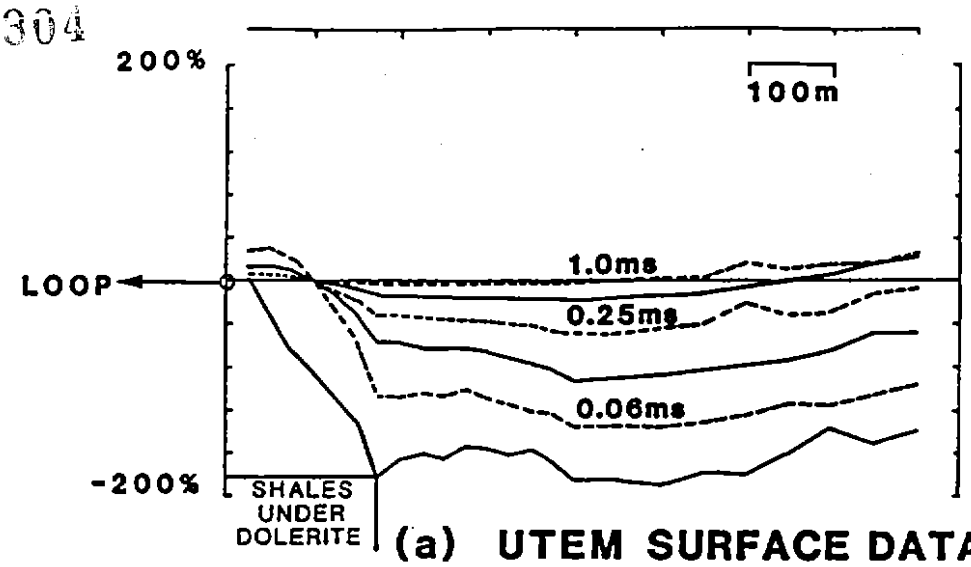
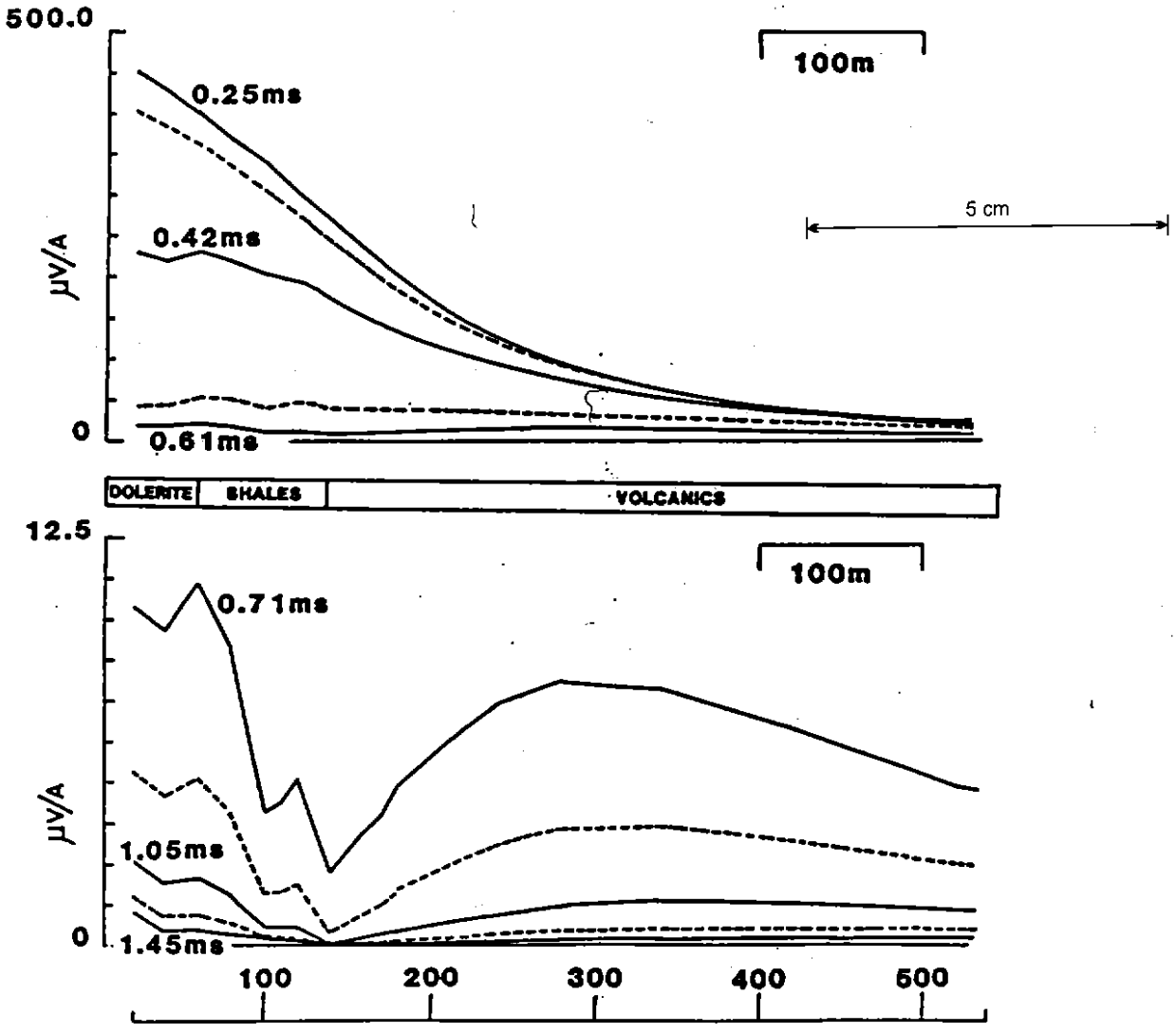


Fig.4a

ABERFOYLE RESOURCES LTD.
AREA. WEST COAST LOGGING. TASMANIA
GRID: HATFIELD. MT. CHARTER (JOB 673)
MT CHARTER DH- **HAT 9** EARLY TIMES
SIROTEM Survey by SOLO Geophysics & Co. 6/ 6/87
SOLO hole ref. 1002 Reading interval 10.0 m
SCALE 1 : 2000 LOOP SIZE:
LOOP configuration : Drill hole
Plotted : 12:05 PM 8/ 9/87



(a) UTEM SURFACE DATA
(CONTINUOUS NORMALISATION)



(b) DOWN-HOLE SIROTEM DATA

Fig. 5

Aberfoyle Resources Limited

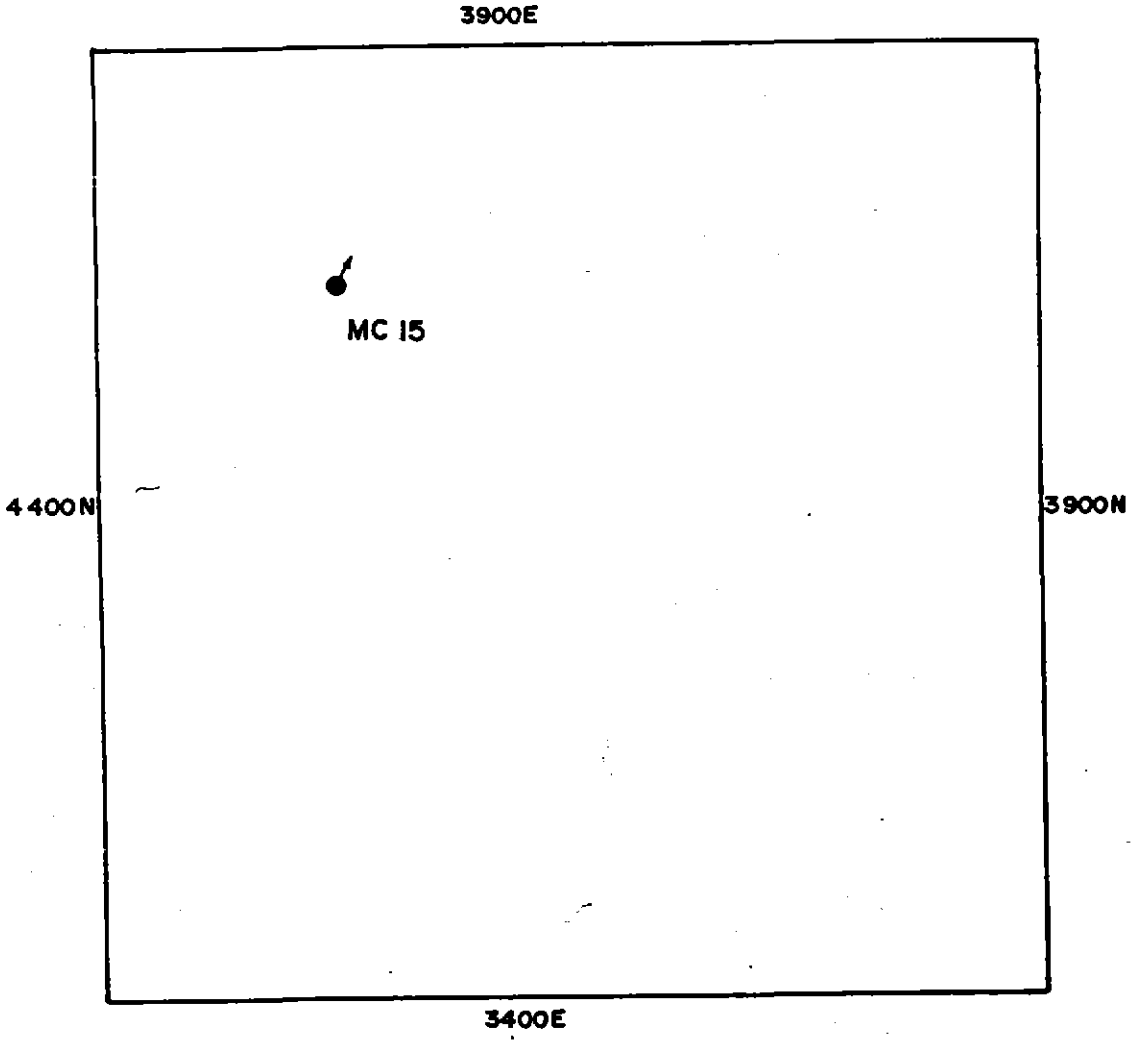
EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA	Compiled : JS
Init.	Date	Init.	Date	EL 15/73—HATFIELD	Drawn : JS
				MC-14 SIROTEM DHEM	Traced : AMcK
				AND UTEM SURFACE PROFILES	Checked :
Location Code :		Scale : As Shown		Date : August, 1989	Plate No. : MAC 260

305

599306

LOOP 1 of 1



500m X 500m LOOP

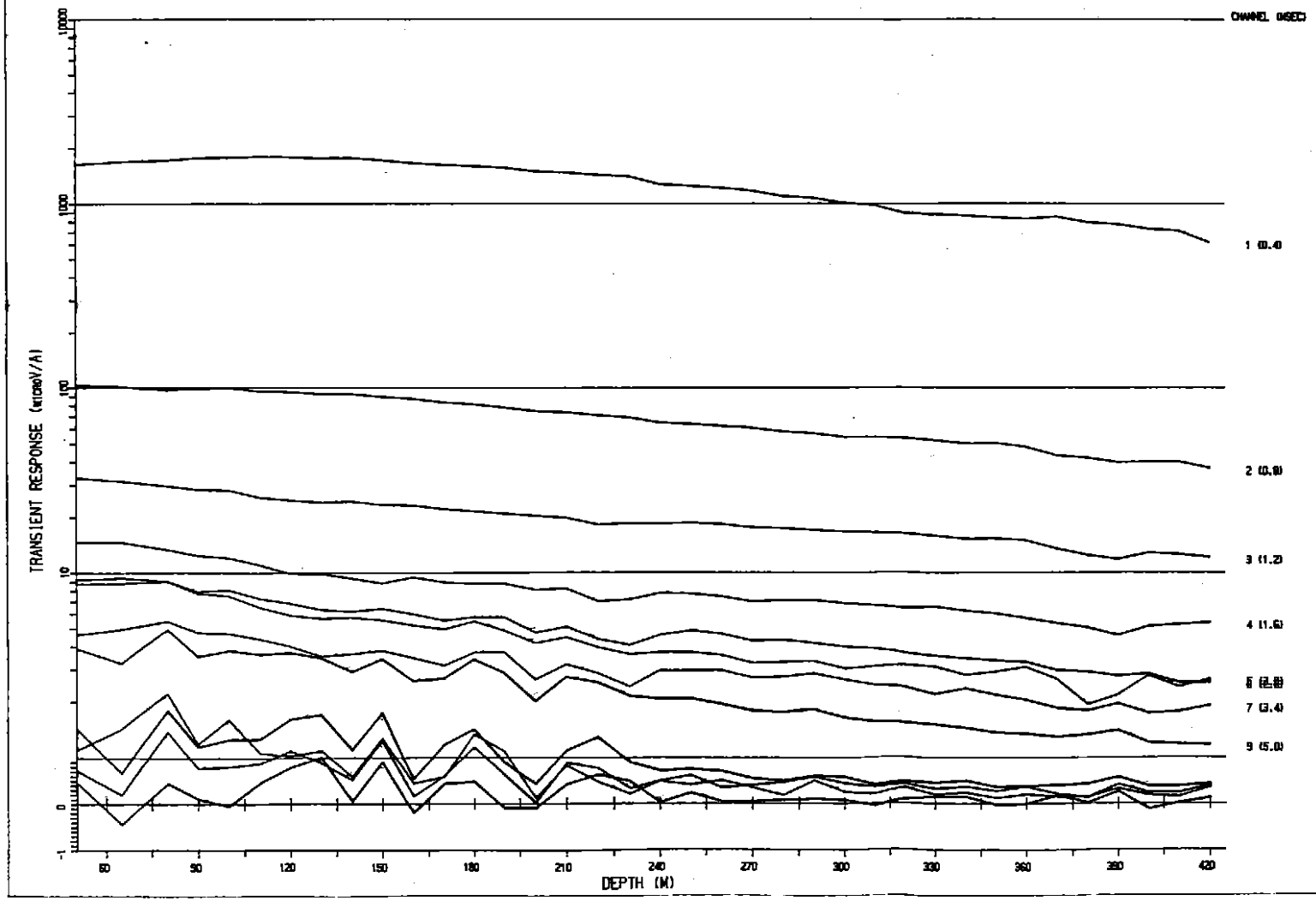
Fig. 6

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA		Compiled : JS
Init.	Date	Init.	Date			
				EL15/73 — HATFIELD		Drawn : JS
				DHEM MC 15 — LOOP LOCATION		Traced : AMc K
						Checked :
Location Code :				Scale : As Shown	Date : August, 1989	Plate No. : MAC 257

1511



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1987
CONFIGURATION : 600M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 15 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1237
CURRENT : 4.6 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

5 cm

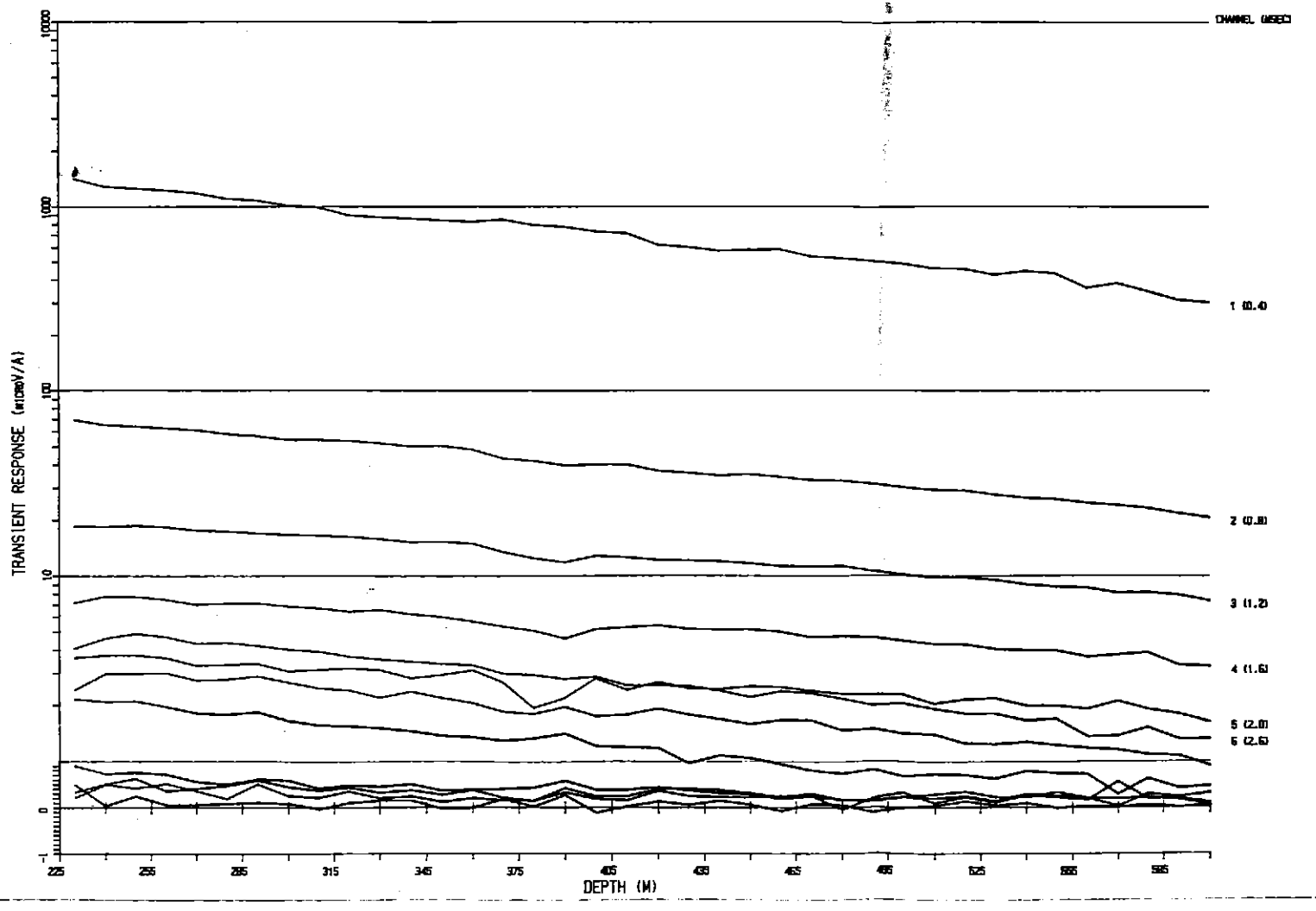
ABERFOYLE EXPLORATION

QUE RIVER, TAS.
MT. CHARTER
SIROTEM PROFILE
LINE DDH MC 15

SCALE - 1:1500 | Fig. 6a

3048

10693



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1997
CONFIGURATION : 500m SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 15 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1237
CURRENT : 4.6 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

5 cm

ABERFOYLE EXPLORATION

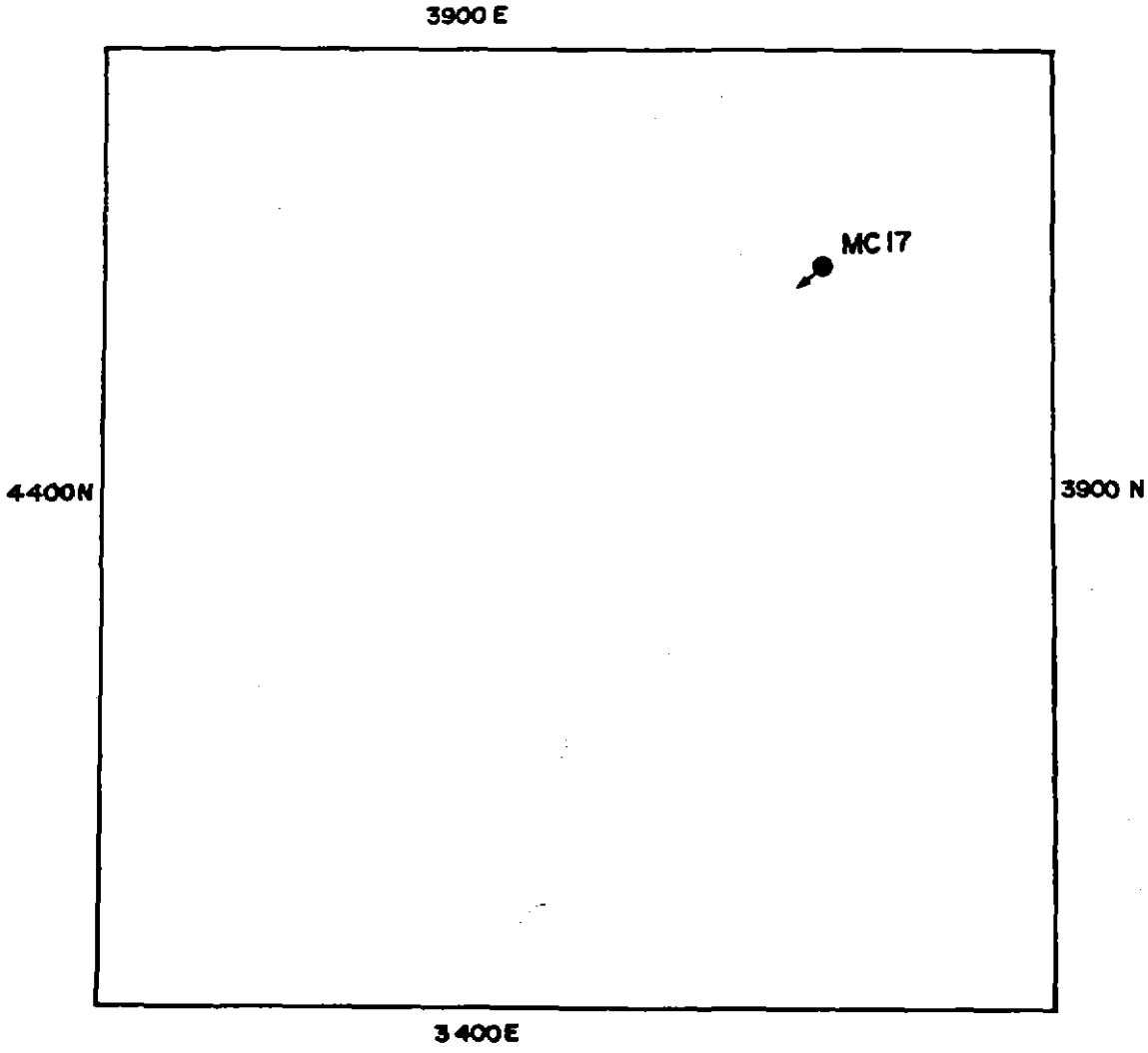
QUE RIVER, TAS.
MT. CHARTER
SIROTEM PROFILE
LINE DDH MC 15

SCALE - 1:1500 | Fig.6b

90933

303

599309



500m X 500m LOOP

Fig.7

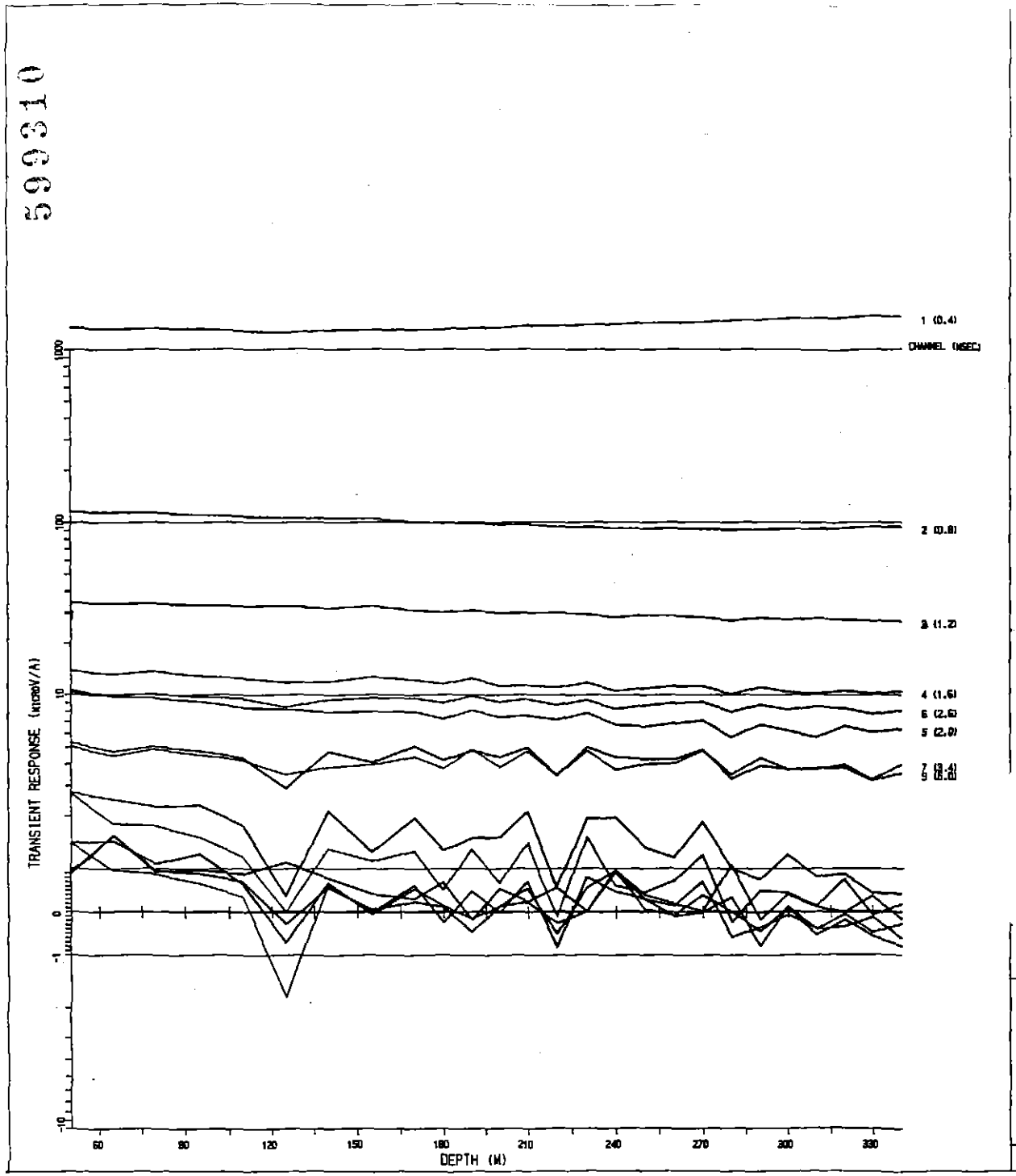
Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA	Compiled : JS
Init.	Date	Init.	Date	EL 15/73 — HATFIELD	Drawn : JS
					Traced : A McK
				DHEM-MC 17 LOOP LOCATION	Checked :
Location Code :		Scale : As Shown		Date : August, 1989	Plate No. : MAC 258

1511

599310



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1987
CONFIGURATION : 500M SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 15 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1237
CURRENT : 4.6 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND +1

5 cm

ABERFOYLE EXPLORATION

QUE RIVER, TAS.
MT. CHARTER
SIROTEM PROFILE
LINE DDH MC 17

SCALE - 1:1500 | Fig 7a

c. 303

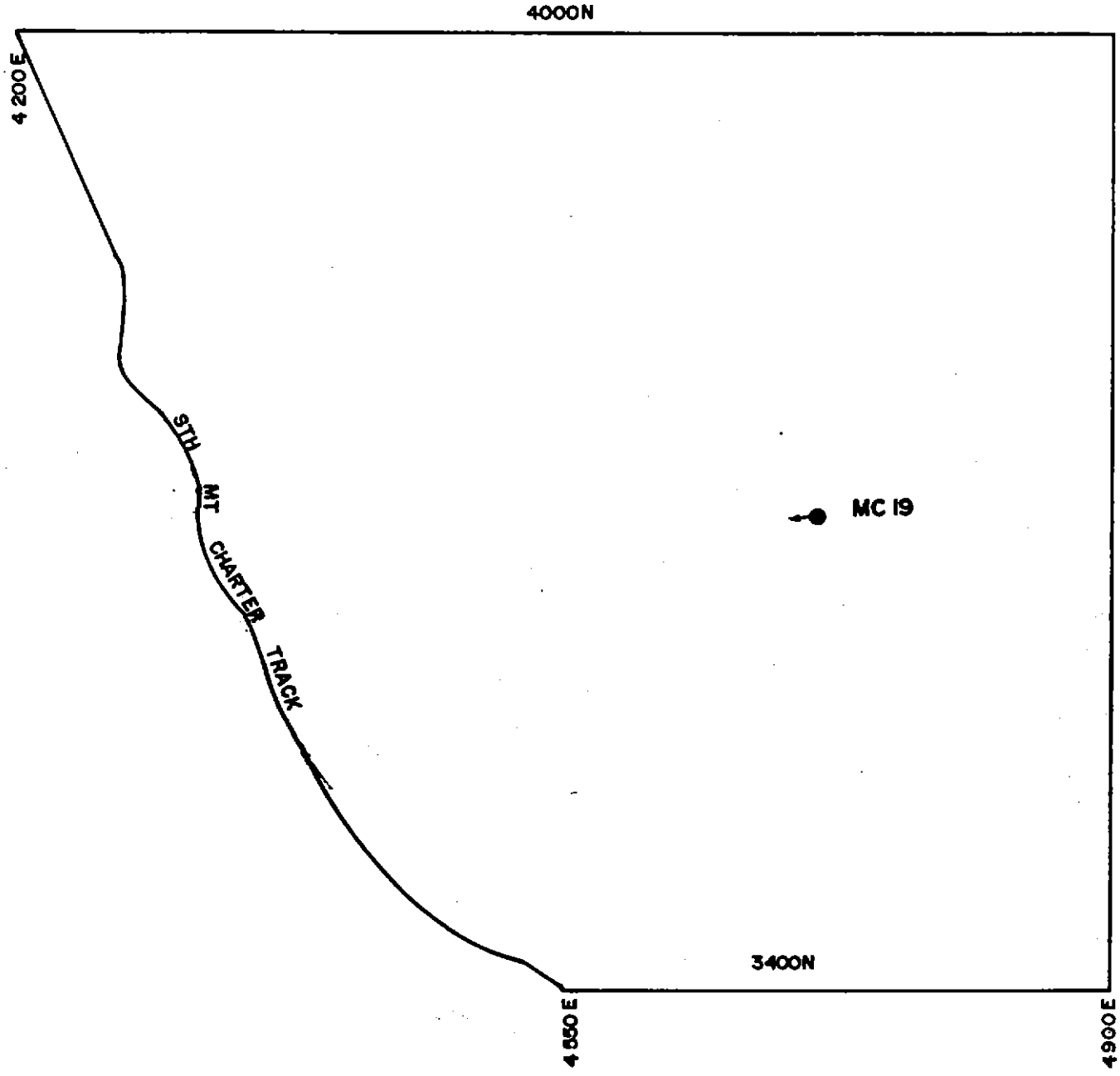


Fig.8

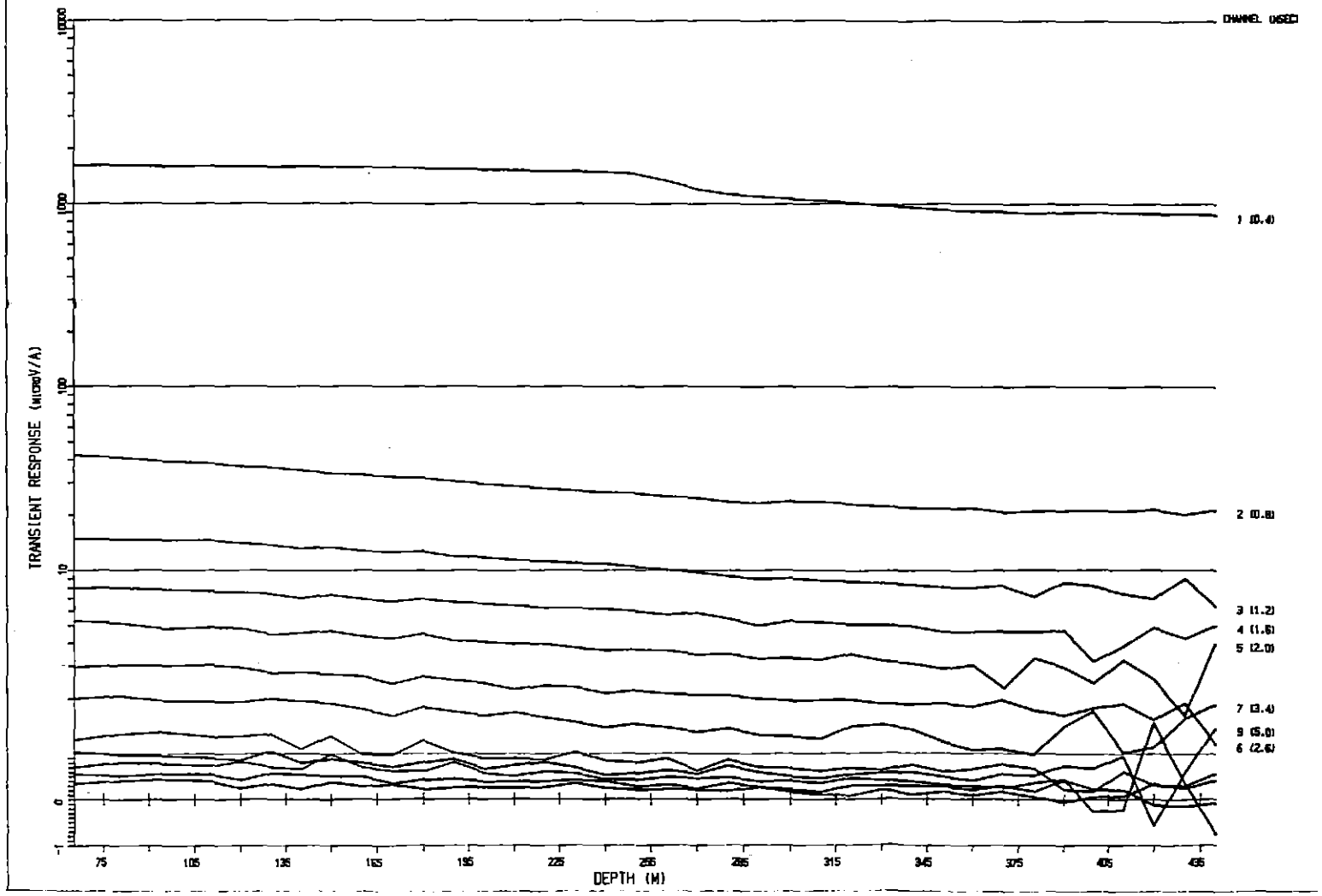
Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS				NORTH WEST TASMANIA	Compiled : JS
Init.	Date	Init.	Date	EL15/73 - HATFIELD	Drawn : JS
					Traced : AMcK
				DHEM-MC 19 LOOP LOCATION	Checked :
Location Code :		Scale : As Shown		Date : August, 1989	Plate No. : MAC259

1511

299312



SURVEY SPECIFICATIONS

DATA ACQUIS'N : McSKIMMING GEOPHYSICS P/L

SURVEY DATE : JUNE, 1987
CONFIGURATION : 575m SQUARE TRANSMITTER LOOP, DRILL HOLE SURVEY
READING INT. : 15 METRES
NO. OF STACKS : 2048
TRANSMITTER : MEDIUM POWER
RECEIVER : SIROTEM II S/N 1237
CURRENT : 5.5 AMPS
OPERATOR : P. McSKIMMING

PLOT SPECIFICATIONS

HORIZONTAL SCALE - 1:1500
VERTICAL SCALE - LOGARITHMIC
4CM. PER DECADE
LINEAR BETWEEN -1 AND 1

5 cm

ABERFOYLE EXPLORATION

QUE RIVER, TAS.
MT. CHARTER
SIROTEM PROFILE
LINE DDH MC 19

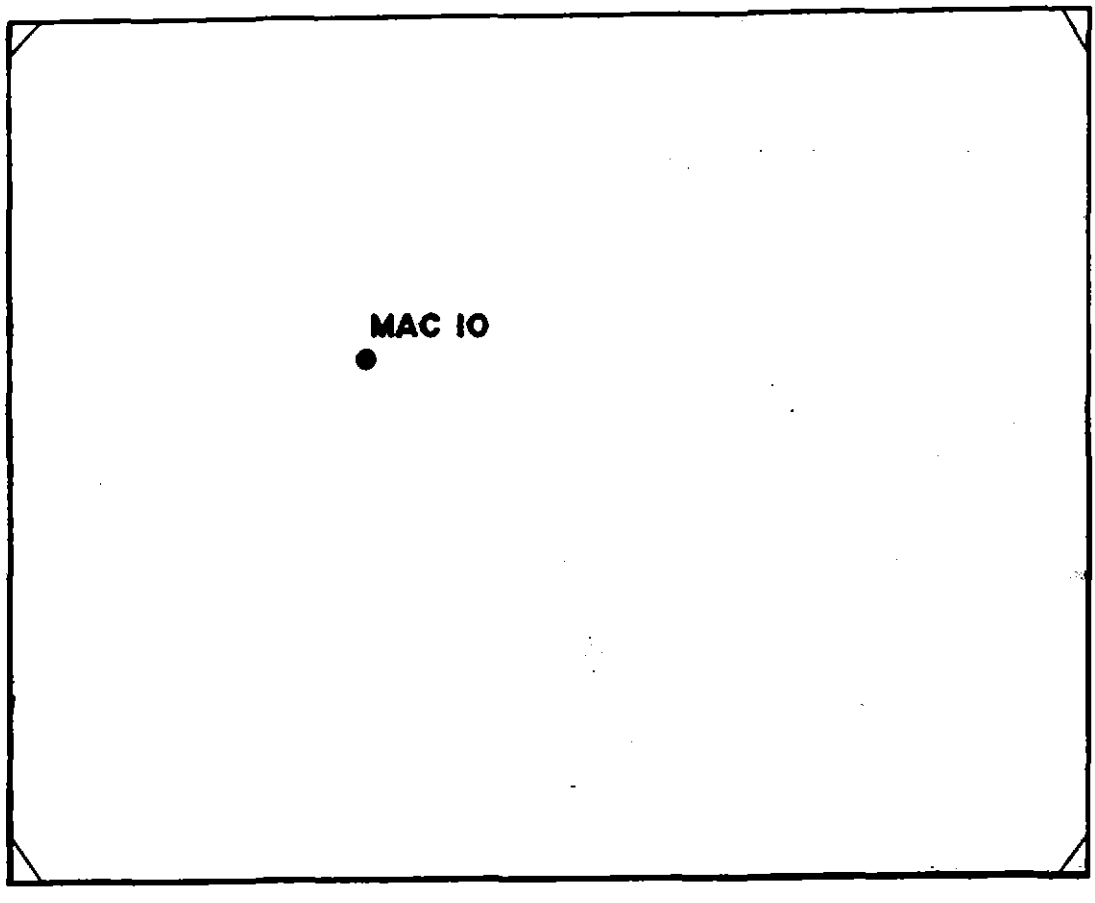
SCALE - 1:1500 | Fig.8a

312

599313

10800N/4000E

10800N/4500E



10400N/4000E

10400N/4500E

Fig.9

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

EL 15/73-HATFIELD

DHEM-MAC 10 LOOP LOCATION

Scale : As Shown

Date : August, 1989

Compiled : JS

Drawn : JS

Traced : AMcK

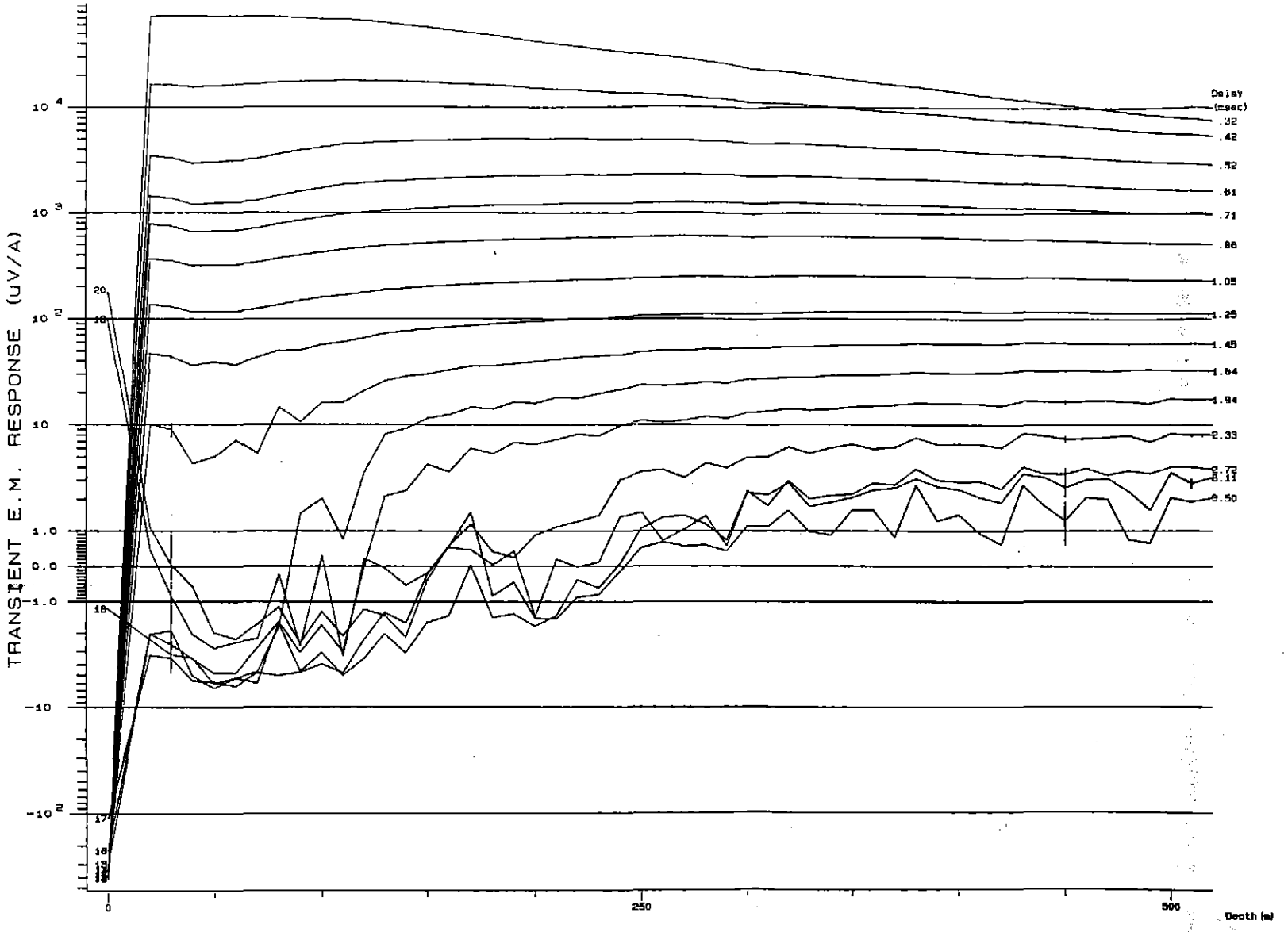
Checked :

Plate No. : MAC 255

1511

313

599314



ABERFOYLE RESOURCES LTD.
AREA. WEST COAST LOGGING, TASMANIA
GRID. HATFIELD. (JOB 673)
HATFIELD DH-MAC 10 EARLY TIMES
SIROTEM Survey by SOLO Geophysics & Co. 4/ 6/87
SOLO hole ref. 1000 Reading interval 10.0 m
SCALE 1 : 2000 LOOP SIZE
LOOP configuration . Drill hole
Plotted . 11.59 AM 8/ 9/87

5 cm

Fig.9a

SOLO

APPENDIX 8.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: HELLYER TAILINGS DAM

315

599316

HOLE NO: HAT-9
PAGE: 1 of 5
LOGGED: AMM
DATE: MAY 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2–42			BLACK SHALE	MASSIVE FEATURELESS BLACK SHALE. NO VEINING. NO BRECCIATION					FRESH AT SURFACE			
				STRONGLY FAULTED CONTACT SHALE BRECCIA REMINERED WITH MILKY QUARTZ								
			35.0 BROWN LAVA BRECCIA	BROWN IS STRONGLY BROKEN TO FUDGY. COMPETENT CORE = DULL GREY-GREEN (SLIGHTLY LEACHED) FRAGMENTAL ROCK CONSISTING OF IRREGULAR DARK CLASTS (DIFFUSE MARGINS) OF VESICULATED BASALT IN DARKER BASALTIC MATRIX. MATRIX: CLAST ≈ 60:40								
								20.9 CORE SOFT FUDGY BUT NOT OXIDIZED			FROM 20.9 TO 56.0 m BOTH SHALE AND BASALT ARE FUDGY AND VERY BROKEN WITH INTERMITTENT ZONES OF SOLID CORE. BOTH UNITS ESPECIALLY FUDGY AROUND CONTACT.	
								22.4 FUDGY ZONE 27.0				

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: HELLYER TAILINGS DAM

316 DIAMOND DRILL LOG 599317

HOLE NO: HAT-9
PAGE: 2 of 5
LOGGED: AMH
DATE: MAY 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44				A HIGHLY VESICULATED AUTO-BRECCIATED LAVA. SIMILAR LAVA OCCURS BELOW SHALE IN VICINITY OF HAT-1. NO LARGE (10cm) VESICLES AS IN FOLLOWING UNIT.									
46													
48													
50													
52													
54				GRADATIONAL CONTACT OVER 1.0m									
56			56.5			56.5.			56.0				
58			MASSIVE VESICULAR BASALT LAVA.	TYPICAL GREEN-GREY VESICULAR BASALT WITH 'PAINT SPLASH' QTZ/CARB VEIN VESICLE FILLING. PREDOMINANTLY MASSIVE BUT A VAGUE BRECCIA TEXTURE IS COMMON - PROBABLY DUE TO AUTOBRECCIATION. SOME HYALOCLASTITE BRECCIATION WITH CHERTY INFILL (e.g. 88.0m)		'PAINT SPLASH' CALCITE/ QUARTZ VEINS AND VESICLE FILL	3					58.6 - 58.8 FINE GRAINED PYRITE AROUND QTZ/CALC. VEIN MARGINS	
60													
62													
64													
66													
68													
70								69.0 TR BRN-RED SPH. IN CALC/QTZ VEIN.					
72													
74						"	3						
76													
78													
80													
82													
84													

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: HELLYER TAILINGS DAM

317

DIAMOND DRILL LOG

599318

HOLE NO : HAT-9

PAGE: 3 of 5

LOGGED: AMH

DATE: MAY 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86									85.0 ↑ BRECCIA ZONE MAG. WITH FAULT.				
88							3						
90													
92													
94				FINELY INTERBEDDED MICA SANDSTONE AND SILTSTONE + Y-VIV	94.7								
96					PATCHY BUFF/PINK (CALCITE?) AND BLACK CHLORITIC ALT. → Bx APPEARANCE.								
98				98.0 VERY SHARP, SLIGHTLY IRREGULAR CONTACT. 98.7	98.→	98.→ "	3		F 93.9: 70cm WIDE 10° TO CA;			FAULT CONTAINS FRAGMENTS OF BASALT AND IS HEALED WITH QUARTZ / CALCITE	
100			BASALTIC ± MASSIVE	1 BLACK MASSIVE SHALE 2 FINE; ANGULAR SHALE AND BRECCIATED BASALT FRAGS; C:M ± 10:90 3 GREY MICA. SS ± BLACK SHALE, FINE (≤1mm) INTERBEDDED WITH CONTORTED LAMINATION		CALCITE + MAG CHLORITE REPLACEMENT (II CUBES)						
102			103.4		103.4								
104			105.0 IIA IIB		INTENSE PERVASIVE OR BRECCIA MATRIX SELECTIVE PINK FUSIFIED ALT		5						
106			FELDSPAR PHYRIC ANDESITE	LIGHT TO DARK GREY-GREEN, ANGULAR VESICULAR (VES 2-10mm CALCITE) FRAGS OF BASALT IN GREY CHERTY MATRIX (JIGSAW FIT → HYALOCLASTITE) C:M ± 70:30 GRADING INTO								
108				BRECCIA WITH SIMILAR CLASTS IN DARK GREY BASALTIC MATRIX SOME BASALT CLASTS ARE ALTERED TO PINK - BUFF COLOUR								
110						"	2						
112				TYPICAL STRATUM FELDSPAR PHYRIC MASSIVE AND (ALTERATION ENHANCED BRECCIA) ANDESITE LAVA								
114				NOTE BLACK SHALE MATRIX TO ANDESITE BRECCIA, 103.4 – 108.1									
116					120.→								
118					"		4						
120													
122													
124						"	2					99.9 – 103.4 HYALO / AUTO BRX LAVA?	
126													

ABERFOYLE EXPLORATION

PROJECT : HASFIELD

PROSPECT: HELLYER TAILINGS DAM

318

DIAMOND DRILL LOG

593319

HOLE NO: HAT-7

PAGE: 4 of 5

LOGGED: BMH

DATE: May 1987

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128					"	4	"	2						
130														
132														
134														
136														
138														
140														
142														
144														
146														
148					"	4	"	2						
150														
152														
154														
156														
158														
160														
162														
164														
166														
168					"	4	"	2						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

319

599320

PROJECT : Hatfield

PROSPECT: Hellyer Tailings Dam

HOLE NO: HAT-7

PAGE: 5 of 5

LOGGED: SMH

DATE: May 1987

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												
184				184.0 EOH.								
186												

SAMPLE NO	: 378359
LOCATION	: HAT-9/45.1
REPRESENTATIVE OF	: 33.0 - 56.5
REMARKS	: Scoriaceous basalt lava breccia (Flow top)

SAMPLE NO	: 378360
LOCATION	: HAT-9/66.2
REPRESENTATIVE OF	: 56.5 - 99.0
REMARKS	: Basalt Lava with vague breccia texture. What alteration is causing faint brown-pink tint in some clasts?

SAMPLE NO	: 378361
LOCATION	: HAT-9/98.1
REPRESENTATIVE OF	: Part of 98.0 - 98.7
REMARKS	: Polymict volcaniclastic - part of interflow sediment.

SAMPLE NO	: 378362
LOCATION	: HAT-9/98.6
REPRESENTATIVE OF	: Part of 98.0 - 98.7
REMARKS	: Finely layered mica sandstone/siltstone - part of interflow sediment.

SAMPLE NO	: 378363
LOCATION	: HAT-9/99.0
REPRESENTATIVE OF	: 98.7 - 99.0
REMARKS	: Basalt hyaloclastite breccia. What is composition of grey cherty matrix?

SAMPLE NO	: 378364
LOCATION	: HAT-9/100.5
REPRESENTATIVE OF	: 99.0 - 103.4
REMARKS	: Basaltic Breccia?

SAMPLE NO	: 378365
LOCATION	: HAT-9/105.5
REPRESENTATIVE OF	: 103.4 - 108.1
REMARKS	: Feldsparphyric andesite lava breccia with shale matrix.

SAMPLE NO	: 378366
LOCATION	: HAT-9/156.5
REPRESENTATIVE OF	: 103.4 - 184.0
REMARKS	: Typical pink altered F.P. andesite.

321

23 JUN REC'D
599322

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

FAX. 08-363 1820

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

19th June, 1987

REPORT CMS 87/5/19

YOUR REFERENCE:	Letter dated 14.5.1987
DATE RECEIVED:	19th May, 1987
SAMPLE NOS.:	378359 - 378366
SUBMITTED BY:	A.M. Hespe
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

022

REPORT CMS 87/5/19

Eight samples of drill core from DDH/HAT-9, west of Hellyer, were received for routine petrological examination. Representative thin-sections were prepared, examined in transmitted light and together with respective offcuts in oblique incident light, with carbonate stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

As sampled, this drill hole reflects a sequence of basaltic, typically scoriaceous breccias, with intercalated polymict sandstone and sedimentary breccias, and a basal rhyolitic breccia unit.

Basalts exhibit sericite-quartz-carbonate-chlorite(-albite) alteration assemblages, consistent with the "lower basalt" sequence. Intercalated sediments are similarly altered. These units, whilst polymict, appear devoid of the low-grade, regionally metamorphosed pelitic sediment components otherwise typical of sedimentary breaks within the Que/Hellyer volcanic sequence.

The "basal" rhyolitic breccia unit locally includes intraclasts of carbonaceous pelitic sediment (sample 378365). General features are not inconsistent with an intrusive breccia paragenesis, although finer detail is obscured by alteration effects.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
378359 (T.S. 57973)	Scoriaceous Breccia. Illitic clay and crypto- to microcrystalline quartz with semi-pervasive cloudy microcrystalline sideritic carbonate. Frequent carbonate-pseudomorphed feldspar, silicified pyroxene phenocrysts.	Clay-quartz-matrixed to semi-moulded breccia, with porphyritic pumice/ scoria clasts.	Leucoxenised opaques, thinly disseminated chromite, sporadic clots of pyrite.	Psammite to lapilli grade lithic (lava) breccia with scoriaceous basaltic characteristics. Detail obscured by pervasive clay-quartz-carbonate alteration.
378360	Basalt Breccia. Clasts of chlorite/cloudy carbonate-altered, variably chlorite-quartz-albite-amygdaloidal basaltic lava. Sparse matrix, veinlets and fracture-controlled replacive zones of microcrystalline albite.	Psammite to agglomerate grade, lithoclastic. Multistage veining. Locally albitised, lithoclastic psammite-matrixed?	Early chloritic, intermediate calcite-quartz, late albite veinlets. Traces of adularia, sphalerite, pyrite, chromite. in amygdales.	Thoroughly altered/multiply veined basaltic lava breccia. Faint brownish mottlings are zones of weakly Fe-pigmented albite. Sulphide concentrated
378361	Polymict Breccia. Framework of sericite-quartz-carbonate-chlorite-altered lava clasts, impure chert clasts, minor pelite clasts, quartz grains, sericitic albite grains. Carbonaceous pelitic/sericitic impure carbonate-stained cherty matrix.	Poorly sorted, crudely banded, vaguely slumped, lithoclastic.	Clastic muscovite flakes, leucoxenic semi-opaques, semi-pervasive fine to ultrafine pyrite.	Composite (polymict) sedimentary breccia of basaltic, andesitic and sedimentary (pelite, chert) components. Sericite-quartz-calcite(-chlorite)-altered and pyritised.
378362	Polymict Sandstone. Framework of silt- to fine sand-sized quartz, subordinate sericitic albite grains, sericitic pelite, poorly determinate lava clasts, muscovite flakes. Carbonaceous pelite-parted, micaceous silty matrix.	Finely banded fine sandy siltstone/silty fine sandstone. Weakly microfractured/incipiently crenulated.	Semi-pervasive clots of cloudy sideritic carbonate. Minor pyrite. Clastic leucoxene. Sparse quartz veinlets.	Compositional affinities with 378361, relatively weakly volcanomict. Similarly, but relatively mildly altered and weakly pyritised.
378363	Basalt Breccia. Clasts of albite-carbonate-sericite-quartz-altered, sericite-amygdaloidal chloritic glass-mesostasised basaltic lava. Impure (sericitic, dolomitic) chert-cemented, psammitic lithoclastic matrix.	Analogous to 378360; relatively amygdaloidal/trend scoriaceous.	Leucoxenised opaques, minor pyrite disseminations. Minor carbonaceous pelitic xenoliths. Chloritic quartz-calcite veinlets.	Strictly a psammite to agglomerate grade, xenolithic (?slumped) lithic tuff. Matrix is dolomitic, argillaceous impure chert, typically cryptocrystalline,
378364	Scoriaceous Breccia. Clasts of chlorite-carbonate(-quartz-albite)-altered pumice and amygdaloidal lava clasts. Matrix of sericitic quartz with varying proportions of sericite, calcite, minor albite.	Weakly dimensionally orientated, psammite to lapilli grade, scoriaceous lithic breccia. Semi-crustiform matrix.	Leucoxenised opaques, traces of chromite, minor traces of pyrite.	Basaltic scoriaceous breccia with a hydrothermal quartz-sericite-calcite interclast cavity-filling matrix in contrast to the impure chert cement in 378363.
378365	Rhyolitic Breccia. Corroded quartz and calcite-sericite-stained albite phenocrysts, phenocrystal clusters in a sericite/cryptocrystalline quartzofeldspathic matrix with spongy carbonate aggregates, minor sericitic quartz-calcite veinlets.	Massive to moulded lithoclastic. Microfelsitic to perlitic.	Disseminated pyrite. Carbonaceous stainings, carbonaceous shale as xenoliths and, locally, matrix.	Problematical rock, composite of (altered) glassy rhyolitic porphyry and carbonaceous pelitic components. Conceivably a xenolithic intrusive breccia.
378366 (T.S. 57980)	Rhyolitic Breccia. Corroded quartz and variably calcitised albite phenocrysts and crystal fragments in a matrix of sericitic-chloritic felsitic devitrified glass. Minor chlorite amygdales, irregular calcite veinlets.	Weakly flow-structured, massive to moulded lithoclastic, felsitic to microspherulitic.	Leucoxenised opaques, minor traces of pyrite.	Close affinities with 378365. Main contrast is absence of pelitic components. Exhibits semi-chilled intrusive breccia characteristics.

599324

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
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599325

ANALYTICAL REPORT No. 23.3.08.04472

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

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

ORDER No.	PROJECT
2378	

DATE RECEIVED	RESULTS REQUIRED
12/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	19/05/87	1	8

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	378359/66	SC				Cu,Pb,Zn,Ag,Ni/101,As/114					
	378359/66	SC				Ba,Cr,Zr,Ti/401					
	378359/66	SC				Au/309					

RESULTS TO

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

RESULTS TO

REMARKS

Hot - 9

Petrology Samples

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
[h]ole 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
[r]ock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
[S]oil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[P]ulp	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
[s]tream sediment	SS					fluorescence	FLUOR
[h]eavy mineral	HM					inductively coupled plasma	ICP

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325

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599326

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04472	19/05/87	2378	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378359	130	265	460	0.5	255	11	5400	780	430
2	378360	75	765	2200	0.5	270	17	1700	800	370
3	378361	20	60	65	<0.5	105	26	60	190	60
4	378362	10	15	70	0.5	125	40	370	230	120
5	378363	30	30	130	<0.5	55	31	620	65	120
6	378364	10	10	90	0.5	70	7	570	300	120
7	378365	25	25	50	0.5	20	76	520	30	180
8	378366	IS	IS	IS	IS	IS	IS	IS	IS	IS
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	NOTE: IS = Sample lost during preperation.									
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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599327

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04472	19/05/87	2378	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Ni	Cr					
1	378359	1450	<0.008	.297	780					
2	378360	5150	<0.008	.072	800					
3	378361	1400	<0.008	.043	190					
4	378362	2600	<0.008	.046	230					
5	378363	2650	<0.008	.045	65					
6	378364	3100	<0.008	.039	300					
7	378365	1300	<0.008	.138	30					
8	378366	IS	IS							
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22	NOTE: IS = Sample lost during preperation.									
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 9.

328 599329 PAGE / OF /

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. HAT-9

DATE 12.5.87

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	396785	0 - 10.0	ALL + Hg					
2	86	10.0 - 20.0						
3	87	20.0 - 33.0						
4	88	33.0 - 43.0						
5	89	43.0 - 56.5						
6	90	56.5 - 66.0						
7	91	66.0 - 76.0						
8	92	76.0 - 86.0						
9	93	86.0 - 98.0						
10	94	98.0 - 98.7						
11	95	98.7 - 103.4						
12	96	103.4 - 113.0						
13	97	*STD	3	*				
14	98	113.0 - ~~124~~ 123.0						
15	99	123.0 - 133.0						
16	396800	133.0 - 143.0						
17	01	143.0 - 153.0						
18	02	153.0 - 163.0						
19	03	163.0 - 173.0						
20	396804	173.0 - 184.0						
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

329

599330

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Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 33.3.08.04579

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
1807	

DATE RECEIVED	RESULTS REQUIRED
25/06/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	06/07/87	1	20

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	396785/804	CG Prep: 012,013,016							Cu,Pb,Zn,Ag,Ni/101,As/114		
	396785/804	CG							Ba,Cr,Zr,Ti/401		
	396785/804	CG							Hg/122		
	396785/804	CG							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

Hot - 9

bore 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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599331

330

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04579	06/07/87	1807	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	0-10 396785 QPJ	70	20	190	<0.5	90	15	820	120	140
2	10-20 396786 QPJ	75	25	180	<0.5	100	25	770	120	140
3	20-33 396787 QPJ	140	45	60	1.0	105	37	700	130	140
4	33-43 396788 BI	200	255	600	0.5	430	41	1250	1050	550
5	43-56.5 396789 BI	180	375	930	0.5	310	44	990	790	400
6	56.5-66 396790 BI	110	355	1250	<0.5	280	21	350	760	380
7	66-76 396791 BI	115	900	1600	<0.5	265	11	2300	700	380
8	76-86 396792 BI	115	160	280	<0.5	235	40	1500	610	320
9	86-98 396793 BI	140	75	300	<0.5	210	16	310	620	310
10	98-98.7 396794 YVC	35	<5	120	<0.5	115	54	310	230	180
11	98.7-103.4 396795 BVC	40	<5	120	0.5	70	12	570	230	140
12	103.4-113 396796 APJ	20	<5	45	<0.5	20	53	570	<5	230
13	396797 ~~STD~~ 3	125	180	2400	0.5	285	20	1100	890	80
14	113-123 396798 APJ	10	<5	35	<0.5	15	10	470	<5	220
15	123-133 396799 APJ	15	<5	35	<0.5	20	2	600	<5	220
16	133-143 396800 APJ	20	<5	45	0.5	15	3	610	7	220
17	143-153 396801 APJ	10	<5	35	<0.5	10	2	940	<5	210
18	153-163 396802 APJ	5	<5	30	<0.5	10	1	780	<5	220
19	163-173 396803 APJ	10	<5	35	<0.5	10	2	380	<5	230
20	173-184 396804 APJ	10	<5	45	<0.5	10	7	410	7	220
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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331

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599332

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04579	06/07/87	1807	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Hg	Zn/Ti					
1	396785	3800	0.008	0.100	0.037	140				
2	396786	4100	<0.008	0.085	0.034	130				
3	396787	4250	<0.008	0.045	0.033	130				
4	396788	7300	0.008	0.065	0.075	190				
5	396789	5650	<0.008	0.040	0.071	190				
6	396790	5450	<0.008	0.065	0.07	160				
7	396791	4750	<0.008	0.085	0.08	160				
8	396792	4200	<0.008	0.035	0.076	160				
9	396793	4450	<0.008	0.055	0.07	120				
10	396794	3300	0.050	0.025	0.054	230				
11	396795	3100	0.008	0.010	0.045	230				
12	396796	1400	<0.008	0.015	0.164	45				
13	396797 *STD	2300	<0.008	0.180						
14	396798	1300	<0.008	0.060	0.169	45				
15	396799	1250	<0.008	<0.005	0.176	45				
16	396800	1300	<0.008	<0.005	0.169	7				
17	396801	1250	<0.008	<0.005	0.168	45				
18	396802	1300	0.008	<0.005	0.169	45				
19	396803	1300	<0.008	0.010	0.177	45				
20	396804	1300	0.017	<0.005	0.169	7				
21										
22										
23	DETECTION	50	0.008	0.005						
24	UNITS	PPM	PPM	PPM						
25	METHOD	401	309	122						

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 10.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

333

599334

PROJECT : Hatfields Ellis/73

PROSPECT: Old Mine Site

HOLE NO: HAT-6 / HAT-D-006

PAGE: one of 7

LOGGED: AMH

DATE: August 1984

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				0 - 30.7 Tricone								
4												
6												
8												
10												
12												
14												
16												
18												
20												
22												
24												
26												
28												
30				30.7								
32			Basalt Lava Breccia	Clasts: ① 0.5 - 2cm angular basalt fragments. Dense, cream chloritic filled vesicles. Dark green. ② Lapilli, 2-5mm, pale coloured (khaki - light green). Usually equidimensional and rounded. Larger vesicles than clast ①. Vesicles have qtz carb and chl fill. Probably same composition as ① with different texture. Matrix: Predominantly white calcite. Brown pink silica occurs in cores to matrix surrounded by calcite - silica may have been earlier.	Pink silica alteration 2. of type ② clasts	Very minor 0.1 - 1.0cm chl-carb-qtz quartz veins			QX5		Rubble zones due to solution of calcite by groundwater occurs down to 141.0m.	
34												
36												
38												
40												
42									40.6 QXH			

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD EL19/73

PROSPECT: OLD MILL SITE

331

599335

HOLE NO: HAT 6 / HAT-D-006

PAGE: 2 of 7

LOGGED: RMH

DATE: AUGUST 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			Basaltic Lava Breccia.	Intense calcite flooding of matrix starts at 73.0m. In unweathered zone above 72.0 matrix is chloritic. Interstitial calcite may have been leached from weathered/rusty zone above 73.0	"	2	"	1			Ox H			
46														
48											47.0			
50														
52														
54														
56														
58														
60											Ox 3			
62					"	2	"	1						
64														
66														
68														
70														
72														
74											73.0			
76														
78					"	2	"	1		62-1, 0-5m, 30°CA slickensided contact	Ox 2		Tel 383426, T30, PEM 30-7 - 22.2 Amygdaloidal basal basalt breccia. Probable flow top breccia of fine grained-glassy basalt fragments containing fresh augite phenocrysts. Interstitial carbonate + pyrite alteration	
80														
82														
84														

PROJECT : HATFIELD EL 15/73

PROSPECT: OLD MILL SIDE

333

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599336

HOLE NO: HAT 6 / HAT-D-006

PAGE: 3 of 7

LOGGED: AMH

DATE: AUGUST 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86			BRECCIA LAVA BRECCIA											
88														
90														
92														
94														
96											6X2			
98				FAULTED CONTACT ↓		2		1						
98.8			BASALT LAVA	DARK GREEN MASSIVE LAVA. TYPICAL HELLMITZ HACKLINGHAUS STYLE MASSIVE BASALT. 0.1 - 2.0 cm ROUNDED VESICLES, QTZ-CARB FILLING. <3mm ROUNDED AND IRREGULAR VESICLES, CHLORITE FILLING.			98.8	IRREGULAR 0.1 - 0.5 cm VEINLETS AND PATCHES OF WHITE QUARTZ AND CREAMY CALCITE. DEEPLY WEATHERED PINK SILICA OCCURS IN CORES OF BASALT DYKE AND IN SOME VEINLETS.	3		F 101.0, 300cm; 40°CA PUG, CHLORITIC RUBBLE.			10cm PUG ZONE BETWEEN MASSIVE AND BRECCIATED BASALT LAVA AT 98.8.	
100														
102											105.2			
104				(104.8 - 105.0 INTENSE PINK SILICA ALT = GRANITE LIKE TEXTURE)										
106														
108														
110														
111.0 HQ NQ														
112													PEK. 399427: 120.0; REP. 119.9 - 120.0	
114													QUARTZ PHYRIC ROCK. 65%	
116													EPIDOTE. POSSIBLE QUARTZ PHENOCRYSTS MAY HAVE BEEN A RHYOLITE	
118			RHYOLITE DYKE	CREAMY STRONGLY QTZ PORPHYRITIC RHYOLITE DYKE.									PEK. 387628; 123.1, REP. 122.9 - 123.4	
119.9													EPIDOTISED BASALT BRECCIA.	
120.0													EPIDOTE-QUARTZ-CHLORITE-CARBONATE ROCK.	
122			BASALT LAVA	M. BASALT. 98.8 - 119.8	VEINLETS CONTROLLING CREAMY QTZ/EPIDOTE/CHLORITE/CARB ALTERATION								ROCK WITH RELICT BASALTIC TEXTURE.	
122.4														
123.4														
124														
126														

PROJECT : HATFIELD ELIS/73

PROSPECT: OLD MILL SIDE

336

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599337

HOLE NO: HAF-6 / HAF-D-006

PAGE: 4 of 7

LOGGED: AMH

DATE: AUGUST 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128			Basalt Lava.									
130												
132						" 3						
134												
136												
138												
140												
142												
144											2SC 282129 144.0 REF 08 8 - 195-2	
146						" 3					Plagioclase altered basalt. Basalt. QTZ - CHL - CARB - PUMPELLYITE. Groundmass with microspherocrysts of pumpellyite.	
148												
150												
152												
154												
156												
158												
160								F 160.2, D 50m/S°CA. Slickensided carbonate.				
162						" 3						
164												
166												
168												

337

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599338

PROJECT : HATFIELD ELIS/73

PROSPECT: OLD MILL SITE

HOLE NO: HAF-D-006 (HAF-6)

PAGE: 5 of 7

LOGGED: ADMH

DATE: AUGUST 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170			BRECCIA LAVA											
172								3					PSK 383630: 175.4; 174.9 - 180.1	
174					174.9								BRECCIATED BASALT. WELL PRESERVED AUGITE AND ANDESINE PHENOCRYSTS IN MATRIX OF CAL - EPI - CHL - PUMP. - QTZ.	
176					PERVASIVE CHLORITE - 3 PUMPELLYITE - SAPROPH. ALT.								PSK 383631: 178.4; 174.9 - 180.1	
178													BASALT (TUFFACEOUS?) BRECCIA	
180					180.1								EPI - QTZ - CAL - PUMP. SILICA REPLACING IN CALCITE MATRIX.	
182														
184														
186														
188								3					VEINING MORE PREVALENT IN CONTACTS	
190				SLIGHT UNCONFORMITY ↓	190.8		190.8							
192			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA.	CLASTS: - DARK GREEN - BLACK FELDSPAR PHYRIC 0.5 - 5 cm. VERY ANGULAR. MATRIX SUPPORTED. MATRIX: - PINK TO LIGHT GREY SILICA	PINK SILICA (FELDSPAR?) AS MICROV. AND PATCHES. SOME CLASTS.	4		<1						
194					193.5	3								
196														
198														
200														
202														
204														
206						3		<1						
208														
210														

338

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599339

PROJECT : HATFIELD EL15/23

PROSPECT: OLD MILL SITE

HOLE NO: HAT-6 (HAT-RD006)

PAGE: 6 of 7

LOGGED: AMH

DATE: AUGUST 1996

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA					4						
214														
216														
218														
220						3								
222														
224														
226														
228					230.0 MOSTLY SILICA CEMENTED TO KHAKI COLOUR INCLUDES PIECES OF YELLOW BROWN ILLITIC OR SERICITIC	3		4					PEK. 383632; 236.3. REK 230.0 - 239.5 SILICIFIED PERLITIC OBSIDIAN	
230														
232														
234														
236														
238				239.5	239.5									
240			FELDSPAR PHYRIC ANDESITE LAVA	FLOW BANDED NON-BRECCIATED FELDSPAR PHYRIC ANDESITE LAVA. DARK GREEN - BLACK, FLOODED WITH KHAKI SILICA	PERVASIVE SILICIFICATION WITH SOME PATCHES OF YELLOWISH ILLITIC/SERICITIC	3								
242														
244														
246														
248								4						
250				249.5 COMPLETE COLOUR CHANGE TO PINKISH BROWN. RELICT ANDESITIC TEXTURES CAN BE SEEN.	249.5 COMPLETE FLOODING BY PINK - BROWN SILICA	5								
252														

339 335

ABERFOYLE EXPLORATION

PROJECT : HATFIELD EL15/73

PROSPECT: OLD MILL SITE

DIAMOND DRILL LOG

599340

HOLE NO: HAT-6 / HAT-D-006

PAGE: 7 of 7

LOGGED: ATH

DATE: AUGUST 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
254			FELDSPAR PORPHYRIC ANDESITIC LAVA.		"	S	"	<1					PRT 383633, 260-6 IREF 261.5-262.5	
258													SILICIFIED PERLITIC OBSIDIAN?	
258													FACIES MAY OCCUR AS NARROW MARGINAL PHASE OF BTZ. SEE ALSO SERICITE IS PROBABLY DUE TO PYRITE.	
262			262.5										262.5 FOW	

SAMPLE NO : 383626
LOCATION : HAT 6/79.0
REPRESENTATIVE OF : 30.7 - 98.8
REMARKS : Scoriaceous basalt breccia with calcite matrix.

SAMPLE NO : 383627
LOCATION : HAT 6/120.0
REPRESENTATIVE OF : 119.8 - 120.0
REMARKS : Quartz porphyritic rhyolite dyke in basalt. Core specimen shows contact with basalt.

SAMPLE NO : 383628
LOCATION : HAT 6/123.1
REPRESENTATIVE OF : 122.9 - 123.4
REMARKS : Alteration of basalt, probably associated with dyke 383627. What minerals are present?

SAMPLE NO : 383629
LOCATION : HAT 6/144.4
REPRESENTATIVE OF : 98.8 - 190.8
REMARKS : Typical Hellyer style vesicular basalt.

SAMPLE NO : 383630
LOCATION : HAT 6/175.1
REPRESENTATIVE OF : 174.9 - 180.1
REMARKS : Basalt. Sericite-carbonate altered fragments, purple silica matrix.

SAMPLE NO : 383631
LOCATION : HAT 6/178.6
REPRESENTATIVE OF : 174.9 - 180.1
REMARKS : As for 383630

SAMPLE NO : 383632
LOCATION : HAT 6/236.8
REPRESENTATIVE OF : 230.0 - 239.5
REMARKS : Feldsparphyric andesite lava breccia with brown siliceous matrix.

SAMPLE NO : 383633
LOCATION : HAT 6/260.6
REPRESENTATIVE OF : 249.5 - 262.5
REMARKS : Flow structured feldsparphyric andesite lava - with brown silica alteration.

599342

341

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

19 SEP REC'D

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

16th September, 1986

REPORT CMS 86/9/1

YOUR REFERENCE:	Letter dated 20.8.1986
DATE RECEIVED:	2nd September, 1986
SAMPLE NOS.:	383626 - 383633
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

HAT. 6
CORE SAMPS.

REPORT CMS 86/9/1

DDH Hat 6 Core Samples

Eight core samples were received for petrographic study; thin-sections were prepared, and some calcite stain tests were carried out on the offcuts. Each rock is described in the accompanying table.

Summary

All the rocks are igneous, but are altered, generally very extensively, so that recognition and classification is difficult; however, relict features, surviving primary minerals, and present assemblages suggest that samples 383626 to 383631 (except 3836277) are basaltic, and 383632-383633 are perlitic obsidians with a broadly dacitic composition.

Several of the basalts are flow-breccias, probably representing lava surfaces with amygdaloidal to scoriaceous fabric; naturally, such rocks contain a variety of introduced and deuteric minerals, including pumpellyite in several.

383627 is a quartz-epidote rock whose origin is uncertain because almost all primary features have been destroyed; it contains phenocryst-like bodies of quartz, but these could be interpreted differently. However, it seems reasonable to interpret the rock as an altered rhyolitic dyke.

H.W. Fander, M. Sc.

No.	Rock Type - Composition 343	Fabric	Minor Minerals	Comments
383626 (T.S. 56483)	Amygdaloidal Basalt Breccia. Irregular fragments of fine-grained and glassy basalts with fresh augite phenocrysts, small amygdales; some fragments are crystal masses of augite.	Flow-breccia fabric, with deformed fragments; very variable textures. Scoriaceous.	Interstitial carbonate, albite and chlorite. Amygdales contain quartz, chlorite.	Probably a flow-top breccia, highly scoriaceous, and with variable fragments; some may be more andesitic or leucocratic/feldspathic.
383627	Quartz-Epidote Rock. About 65 % is pale epidote as small matted crystals; 35 % quartz as irregular corroded, embayed single crystals, and fine-grained material.	Quartz is reminiscent of phenocrysts. VAgue relict textures in epidote. Weak preferred fabric.	Sporadic carbonate patches intergrown with epidote. Fine cloudy sphene.	If coarser quartz represents phenocrysts, then rock may have been a rhyolite, but epidotisation was very thorough and obliterated most details.
383628	Epidotised ?Basalt Breccia. Now composed of coarse and fine epidote, quartz and carbonate patches, masses of asbestiform amphibole (?tremolite).	Relict breccia fabric, scoriaceous and basaltic textures. Quartz is strongly stressed.	Minor relict plagioclase. Pale chlorite patches.	RI measurements and other optics suggest that the asbestiform mineral is tremolite. Relict fabric suggests basalt fragments and amygdales.
383629	Altered Amygdaloidal Basalt. Microphenocrysts of augite partly replaced by pumpellyite, carbonate and silicified feldspar; fine quartz-chlorite-carbonate-pumpellyite groundmass.	Amygdales 0.3 to > 20 mm across. Basaltic fabric, with pyroxene clusters. Quench textures.	Chlorite, chalcedony, quartz, carbonate, epidote, coarse adularia. in amygdales.	Generally severely deuterically altered, but with curious survival of fresh pyroxene in places. Precise classification not possible.
383630	Brecciated, Altered Basalt. Small and large augite and andesine phenocrysts, fresh and altered, in fine groundmass of chlorite, epidote, pumpellyite, carbonate, quartz. A few amygdales.	Fabric fairly uniform, not flow features. Some fracturing, veining. Phenocrysts up to 2 mm.	Fine cloudy sphene. Calcite, quartz in amygdales; calcite in fractures (mauve).	Bright green colour due to combination of green minerals (chlorite, pumpellyite, epidote). Phenocrysts generally well-preserved.
383631	Calcitic Basalt Breccia. Large and small fragments of porphyritic basalt now composed of epidote, pumpellyite, quartz, carbonate. Matrix of coarse interlocking calcite crystals.	Fragments are irregular shapes, widely spaced, but with similar fabrics; a few amygdales.	A few fragments are much less altered and may be andesites, not basalts.	Probably a tectonic breccia, though depending on circumstances, a volcanic breccia is a possibility.
383632	Silicified Perlitic Obsidian. Numerous small subspherical quartz bodies, with interstitial streaky sericite, fine chlorite, scattered brown calcite pseudomorphs after feldspar phenocrysts.	Very uniform fabric, with faint but definite flow-lineation. Concordant breccia zones.	Breccia zones with brownish calcite, with chlorite. Accessory apatite, leucoxenised magnetite.	Although altered, the rock is believed to have been of dacitic composition, essentially a glassy lava with a few phenocrysts.
383633 (T.S. 56490)	Silicified Perlitic Obsidian. Partly to completely calcitised oligoclase phenocrysts in groundmass of small quartz ovoids and streaky sericite; scattered cloudy chlorite.	Relict flow-folding. Fine perlitic textures preserved. Uniform fabric. Clusters of phenocrysts.	Accessory apatite needles and leucoxenised magnetite.	Very similar to, and correlatable with, 383632. The brownish tinge in this rock is due to ultrafine ?goethite in the sericite; in 383632 the calcite is pigmented.

ANALABS

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

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599344 — 599345

ANALYTICAL REPORT No. 23.3.08.03828

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
0971	

DATE RECEIVED	RESULTS REQUIRED
20/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	01/09/86	1	8

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	383626/33	SC	Prep: 009,013,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	383626/33	PU							Au/309		
	383626/33	PU							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

HAT. HAT 6

½ petrology for assy

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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349

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03828	02/09/86	0971	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	383626	105	50	135	0.5	150	3	320	530	180
2	383627	5	10	10	<0.5	50	3	<10	290	110
3	383628	10	<5	45	<0.5	50	2	50	130	65
4	383629	85	40	80	<0.5	55	1	440	130	65
5	383630	20	<5	40	<0.5	65	3	130	130	65
6	383631	30	25	45	<0.5	40	2	40	70	30
7	383632	5	<5	45	<0.5	30	1	550	50	250
8	383633	10	5	15	0.5	40	1	500	65	230
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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599347

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.09.03828	02/09/86	0971	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Zr/Ti						
1	383626	3050	<0.008	.059						
2	383627	1300	<0.008	.085						
3	383628	2250	<0.008	.029						
4	383629	1950	<0.008	.035						
5	383630	1750	<0.008	.037						
6	383631	790	<0.008	.038						
7	383632	1100	<0.008	.227						
8	383633	1150	<0.008	.200						
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 11.

348

599349

PAGE ONE OF

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. HAT-6

DATE 19/8/86

No.	SAMPLE NUMBER	INTERVAL		ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	392054	30.7	40.7	Cu Pb Zn Ag As Sb Ba Cr Ni Ti Zr					
2	55	40.7	50.7	"					
3	56	50.7	60.7	"					
4	57	60.7	70.7	"					
5	58	70.7	80.7	"					
6	59	80.7	98.8	"					
7	392060	98.8	108.8	"					
8	61	108.8	118.8	"					
9	62	118.8	128.8	"					
10	63	128.8	130.8	"					
11	64	130.8	140.8	"					
12	65	140.8	150.8	"					
13	66	150.8	160.8	"					
14	67			" * STD.	ST				
15	68	160.8	170.8	"					
16	69	170.8	180.8	"					
17	392070	180.8	190.8	"					
18	71	190.8	200.8	"					
19	72	200.8	210.8	"					
20	73	210.8	220.8	"					
21	74	220.8	230.8	"					
22	75	230.8	240.8	"					
23	76	240.8	250.8	"					
24	392077	250.8	262.5	"					
25									
26									
27									
28									
29									
30									
31									
32									

349

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599350

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ANALYTICAL REPORT No. 25.3.86.03758

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
1432	

DATE RECEIVED	RESULTS REQUIRED
31/10/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	11/11/86	1	24

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEF REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	392054/77	CG	Prep: 009,017,0		3,018				Cu,Fb,Zn,Ag,Ni/101,As/114		
	392054/77	CG							Ba,Cr,Zr,Ti/401		
	392054/77	CG							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

HAT-6

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
s	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
p	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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599351

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03958	11/11/86	1432	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392054 30.7-40.7	145	275	770	0.5	85	5	380	280	150
2	392055 40.7-50.7	150	235	560	2.5	90	7	1250	280	160
3	392056 50.7-60.7	180	180	420	0.5	110	9	1650	320	160
4	392057 60.7-70.7	160	50	195	1.0	90	9	790	380	150
5	392058 70.7-80.7	120	50	205	0.5	115	4	840	400	130
6	392059 80.7-98.8	100	45	190	<0.5	155	2	890	530	130
	392060 98.8-108.8	100	15	175	<0.5	70	4	350	240	90
8	392061 108.8-118.8	110	10	120	<0.5	60	4	660	250	85
9	392062 118.8-128.8	80	40	190	0.5	40	4	680	85	70
10	392063 128.8-130.8	130	150	390	<0.5	40	6	490	70	65
11	392064 130.8-140.8	75	65	315	<0.5	40	3	490	75	75
12	392065 140.8-150.8	125	15	165	0.5	45	2	540	75	70
13	392066 150.8-160.8	135	45	165	0.5	50	4	560	65	70
14	392067 *STD[a]	115	160	2300	<0.5	265	28	1250	880	85
15	392068 160.8-170.8	85	120	160	0.5	40	11	530	75	80
16	392069 170.8-180.8	75	5	90	0.5	35	5	360	70	35
17	392070 180.8-190.8	70	35	130	<0.5	35	6	630	65	70
18	392071 190.8-200.8	40	<5	100	<0.5	15	3	150	<5	150
19	392072 200.8-210.8	20	<5	120	<0.5	15	1	520	10	150
20	392073 210.8-220.8	10	<5	95	0.5	20	2	800	<5	140
21	392074 220.8-230.8	20	<5	70	0.5	15	2	750	<5	170
22	392075 230.8-240.8	10	5	65	<0.5	10	1	650	<5	240
23	392076 240.8-250.8	25	10	80	<0.5	10	2	630	<5	250
24	392077 250.8-262.5	15	<5	40	<0.5	10	1	540	<5	220
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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351

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03958	11/11/86	1432	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
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	5	1	10	5	5
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
24	METHOD	101	101	101	101	101	114	401	401	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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352

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03958	11/11/86	1432	3 OF 4

TUBE No.	SAMPLE No.	Ti	Au							
1	392054	3800	0.008							
2	392055	1850	<0.008							
3	392056	3350	<0.008							
4	392057	3150	<0.008							
5	392058	2200	0.008							
6	392059	1950	0.017							
7	392060	2300	<0.008							
8	392061	2450	<0.008							
9	392062	2300	0.008							
10	392063	2200	<0.008							
11	392064	2300	<0.008							
12	392065	2200	<0.008							
13	392066	2350	<0.008							
14	392067 *STD	2300	0.008							
15	392068	2100	<0.008							
16	392069	1950	<0.008							
17	392070	2200	<0.008							
18	392071	2500	<0.008							
19	392072	2750	<0.008							
20	392073	2400	<0.008							
21	392074	2100	<0.008							
22	392075	1350	<0.008							
23	392076	1450	<0.008							
24	392077	1350	<0.008							
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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353

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599354

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.86.03958	11/11/86	1432	4 OF 4

TUBE No.	SAMPLE No.	Ti	Au							
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	50	0.008							
23	UNITS	PPM	PPM							
24	METHOD	401	309							
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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APPENDIX 12.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

355

599356

PROJECT : HATFIELD

PROSPECT: OLD MILL SITE

HOLE NO: HAT-8

PAGE: 1 of 10

LOGGED: AYH

DATE: MARCH '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				TRICONE.	PATCHES OF INTENSE EPIDOTE-ALBITE-PUMPELLYITE OCCURRING THROUGHOUT MATRIX AND MATRIX.							
4												
6												
8												
10												
12												
14												
16												
18												
20												
22												
24			24.3									
26			BMAMX LAVA BRECCIA	MATRIX: DARK GREEN CHLORITE WITH ABUNDANT (20-30% VOL) PATCHES OF QUARTZ + CALCITE INFILLING BRECCIATED ZONES OF THE MATRIX. CLASTS: THE CHLORITIC MATRIX IS ITSELF BRECCIATED AND INFILLED WITH QTZ + CALCITE AND ANGULAR IRREGULAR 'JIGSAW' FRAGMENTS FORMED CAN BE SUBDIVIDED AS CLASTS. HOWEVER THE MOST OBVIOUS CLASTS ARE GREEN + BUFF-WHITE PISOLITIC OF HIGHLY VESICULAR SCORIACEOUS BMAMX. THESE CLASTS ARE DISTINCTIVE (MATRIX SUPPORTED) FORM 10-20% OF ROCK VOLUME, AND HAVE LOBATE TO DIFFUSE BOUNDARIES. ABUNDANT VESICLES ARE FILLED WITH CHLORITE OR CALCITE	BMAMX IS ALTERED IN PATCHES TO PALE YELLOW-GREEN EPIDOTE. MOST ALBITE OF PENETRATIVE FABRIC MATRIX BUT NOT OBVIOUS IN ZONES OF INTENSE EPIDOTE ALTERATION PUMPELLYITE AND QTZ PHENOCRYSTS ALSO FOUND. INTENSITY MOD TO STRONG	CALCITE + QUARTZ OCCURRING AS VEINS AND LATE STAGE BRECCIA MATRIX AND VESICLE INFILLING - PROBABLY ALL OF THIS SAME MIX AND SUBSEQUENTLY HERE IS ONE SMALL VEIN. CALCITE IS RARELY PINK. VEINS ARE 0.5 - 5mm WIDE AND IRREGULAR. ESTIMATE OF INTENSITY [illegible]		FAULT AT 30.0 CORE AXIS THROUGH [illegible] TOOK 37/[illegible] +51.0 MAIN 45cm FAULT BRECCIA ZONE AT 42.5m CORE LENGTH.	OX4 28.5 OX2 33.9 OX4		THIS UNIT IS COMMON IN OUTCROP IN THE OLD MILL SITE AREA AND CORRELATES WITH THE SCORIACEOUS LAVA BRECCIA AT THE TOP OF HAT-6.	
28												
30												
32												
34												
36												
38												
40												
42												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

356

599357

PROJECT : HARFIELD

PROSPECT: OLD MILL SITE

HOLE NO: HAF 8

PAGE: 2 of 10

LOGGED: RMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			BASALT LAVA BRECCIA.	THIS ROCK IS INTERPRETED TO BE A SCORIACEOUS BASALT BRECCIA IN WHICH THE SCORIACEOUS FRAGMENTS HAVE BEEN VARIATION ALTERED (ALBITISED? EPIDOTISED?) AFTER DEPOSITION TO PRODUCE DIFFUSE BOUNDARIES AND VARYING COLOURS.		"						
46					"				OXD			
48												
50												
52									51.2			
54									OXD			
56												
58								VERY FRACTURED IN FAULT ZONE — WEATHERING OUT OF CARBONATE	57.2 57.4 OXD			
60												
62						62.3	61.4 - 61.5 MINOR STRINGERS EPIDOTE AND CHLORITE WITH CALCITE-QTZ MATRIX FILL.		61.8 62.5		BASE OF WEATHERING	
64					"	" 3						
66			HQ NQ 65.9									
68												
70												
72												
74												
76												
78								78.6, 35mm TRUE WIDTH, 20° CALCITE-QUARTZ VEIN WITH BREAK-AWAY SLICKENSIDES 50mm.				
80												
82					82.4 - 84.0 INTENSE EPIDOTE/CHLORITE ROCK WITH QTZ. PHENOS. SIMILAR TO "RHYOLITE" DYKE IN HM-6							
84												

ABERFOYLE EXPLORATION

PROJECT : HAFFIELDS

PROSPECT: OUD MILL SITE

357

DIAMOND DRILL LOG

599358

HOLE NO: HAF-8
PAGE: 3 of 10
LOGGED: AMH
DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86			BASALT LAVA BRECCIA		"	"	3						
88						88.6 (PREGRAN. VEINS)	1						
90				89.6 SECTION AROUND FAULT - PREDOMINANT PALE MATRIX AND NO SCORIACEOUS FRAGMENTS. MINOR CONTAMINATION CHANNEL OR ASS. BRECCIATION WITH FAULT									
92						92.6							
94						93.8 N. ANGLE (24.3-78.2)	5 (2M/cm)		E L 73.5; 100cm; 10° CALCITE + CHLORITE RUBBLE					
96				96.0									
98													
100					"								
102							2						
104													
106													
108				108.0 MORE MASSIVE LESS MARTIN BRECCIATION IN THIS SECTION BUT STILL CONTAINS SCORIA CLASTS.									
110													
112					"		2						
114													
116													
118													
120					"								
122													
124							2						
126													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: OLD MINE SITE

358

599359

HOLE NO: HAT-8

PAGE: 4 of 10

LOGGED: ATMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
130			BASALT LAVA BRECCIA	130.0	"	"	2						
132													
134													
136													
138													
140													
142													
144													
146													
148													
150													
152													
154				CONTACT GRADATIONAL OVER SEVERAL METRES									
155.0			BASALT - ANDESITE 1-2mm LAPILLI VOLCANICLASTIC	MUCH MORE DISTINCTIVE, REGULAR BRECCIA TEXTURE THAN ABOVE UNIT. CLASTS (i) DARK GREEN TO BLACK, <1 TO 5cm, ANGULAR IRREGULAR STRONGLY FELDSPAR PHYRIC ANDESITE (ii) MELOCLASTS TO 1cm OF PALE GREEN-GREY PORPHYRITIC MASSIVE BASALT (NOT SCORIA CLASTS OF OVERLYING UNIT.) PHENOCRYSTS ARE PLAGIOCLASE, EPIDOTE AND PUMPELLYITE. THE BASALT IS ALSO VESICULAR WITH VESICLE FILLING OF WHITE CALCITE + QTZ.	155.0								
158												*	
160						161.1							
162													
164							3						
166													
168													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: OLD MIN SITE

359

599360

HOLE NO: HAT-8

PAGE: 5 of 10

LOGGED: AMH

DATE: MAR '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170				MATRIX PALE GREY-GREEN SILICEOUS MATERIAL (REMANENT?) OR RECURRENT CALCITE + QTZ. CLASTS ARE MATRIX SUPPORTED (JUNT) AND MATRIX = 40-50% VOL OF UNIT.		"	3						
172													
174													
176				ANDESITE FRAGMENTS ARE MUCH MORE COARSELY AND IRREGULARLY PORPHYRITIC THAN ANDESITE OF FOLLOWING UNIT - MAY NOT BE THE SOURCE.									
178													
180													
182													
184													
186						"	3						
188													
190													
192													
194													
196													
198													
200				CONTACT MARKED BY 2m ZONE OF PINK SILICIFICATION + PALE YELLOW GREEN EPIDOTE ALT.									
202			202.0		202.0	202.0							
204			ANDESITE FP. LAVA	DARK GREEN GREEN FELDSPAR PHYRIC LAVA. PREDOMINANTLY MASSIVE WITH SOME FLOW BANDING AND BRECCIATED ZONES. FELDSPAR PHENOCRYSTS < 2mm, 5-10% VOLUME, EVENLY DISTRIBUTED	INTENSE BUT PATCHY BRIGHT PINK FELDSPAR SILICA ALT. + PALE YELLOW GREEN EPIDOTE. E, FE	"	3	COMPARED WITH ABOVE VEINS ARE MORE REGULAR HAVE SILICIFIED SELVEDGES AND THIN WHITE VEINS ARE COMMON. ALL AT 10CAL TO VEIN OR LAMINA (2-5mm) MAGNETITE - NO MARGIN SEEN. 2				EPIDOTE (E) AND K/SI (PI) ALTERATION TO BE SEPARATELY LOGGED, BUT OCCUR TOGETHER - SOME FELSIC WHITE IS OVERPRINTING NOT IN ALTERATION PROGRAM. TYPE: PP FINE	
206													
208					Z15 - FE 4								
210													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELDS

PROSPECT: OLD MINE SITE

369

599361

HOLE NO: HAT-8

PAGE: 6 of 10

LOGGED: RMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			Andesitic FP. Lava		"	4	"	2						
214														
216														
218														
220														
222														
224							"	2						
226														
228														
230														
232														
234														
236					"	4	"	2						
238														
240														
242					242.0		242.5							
244					E, minor FP.	3	"	1						
246														
248														
250														
252														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

361

599362

PROJECT : HATFIELD

PROSPECT: OLD MILLSIDE

HOLE NO: HAT-8

PAGE: 7 of 10

LOGGED: AMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
250			ANDESITIC FP. LAVA		E. MINOR FJ.	3		1						
252														
254														
256														
258						3		1						
260														
262														
264														
266														
268				30 cm of EPIDOTE + FB. REG. ON CONTACT		3		1						
270														
272														
274														
276														
278														
280														
282														
284														
285.9					285.9									
286			ANDESITIC POLYMICT (?) f-m. LAPILLI VOLCANICLASTIC	DARK GREEN POORLY SORTED CLAST SUPPORTED VOLCANICLASTIC PALAGONITE BUFF-PINK FELDSPHYRIC MAY BE SECONDARY FELDSPAR AGG. NOT OF DIFFERING COMPOSITION.	E ≥ FJ									
288														
290														
292														
294						3	294.0	2						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

362

599363

PROJECT : HATFIELD

PROSPECT: OLD MILL SIDE

HOLE NO: HAT-8

PAGE: 8 of 10

LOGGED: RMH

DATE: MAR '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING (TYPE / INTENSITY)	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296					3							
297.2												
298			ANDESITIC pp. LAVA	SIMILAR TO 202.0 - 285.9 BUT WITH GRADATIONAL PROPAGATION OF LAVA BRECCIA	298.0	2						
300												
302					3-4							
304					306.0							
306					H, I 3-4							
308												
310												
312												
314												
316					2-4	2						
318												
320												
322												
324												
326						326.9 - 328.0 several 2-10cm massive chlorite veins						
328					3-4							
330												
332												
334						2						
336												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Old Mine Site

363

599364

HOLE NO: HAT-8

PAGE: 9 of 10

LOGGED: AMH

DATE: MAR '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338					" 3-4								
340													
342						"	2						
344													
346					347.0								
348					E 3-4								
350													
352													
354													
356													
358				SHARP, REGULAR CONTACT									
			359.0		359.0	359.0							
360			PORPHYRITIC BASALT LAVA	MASSIVE GRAY-GREEN VESICULAR LAVA. VESICLES < 5mm AND CHLORITE FILLED. LACKS CONSPICUOUS ROUNDED CALCITE + QUARTZ FILLED VESICLES OF HELLYER H.W. BASALT SEVERAL PATCHES OF VARIOLES	PATCHY PERVASIVE EPIDOTE ALT. SOME PATCHES OF COMPLETE OBLITERATION OF BASALT BY EPIDOTE.	WITHIN BASALT VEINS ARE ASSOCIATED WITH YELLOW GREEN VEINLETS OF EPIDOTE ALT. AND CONSIST OF QUARTZ + CALCITE + FISSURE WHITE-GREEN MINERAL		2-3					
362													
364													
366													
368													
370													
372													
374													
376													
378													

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: OLD MINE SITE

364

DIAMOND DRILL LOG

599365

HOLE NO: HAT 8

PAGE: 10 of 10

LOGGED: AMH

DATE: MAR '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
380						"	2-3						
382													
384													
386													
388													
390													
392													
394													
396													
398													
400													
402						"	2-3						
404			403.3 EOH										

365

SAMPLE NO.	379365
LOCATION:	HAT-8/75.5
REPRESENTATIVE OF:	24.3-108.0
REMARKS:	Scoriaceous Basalt

SAMPLE NO.	379366
LOCATION:	HAT-8/83.5
REPRESENTATIVE OF:	83.4-84.0
REMARKS:	Interval of intense Qtz/Epidote/Pumpellyitec?) alteration within scoriaceous basalt, or intrusive?

SAMPLE NO.	379367
LOCATION:	HAT-8/123.3
REPRESENTATIVE OF:	Style of patchy alteration within 24.3-155.0.
REMARKS:	What is composition of the pale green alteration of the darker green basalt. The alteration is associated with Qtz-carb. veining.

SAMPLE NO.	379368
LOCATION:	HAT-8/143.2
REPRESENTATIVE OF:	108.0-155.0
REMARKS:	Basalt breccia, similar to but not as scoriaceous as 379365.

SAMPLE NO.	379369
LOCATION:	HAT-8/170.2
REPRESENTATIVE OF:	Basalt blast within basalt-andesite volcaniclastic 155.0-202.0
REMARKS:	Does this sample contain feldspar phenocrysts? and epidote/pumpellyite?

SAMPLE NO.	379370
LOCATION:	HAT-8/189.4
REPRESENTATIVE OF:	Small (<2cm) andesite clasts within 155.0-202.0.
REMARKS:	Are the small angular dark green clasts andesitic?

SAMPLE NO.	379371
LOCATION:	HAT-8/214.2
REPRESENTATIVE OF:	202.0-285.9
REMARKS:	Feldspar phyric andesite lava. Pink (feldspar-silica) alteration.

SAMPLE NO.	379372
LOCATION:	HAT-8/272.2
REPRESENTATIVE OF:	202.0-285.9
REMARKS:	Feldsparphyric andesite lava. Does this sample show evidence of epidote alteration as opposed to development of metamorphic epidote?

SAMPLE NO.	379373
LOCATION:	HAT-8/291.7
REPRESENTATIVE OF:	285.9-297.2
REMARKS:	Andesitic polymict volcaniclastic.

SAMPLE NO.	379374
LOCATION:	HAT-8/313.8
REPRESENTATIVE OF:	297.2-359.0
REMARKS:	Feldsparphyric andesite lava with some Fx/Si alteration.

SAMPLE NO.	379375
LOCATION:	HAT-8/361.5
REPRESENTATIVE OF:	359.0-403.3 (Feldsparphyric)
REMARKS:	Thought to be a Feldsparphyric basalt.

SAMPLE NO.	379376
LOCATION:	HAT-8/372.5
REPRESENTATIVE OF:	359.0-403.3 (Non-Feldsparphyric)
REMARKS:	Same unit as 379375, but not feldsparphyric. Is this rock epidotised?

599368

367

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

06 APR RECD

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

3rd April, 1987

REPORT CMS 87/3/19

YOUR REFERENCE:	Letter dated 17.3.1987
DATE RECEIVED:	19th March, 1987
SAMPLE NOS.:	379365 - 379376
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
Mr. H. Skey
Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
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REPORT CMS 87/3/19

Twelve samples of drill core from DDH-HAT 8 in the Que-Hellyer area were received for routine petrological description. 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

As sampled, the drilled sequence reflects two sequences of basaltic lavas separated by andesitic volcanics.

The "upper" basalts are represented by samples 379365 to 379370 incl. These are dominantly porphyritic lavas with subordinate breccias or tuffs and reflect "prehnite-pumpellyite" alteration assemblages with minor sulphide disseminations. Alteration is locally complexed by relatively marked vein-controlled epidotisation (sample 379367). The detectable sulphide phase is typically chalcopyrite, possibly reflecting primarily silicate-locked Cu "exsolved" during alteration.

Andesitic lavas are represented by samples 379371 to 379374 and similarly include massive lavas and flow breccias. These rocks typically exhibit albite-chlorite-epidote alteration assemblages with minor sericite, quartz, carbonate and sulphide. Epidote is generally cloudy and microcrystalline and relative abundance of this phase, in comparison with typical Que-Hellyer andesites, is thought to reflect the proximity of two prehnite-pumpellyite-altered basaltic lava sequences,with the epidote conceivably secondary after carbonate as an accessory to the primary alteration assemblage.

The "basal" basalt comprises samples 379375 and 379376. This facies is closely analogous to the "upper" basalt, but tends to exhibit a slight relative abundance of chromite and altered phenocrystal ?orthopyroxene. These rocks similarly exhibit prehnite-pumpellyite alteration assemblages, with clinopyroxene the only notable relic of the initial igneous assemblage.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379365 (T.S. 57564)	Basaltic "Breccia". Clasts of saussuritic/albitised plagioclase-, augite-porphyritic, quartz-pumpellyite-amygdaloidal basalt; microcrystalline albite-cemented with interspersed vugs and veinlets of adularia, minor prehnite, ~~cloudy carbonate~~.	Random submillimetric to centimetric "basaltic" amygdaloidal clasts; mildly corrosive matrix.	Minor chlorite (amygdales, mesostasis), traces epidote, silicif ?orthopyroxene. Minor traces chalcopyrite (amygdales).	Albite-cemented/prehnite-pumpellyite-altered subaqueous lava breccia or ed agglomeratic lithic tuff. Includes minor late albite-calcite veinlets.
379366	Altered Porphyry. Frequent partly recrystallized quartz phenocrysts, vaguely feldspar-pseudomorphous pumpellyite-epidote aggregates, silicified/prehnitised spherulites. Epidote-stained quartz matrix; disseminated poikilitic carbonate.	Strongly, coarsely porphyritic, partly recrystallized spherulitic, weakly amygdaloidal.	Minor clots of pyrite, minor albitic amygdales, microscale quartz veinlets, late albite-calcite veins.	Thoroughly quartz-epidote-pumpellyite (-carbonate-prehnite)-altered quartz-feldspar porphyry. Relict intrusive characteristics; alternately a megaclast?
379367	Amygdaloidal Basalt. Frequent augite, minor albitised to locally epidote-pseudomorphed feldspar phenocrysts, sporadic quartz ± epidote amygdales. Epidote- to locally pumpellyite-stained microlitic groundmass. Sporadic	Flow-structured, amygdaloidal/glomeroporphyritic, basaltic. Irregularly veined. quartz-epidote veins.	Minor calcite in quartz-epidote veins. Frequent late discontinuous calcite(-quartz) veinlets.	Relatively pyroxenic basalt lava. Exhibits vein-controlled epidotisation; elsewhere, the rock is pumpellyite-altered (dark green zones).
379368	Basalt Breccia. Clasts of strongly augite-porphyritic, variably pumpellyite-epidote-amygdaloidal, chloritic glass-mesostasised basalt. Matrix/irregular veins of quartz and epidote-clinozoisite.	Semi-moulded to quartz-epidote-cemented/ irregularly veined, basaltic-lithoclastic. Weakly flow-structured.	Minor augite- and mesostasis-replacive pumpellyite. Minor traces chalcopyrite (matrix, veins).	Chlorite-epidote-pumpellyite-altered/ quartz-epidote-matrixed, veined, basaltic flow-breccia. Strongly pyroxenic in common with 379367.
379369	Amygdaloidal Basalt. Frequent augite, subordinate saussuritic/albitised plagioclase phenocrysts, quartz-chlorite-calcite-prehnite amygdales in a weakly chlorite-epidote-stained augite-albite-microlitic groundmass.	Weakly flow-structured, strongly porphyritic, amygdaloidal, basaltic.	Minor pumpellyite-quartz-pseudomorphed ?orthopyroxene phenocrysts. Traces of chromite, ultrafine chalcopyrite.	Prehnite-pumpellyite-epidote-chlorite-altered amygdaloidal basalt; relatively plagioclase-porphyritic/pyroxene-deficient in comparison with 379367, 379368.
379370	Basalt "Breccia". Clasts of augite/saussuritic albite-porphyritic, weakly chlorite-epidote-amygdaloidal, chlorite-mesostasised basaltic lava, minor augite, altered feldspar grains. Microcrystalline quartz cement.	Psammite- to lapilli-grade, angular, lithoclastic, with disseminated crystal fragments. Mildly corrosive cement.	Sporadic vugs of prehnite and calcite, prehnite veinlets. Rare ultrafine ?chalcopyrite.	Textural similarities with 379365, but with relatively (lithic-crystal) tuffaceous characteristics. No andesitic components. Includes minor clots of pumpellyite.
379371	Andesite. Albitised plagioclase-subordinate chlorite-cloudy epidote ± quartz-pseudomorphed ferromagnesian phenocrysts in a chlorite-epidote-stained albitised plagioclase-microlathic to microlitic groundmass.	Flow-structured/ compositionally banded, weakly quartz-micro-amygdaloidal.	Minor fine leucoxenised opaques.	Distinctly andesitic in comparison with the 379365-379370 basalts. Secondary albite is pink/Fe-pigmented. Ultrafine epidote is whitish pigmentation.
379372	Andesite. Abundant albitised/epidote-stained plagioclase, subordinate chlorite-epidote-pseudomorphed ferromagnesian phenocrysts in a chlorite-epidote-stained/albitised microcrystalline felsic groundmass.	Massive to flow-structured/weakly banded, strongly porphyritic. Felsitic/perlitic on a microscale.	Fine leucoxenised opaques.	Close affinities with 379371 in relict compositional features and alteration pattern. Primarily subvitric in comparison.

379370

Sample No.	370 Classification - Composition	Fabric	Accessories	Comments
379373	Andesitic Breccia. Clasts of albitised plagioclase-/weakly chloritised ferromagnesian-porphyritic lava, microcrystalline-albitised to semi-selectively chlorite/cloudy epidote-altered. Sparse fine-grained quartz cement.	Moulded to locally quartz-cemented, weakly flow-structured, lapilli-grade, lithoclastic.	Leucoxenised opaques (in relatively epidotised clasts); traces of pyrite, sphalerite (in quartz matrix).	Differential alteration reflects variable crystallinity of clasts (albitic types are semi-perlitic). Overall alteration is similar to 379371, 379372. Typical lava breccia characteristics.
379374	Andesite. Albitised plagioclase-, subordinate epidote-chlorite-pseudomorphed ferromagnesian phenocrysts, minor quartz-chlorite-epidote amygdales in an albite-quartz-altered/epidote-chlorite-stained, weakly feldspar-microlitic felsic groundmass.	Semi-glomeroporphyritic, weakly flow-structured and flow-brecciated. Locally microfelsitic/perlitic.	Leucoxenised opaques. Traces pyrite (amygdales). Minor quartz (-albite-epidote-calcite-sphalerite) veinlets.	Weakly flow-brecciated, primarily subvitric andesitic lava. Relatively albitic/siliceous; chlorite-epidote-deficient alteration in comparison with 379371, 379372, 379373.
379375	Amygdaloidal Basalt. Frequent augite, subordinate saussuritised feldspar and chloritised ?orthopyroxene phenocrysts, sporadic quartz micro-amygdales. Epidote-chlorite-prehnite-stained, albitised plagioclase-microlathic groundmass.	Strongly porphyritic, micro-amygdaloidal, basaltic.	Traces of chromite. Minor coarse chlorite-quartz amygdales. Minor traces of pyrite.	Weakly amygdaloidal pyroxenic basalt, extensively epidote-chlorite-altered with prehnite-muscovite-epidote-altered plagioclase-, fresh augite phenocrysts.
379376 (T.S. 57575)	Amygdaloidal Basalt. Frequent augite, subordinate saussuritised/albitised plagioclase, minor chloritised ?orthopyroxene phenocrysts, sporadic chlorite-quartz amygdales; epidote-chlorite-prehnite-altered, albitised plagioclase-microlathic groundmass.	Similar to 379375, relatively strongly porphyritic.	Minor traces of chromite, pyrite, chalcopyrite. Minor pumpellyite (in altered feldspar, amygdales).	Close affinities with 379375; relatively porphyritic in comparison. Similarly altered, but with accessory pumpellyite stainings and amygdales.

599371

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ANALABS

599372

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 52 Murray Road, Welshpool, W.A. 6106 Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 23.3.08.04316

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
2335	

DATE RECEIVED	RESULTS REQUIRED
13/03/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	07/04/87	1	12

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
	379365/376	CO	Prep: 009,012,013,017						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379365/376	CO							Ba,Cr,Zr,Ti/401,Au/309		
	379365/376	CO	Prep: 009,012,013,017						Pb/104		

RESULTS TO

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

RESULTS TO

REMARKS

Hol - 8
Pet - Dmps.

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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599373

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04316	07/04/87	2335	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Pb	Zn	Ag	Ni	As	Ba	Cr
1	379365	95	55	–	85	<0.5	40	2	830	184
2	379366	30	–	1325	185	<0.5	40	18	320	145
3	379367	25	30	–	60	<0.5	40	22	30	227
4	379368	115	30	–	165	<0.5	60	20	900	232
5	379369	80	25	–	70	<0.5	30	2	370	75
6	379370	45	20	–	65	<0.5	30	4	450	102
7	379371	<5	25	–	185	<0.5	20	1	990	65
8	379372	<5	20	–	165	<0.5	25	1	1200	54
9	379373	10	25	–	1500	<0.5	10	5	1200	39
10	379374	<5	25	–	395	<0.5	20	3	880	69
11	379375	50	20	–	75	<0.5	30	3	660	119
12	379376	110	35	–	100	<0.5	40	9	810	108
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	25	5	0.5	5	1	10	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	104	101	101	101	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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599374

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04316	07/04/87	2335	2 OF 2

TUBE No.	SAMPLE No.	Au	Ti	Zr						
1	379365	<0.008	2100	80	.038					
2	379366	<0.008	1000	150	.150					
3	379367	0.017	2250	95	.042					
4	379368	0.008	2900	80	.027					
5	379369	<0.008	2200	65	.030					
6	379370	<0.008	2100	60	.029					
7	379371	<0.008	2050	140	.068					
8	379372	<0.008	1850	160	.086					
9	379373	<0.008	2100	140	.067					
10	379374	0.008	2000	140	.070					
11	379375	<0.008	2450	70	.029					
12	379376	<0.008	2350	75	.032					
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	0.008	50	5						
24	UNITS	PPM	PPM	PPM						
25	METHOD	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

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APPENDIX 13.

375

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

599376

PAGE OF

HOLE No. HAT-8

DATE 27/FEB/87

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1		24.3 - 34.3	All Elements			327.2-337.2	"	
2		34.3 - 44.3	incl Au			337.2-347.2	"	
3		44.3 - 54.3	"			347.2- 359.0	"	
4		54.3 - 64.3	"			359.0 - 369.0	"	
5		64.3 - 74.3	"			369.0 - 379.0	"	
6		74.3 - 84.3	"			379.0 - 389.0	"	
7		84.3 - 94.3	"			389.0 - 390.0	"	
8		94.3 - 104.3	"			390.0 - 403.3	"	
9		104.3 - 114.3	"					
10		STANDARD	*STD3	✓				
11		114.3 - 124.3	"					
12		124.3 - 134.3	"					
13		134.3 - 144.3	"					
14		144.3 - 155.0	"					
15		155.0 - 165.0	"					
16		165.0 - 175.0	"					
17		175.0 - 185.0	"					
18		185.0 - 195.0	"					
19		195.0 - 202.0	"					
20		202.0 - 212.0	"					
21		212.0 - 222.0	"					
22		222.0 - 232.0	"					
23		232.0 - 242.0	"					
24		242.0 - 252.0	"					
25		252.0 - 262.0	"					
26		262.0 - 272.0	"					
27		272.0 - 285.9	"					
28		285.9 - 297.2	"					
29		297.2 - 307.2	"					
30		307.2 - 317.2	"					
31		317.2 - 327.2	"					
32								

FAX

TO LANCE DENBY

AT QUE RIVER

FROM TONY HEPPE

AT BURNIE

DATE 3/3/87

PAGES

376

ANALABS

599377

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
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TLX: AA 59224

ANALYTICAL REPORT No. 5.3.88.04315

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
2334	

DATE RECEIVED	RESULTS REQUIRED
13/03/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	07/04/87	1	39

STATE SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	396001/39	CG	Prep: 009,012,013,017						Cu,Pb,Zn,Ag,Ni/101,As/114		
	396001/39	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

Hot - 8
Core grills

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
	23.3.00.04315	07/04/87	7334	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	396001 24·3-34·3	335	230	720	<0.5	110	1	1400	302	110
2	396002 34·3-44·3	195	225	670	<0.5	110	2	460	420	110
3	396003 44·3-54·3	290	120	665	<0.5	125	2	920	352	120
4	396004 54·3-64·3	250	100	430	<0.5	95	2	1550	272	100
5	396005 64·3-74·3	280	55	300	<0.5	95	3	650	248	85
6	396006 74·3-84·3	120	40	240	<0.5	65	2	730	237	80
7	396007 84·3-94·3	165	<5	185	<0.5	75	1	540	252	94
8	396008 94·3-104·3	400	15	405	<0.5	135	<5	390	265	75
9	396009 104·3-114·3	905	10	855	<0.5	230	3	730	224	80
10	396010 *STD 3	130	180	2350	<0.5	270	15	1150	957	85
11	396011 114·3-124·3	700	<5	685	<0.5	190	5	110	224	90
12	396012 124·3-134·3	680	15	615	<0.5	175	3	880	194	80
13	396013 134·3-144·3	985	50	1200	<0.5	250	5	550	224	60
14	396014 144·3-155·0	120	10	310	<0.5	60	16	540	208	75
15	396015 155·0-165·0	245	5	220	<0.5	75	6	570	111	65
16	396016 165·0-175·0	645	<5	585	<0.5	165	3	510	120	65
17	396017 175·0-185·0	150	<5	100	<0.5	50	2	430	105	60
18	396018 185·0-195·0	545	<5	510	<0.5	120	1	470	137	65
19	396019 195·0-202·0	215	25	215	<0.5	65	5	1050	130	65
20	396020 202·0-212·0	220	140	1350	<0.5	60	5	780	73	130
21	396021 212·0-222·0	270	<5	455	<0.5	70	1	510	71	110
22	396022 222·0-232·0	170	<5	305	<0.5	50	<1	570	39	130
23	396023 232·0-242·0	185	<5	310	<0.5	50	<1	800	48	140
24	396024 242·0-252·0	260	35	415	<0.5	60	<1	920	6	140
25	396025 252·0-262·0	240	45	395	<0.5	60	1	940	47	140

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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599379

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.00.04315	07/04/87	2334	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	396026 262.0-272.0	415	15	505	<0.5	90	<1	930	21	140
2	396027 272.0-285.9	270	25	435	<0.5	65	<1	960	26	140
3	396028 285.9-297.2	175	20	995	<0.5	45	1	1500	20	140
4	396029 297.2-307.2	240	<5	365	<0.5	60	<1	920	39	130
5	396030 307.2-317.2	345	<5	645	<0.5	75	1	870	23	130
6	396031 317.2-327.2	480	85	915	<0.5	100	<1	1100	39	140
7	396032 327.2-337.2	906	115	1450	<0.5	170	1	1650	7	120
8	396033 337.2-347.2	317	45	520	<0.5	75	1	1400	23	130
9	396034 347.2-359.0	160	60	320	<0.5	40	2	1300	12	150
10	396035 359.0-369.0	110	<5	105	<0.5	45	1	690	116	60
11	396036 369.0-379.0	180	40	215	<0.5	60	3	450	118	65
12	396037 379.0-389.0	425	125	545	<0.5	85	6	1050	148	75
13	396038 389.0-399.0	440	50	665	<0.5	110	11	1450	92	55
14	396039 399.0-403.3	170	85	305	<0.5	65	17	820	118	60
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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

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599380

379 SAMPLE PREFIX

ANALYTICAL DATA

REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
23.3.02.04313	07/04/87	2334	3 OF 4

TUBE No.	SAMPLE No.	Ti	Au							
1	396001	2850	<0.008	.039	302					
2	396002	3050	0.058	.036	420					
3	396003	2900	<0.008	.041	352					
4	396004	2700	<0.008	.037	272					
5	396005	2200	<0.008	.039	248					
6	396006	2300	<0.008	.035	237					
7	396007	2500	<0.008	.038	252					
8	396008	2550	<0.008	.029	265					
9	396009	2550	0.008	.032	224					
10	396010 *STD 3	2300	0.017							
11	396011	2750	<0.008	.033	224					
12	396012	2500	<0.008	.032	194					
13	396013	2450	<0.008	.024	224					
14	396014	2650	0.008	.028	208					
15	396015	2500	<0.008	.026	111					
16	396016	2550	<0.008	.025	120					
17	396017	2500	<0.008	.024	105					
18	396018	2350	<0.008	.028	137					
19	396019	2650	0.008	.025	130					
20	396020	2150	0.008	.060	73					
21	396021	1800	<0.008	.061	71					
22	396022	2150	0.008	.060	39					
23	396023	2100	0.008	.066	48					
24	396024	2150	<0.008	.065	6					
25	396025	1950	<0.008	.072	47					

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

380

ANALABS

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

599381

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.04.0431J	07/04/87	2334	4 OF 4

TUBE No.	SAMPLE No.	Ti	Au							
1	396026	2050	<0.008	.069	21					
2	396027	1950	<0.008	.072	26					
3	396028	2150	<0.008	.065	20					
4	396029	2150	<0.008	.060	39					
5	396030	2050	<0.008	.063	23					
6	396031	2250	<0.008	.062	39					
7	396032	2250	<0.008	.053	7					
8	396033	2300	<0.008	.057	23					
9	396034	2150	<0.008	.070	12					
10	396035	2250	<0.008	.027	116					
11	396036	2300	<0.008	.028	118					
12	396037	2300	<0.008	.033	148					
13	396038	2150	<0.008	.026	92					
14	396039	2400	<0.008	.025	118					
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

APPENDIX 14.

599383

SAMPLE NO.	LOCATION	N	E	REMARKS
355831	I_1/5600N costean	5607	4184	Dacite Lava
355832	I_1/5600N costean	5596	4097	QTZ/SER/PY altered dacite lava.

HATFIELD

599384

383

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

21st July, 1986

REPORT CMS 86/7/16

YOUR REFERENCE:	Letter dated 11.7.1986
DATE RECEIVED:	14th July, 1986
SAMPLE NOS.:	355831, 355832
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

599385

REPORT CMS 86/7/16

Two rock chip samples from the Que River area were received for petrological examination and brief description. Representative thin-sections were prepared and examined together with respective offcuts. Attached tabulated descriptions summarise the microscopic data.

Summary

Both samples represent altered felsic intermediate-acid lavas,with 355831 classified as leuco-andesitic and 355832 as dacitic on relict compositional and textural grounds. These rocks exhibit chloritic and relatively marked and pervasive sericite-quartz alteration patterns, respectively.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
355831 (T.S. 56262)	Leuco-Andesite. Disseminated albitised/variably chlorite-stained to sericite-pseudomorphed feldspar and minor sericite-chlorite-pseudomorphed amphibole phenocrysts in a chlorite-stained, feldspar-microlitic, felsic-mesostasised groundmass.	Porphyritic, incipiently flow-structured (weakly subtrachytic), weakly banded.	Leucoxenised opaques, minor primary (mesostasis) quartz. Minor microscale quartz veinlets.	Chlorite(-sericite-albite)-altered felsic-intermediate lava with ferromag-deficient (leuco-)andesitic characteristics.
355832 (T.S. 56263)	Amygdaloidal Dacite. Sericite-pseudomorphed feldspar and minor leucoxenic sericite-quartz-pseudomorphed amphibole phenocrysts, frequent quartz micro-amygdales in a matrix of sericite and felsitic quartz. Pyritic sericite-quartz veinlets.	Flow-structured, porphyritic, strongly micro-amygdaloidal, felsitic.	Leucoxenised opaques. Sporadic late veinlets of quartz and degraded/ferruginised carbonate.	Thoroughly sericite-quartz-altered micro-amygdaloidal dacitic characteristics. Pyrite concentrated in, and marginal to, early sericitic quartz veinlets.

49388

599387

(21)

Project 886 Idaffield Analyses for Cr, Ni, Zr, Ti

Co Ordinate	Sample No.	Depth	Colour
5610N			
4000E	377864	20 c	WH
25	65	80 c	WH
4050E	66	80 c	GY/WH
Section	Samples	(ALL 10 ELEMENTS)	
8-7	377867		
7-6	68	I. COSTEAN	
6-5	69	5600N	
5-4	70		
4-3	71		
3-2	72		
2-1	377873		
4200E	377874	1m c	BR
25	75	70 c	GR/BR
50	76	80 c	OR
75	77	70 c	OR
4300E	78	80 c	GY/BR/OR
25	79	80 c	GR/BR
50	377880	70 c	GR/BR
75	81	70 c	BR
4400E	377882	60 c	BR
	377883	* STD.	4

Co Ordinate	Sample No.	Depth	Colour

SOIL BAGS

397

599388

(21)

COMLABS SERVICES PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex LABCOM AA89323

NATA REGISTERED No. 1526

I, Coston - 5600N

18 JUN REC'D

OUR REF.:

YOUR REF.: COM860832

300

Mr. A. M. Hespe
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE

TAS 7320

June 13, 1986

Dear Sir

RE: JOB COM860832

Enclosed are the assays for the samples delivered to our laboratory on June 4, 1986

Yours Sincerely,
COMLABS PTY LTD

per :

Report Length : 4 pages

388

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ANALYTICAL REPORT

JOB COM860832
O/N : 300

SAMPLE	Cu	Pb	Zn	Ag	Ni	Cr	Ti
377867	20	20	75	<1	4	12	2150
377868	3	20	34	<1	4	18	2150
377869	3	16	50	<1	<4	22	1750
377870	6	28	145	<1	14	24	1950
377871	8	20	130	<1	8	38	2150
377872	12	26	175	<1	8	32	2300
377873	24	50	130	<1	38	230	3200
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS1B	AAS1B	COL4

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JOB COM860832
O/N : 300

ANALYTICAL REPORT

SAMPLE	As	Ba	Zr
377867	60	155	155
377868	34	540	170
377869	8	250	170
377870	55	330	170
377871	22	140	165
377872	20	370	200
377873	30	220	175
UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1

390

599391 (11)

Project Hatfield — Analyses for Cr, Ni, Zr, Ti

Co-ordinate	Sample No.	Depth	Colour
5400N			
4000E	377830	60 c	GY
25	31	50 c	GY
50	32	50 c	GY
75	33	70 c	OR/BR
4100E	34	80 c	OR/BR/GY
25	35	30 c	OR/BR/GY
50	36	30 c	OR/BR
75	37	80 c	OR/BR
4200E	38	70 c	OR/BR
25	39	90 c	OR/BR
50	377840	60 c	OR/BR
75	41	70 c	OR/BR
4300E	42	80 c	OR/BR
25	43	80 c	BR/GY
50	44	70 c	OR/BR
75	45	50 c	OR/BR
4400E	377846	40 c	OR/BR

Co-ordinate	Sample No.	Depth	Colour

Project Hatfield 391 Analyses for Cr, Ni, Zr, Ti (11)

Coordinate	Sample No.	Depth	Colour
5500N			
4000E	377847	20 c	GY
25	48	50 c	BK/WH
50	49	NO SAMPLE * STD.	
75	377850	10 B+C	GY/WH
4100E	51	10 C	GY
25	52	30 c	RR/GY
50	53	20 C	GY
75	54	20 C	OR/GR
4200E	55	50 C	OR/KH
25	56	50 c	OR/RED
50	57	70 C	GY/OR
75	58	60 C	OR/RED
4300E	59	30 C	OR/GY
25	377860	50 C	OR
50	61	20 C	OR/KH
75	62	10 C	OR/WH
4400E	377863	20 c	KH/GR

Coordinate	Sample No.	Depth	Colour

4

599392

Project Hatfield 392 Analysis for Cr, Ni, Zr, Ti (11)

Co-ordinate	Sample No.	Depth	Colour
5400N			
4000E	377864	20 c	WH
25	65	80 c	WH
4050E	66	80 c	GY/WH
Station	Samples (ALL 10 ELEMENTS)		
8-7	377867		
6	68		
5	69		
4	70		
3	71		
2	72		
1	377873		
4200E	377874	1m c	BR
25	75	70 c	GR/BR
50	76	80 c	OR
75	77	70 c	OR
4300E	78	80 c	GY/BR/OR
25	79	80 c	GR/BR
50	377880	70 c	GR/BR
75	81	70 c	OR
4400E	377882	60 c	BR
	377883	* STD.	4

Co-ordinate	Sample No.	Depth	Colour

STATION BAGS

599693

599394 (11)

393

COMLABS SERVICES PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex LABCOM AA89323

NATA REGISTERED No. 1526

HAT. Soil samps. 18 JUN REC'D

5400, 5500, 5600N

OUR REF.:

YOUR REF.: COM860832

300

N.B. see repeat assays attached unless otherwise stated repeat values supersede values in this report

Mr. A. M. Hespe
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE

TAS 7320

June 13, 1986

Data entered 25/6/86

Dear Sir

RE: JOB COM860832

Enclosed are the assays for the samples delivered to our laboratory on June 4, 1986

Yours Sincerely,
COMLABS PTY LTD

per :

Report Length 4 pages

394

599395

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JOB COM860832
O/N : 300

ANALYTICAL REPORT

SAMPLE	Zr	Ni	Cr	Ti	Zr/Ti
377830	130	8	38	3050	.043 5400N/400E
377831	130	6	70	3600	.036
377832	125	6	75	3650	.034
377833	120	26	155	3700	.032
377834	125	16	250	4050	.031
377835	125	4	32	2900	.043
377836	120	24	240	4250	.028
377837	135	80	740	4150	.032
377838	145	175	660	3850	.038
377839	155	130	630	4150	.037
377840	115	26	85	2850	.040
377841	150	42	165	3150	.048
377842	145	40	210	4050	.036
377843	120	6	75	3400	.035
377844	150	4	38	5050	.030
377845	155	<4	40	5000	.031
377846	170	<4	26	5100	.033 5400N/400E
377847	175	<4	26	4900	.036 5500N/4000E
377848	125	<4	18	3400	.037
377849	195	14	22	2950	* STD. 4
377850	115	<4	34	2850	.040
377851	110	<4	40	3000	.037
377852	135	<4	26	3000	.045
377853	110	12	380	3650	.030
377854	140	10	55	2050	.068
UNITS	ppm	ppm	ppm	ppm	
SCHEME	XRF1	AAS1B	AAS1B	COL4	

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ANALYTICAL REPORT

JOB COM860832
O/N : 300

SAMPLE	Zr	Ni	Cr	Ti		
377855	90	120	600	3950	.022	
377856	85	120	500	3350	.025	
377857	150	50	240	4350	.034	
377858	100	60	450	3300	.030	
377859	115	42	240	2850	.040	
377860	150	20	105	3500	.042	
377861	165	10	14	3800	.043	
377862	165	6	28	3400	.048	
377863	210	6	18	3850	.054	5500N/4400E
377864	135	<4	12	3500	.039	5600N/4000E
377865	135	4	14	3950	.034	4025E
377866	120	4	20	3200	.037	4050E
377874	175	38	175	3400	.052	4200E
377875	160	200	730	4000	.040	
377876	110	100	250	1900	.058	
377877	170	22	32	3400	.050	
377878	120	16	14	3450	.035	
377879	145	4	44	3500	.041	
377880	170	<4	26	3250	.052	
377881	160	4	22	2700	.059	
377882	150	14	55	3650	.041	4400E
377883	200	8	24	3150	* STD. 4	
UNITS	ppm	ppm	ppm	ppm		
SCHEME	XRF1	AAS1B	AAS1B	COL4		

396 REPEATS 599397

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(11)

ANALYTICAL REPORT

JOB COMA860832 O/N : Repeat Assays

Results in ppm

SAMPLE	%Ti	Ni
377830	0.38	<4
377831	0.42	6
377832	0.46	4
377833	0.43	10
377834	0.48	12
377835	0.33	<4
377836	0.53	30
377837	0.50	110
377838	0.46	190
377839	0.50	140
377840	0.38	50
377841	0.40	55
377842	0.46	48
377843	0.35	10
377844	0.53	<4
377845	0.57	6
377846	0.55	4
377847	0.51	<4
377848	0.41	6
* 377849	0.40	8
377850	0.38	8
377851	0.37	<4
377852	0.38	6
377853	0.43	12
377854	0.23	16

.../ 2

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ANALYTICAL REPORT

JOB COMA860832 O/N : Repeat Assays

Results in ppm

	SAMPLE	%Ti	Ni
	377855	0.49	120
	377856	0.41	140
	377857	0.61	85
	377858	0.42	75
	377859	0.45	60
	377860	0.43	26
	377861	0.42	10
	377862	0.43	12
	377863	0.53	16
	377864	0.44	8
	377865	0.47	8
	377866	0.41	10
	377874	0.38	55
	377875	0.48	250
	377876	0.42	140
	377877	0.45	34
	377878	0.52	26
	377879	0.37	22
	377880	0.35	14
	377881	0.33	10
	377882	0.44	26
*	377883	0.34 ?	16

Method of Analysis : Ti : XRF1
Ni : AAS1B

.../ 3

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ANALYTICAL REPORT

JOB COMA860832 O/N : Repeat Assays

Results in ppm

SAMPLE	Ba	As	%Ti	Ni
377867	210	60	0.22	18
377868	620	36	0.24	12
377869	270	10	0.23	10
377870	350	55	0.24	22
377871	175	22	0.24	24
377872	380	16	0.28	26
377873	220	36	0.39	65

Method of Analysis : Ba As Ti : XRF1
Ni : AAS1B

APPENDIX 15.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: I. UTEM ZONE

400

599401

HOLE NO: HAT-7

PAGE: 1 of 6

LOGGED: AMH

DATE: MARCH 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
12.7				TRICONE - NO RECOVERY.			12.7							
			ANDESITIC FELDSPAR PHYRIC LAVA.	REMANENT UNWEATHERED CORE OF GREY-GREEN MASSIVE A. FP. L. (NOT Bx) FELDSPARS ARE WHITE, EVENLY DISPERSED, ≤ 2mm. CONTACT APPRX.			VEINS VERY FEW Qtz MnOx VEINLETS				OX4			
17.0														
			BASALT LAPILLI VOLCANICLASTIC	PREDOMINANTLY BASALTIC VOLCANICLASTIC. FINE-MEDIUM LAPILLI MATRIX WITH 10-20% VOL OF VAGUE SUB-ROUNDED LITHIC CLASTS INCLUDING VESICULAR BASALT LAVA BLACK; PINK ALTERED FRAGMENTS AND MORE ANGULAR 1-5cm DARK GREEN FRAGMENTS SPOTTED WITH ?EPIDOTE.										
23.6											OX2			
26.1											OX3			
29.5											NOX			
30.0							QUARTZ CALCITE ± SULPHIDE, M WISPY VEINS, VESICLE FILLING AND VEIN LIKE IRREGULAR INCLUSIONS IN ROCK.	3	30.0 PINK-BUFF YELLOW SPH, CALCITE PY, CPY, TRACE GAL. MOD. WITH GOETHITE 37.0 VEINS					
33.6														
34.0							TEXTURE AS ABOVE, BUT NO VISIBLE SULPHIDES SOME VEINS INCLUDE MANGAN-PURPLE MINERAL & CARB OR SILICEOUS	2						
38.3	HQ NQ													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

401

599402

PROJECT : HATFIELD

PROSPECT: I. VTEM ZONE

HOLE NO: HAT-7

PAGE: 2 of 6

LOGGED: AMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			BASALT LAPILLI VOLCANICLASTIC			" 1						
46												
48												
50												
52						53.0						
54						" 2						
56												
58												
60				60.9	60.9			FT 60.0, 45cm 10°CA RUBBLE, SANDS. VEINING, SILICIFIED STONE	OX ? SEVERAL 4/m 2mm			
62					WEAK PROPYLITIC ALTERATION BETWEEN FAULT AND CONTACT. 2							
64												
66				- FABRIC AT 45° C.A. DEVELOPED BETWEEN FAULT AND CONTACT								
68												
70									70.1		SEE LOG ON CONTACT	
72			DACITE LAVA? INTRUSIVE? BRECCIA	MOTTLED BUFF - CREAM - LIGHT GREEN DACITE. PORPHYRITIC WITH SMALL (<2mm) EVENLY DISTRIBUTED EUHEDRAL PHENOCRYSTS ALTERED TO VEIN-GREEN ILLITE/SERICITE OR CREAM ?CARBONATE. BRECCIA OR STOCKWORK TEXTURE - DUE TO A STOCKWORK LIKE MATRIX OF DACITE GREEN SILICA + PY.	71.6 SILICA / PYRITE STOCKWORK VEINING, SERICITE SILICA ALT. OF FRAGMENTS 3				OX 3 72.2		DACITE VERY SIMILAR TO TEXTURE IN LOWER PART OF MC-5 MUCH OF DACITE	
74												
76												
78									OX 1			
80						" 2						
82					" 3							
84												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: I, VTEM ZONE

402

599403

HOLE NO: HAT-7

PAGE: 3 of 6

LOGGED: AMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86					A 3	" 2			86.9			
88									PATCHY			
90									OX3			
92									92.0			
94									OX1			
96					96.0 PINK (TRACE) ASS. OF PERVASIVE CENTRELINE (?) ALTERATION WITH STRONGEST MAFIC CROSSCUTTING VEINS.				95.0			
98												
100						" 2			OX3			
102						101.0 " 1			103.1			
104									OX2			
106					106.0 " 3				109.0			
108												
110					111.0				OX3			
112												
114					AS ABOVE WITH INTENSE PATCHY OF GREEN SERICITE ALT WITH DARK GREEN CHLORITE SPOTS (FUCHS?) 4						PRE & PERVASIVE ALTERATION	
116									115.0			
118					118.2	117.1 " 1						
120			BASALT LAVA.	VERY VESICULAR GREEN - GREY BASALT LAVA.	PATCHY MODERATE TO INTENSE SERICITE ALT. GREENISH SERICITIC PATCHES HAVE INTERMITTENT DARK GREEN CHLORITE (FUCHS?) SPOTS. 122.9 NO VEINING. 4	ABUNDANT CARB. + QUARTZ MAINLY IN VUGGY FILLING, ALSO AS WISPY VEINLETS AND PATCHES 123.5						
122												
124			BASALTIC POLYMICT VOLCANICLASTIC	GREY-GREEN. VARIABLE TEXTURE: 122.9 - 124.7 MATRIX DOM; FRAGMENTS ANGULAR AND MOSTLY < 1-2cm — INCLUDE THE GREEN ASH, MINOR LAM 124.7 AND SERICITE WISPS.	CONTINUATION OF PATCHY MOD - INTENSE SERICITE ALT. 4	3 QUARTZ ± CARB VEINLETS, IRREGULAR <1-5mm WIDE, SOME PATCHES TO 30cm. VEINS VERY VESICULAR						
126												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: II UTEM ZONE

403

599404

HOLE NO: HAT 7

PAGE: 4 of 6

LOGGED: AMN

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128			BASALTIC POLYMICT VOLCANICLASTIC	124.7 – 136.0 PREDOMINANTLY BASALTIC. OBVIOUS FRAG. ARE BUFF ?DACITE – BASALTIC FRAGS. ARE NOT WELL DEFINED AND MERGE INTO THE BASALTIC MATRIX. FRAG. SIZE 2–10cm. CLASTS TEND TO BE ALIGNED AT 45° C.A. OVER 131.0 – 136.0		"	3					122.9 – 138.6 Y. VLC AND B Y. VLC. ARE STRONGLY PYRITIC MTX. WHICH IS VERY LIKE Y ORE HOST HORIZON AT DUFF AND IN SOUTH TRIANGLE.
130					"		4						
132													
134				100m OF INTENSE SERICITIZATION ON CONTACT									
136				136.0	136.0								
138			POLYMICT VOLCANICLASTIC	FABRIC ALIGNED AT 45° C.A. NO REMNT. MAFIC FIAMMI LIKE SERICITE FRAGS. STRONGLY ALTERED.	"		5						
140			138.6 DACITE LAVA? INTRUSIVE? (LEUCOMONZITE)	GRADATIONAL CONT OVER 1.0m – FRAG. OF DACITE MIXING WITH VLC	138.6 STRONGLY PINK (Fe/Li) MX. WITH SOME PATCHES OF CREAM SERICITE + STOCKWORK VEINLET PYRITE (SILICA) MX		4					138.9 – 220.2 PARTLY ANDESITIC – PETROLOGY ___ TO ___ IN MC-11	
142				PINK ALTERED PORPHYRITIC ?LAVA WITH BRECCIA TEXTURE DUE STOCKWORK VEINING BY FINE GRAINED PYRITE (+ QTZ) PHENOCRYSTS ARE EUHEDRAL SPHENE <2mm AND ALTERED TO SERICITE OR CHLORITE.								STOCKWORK PYRITE RELATIONS TO DIAM. MATRIX OVER DISTANCE OF 0.5m CLOSE (CM) – EXPLANATION OF UTEM?. EXCELLENT PY. OF MINM IS EARLIER THAN STRONG VEINING	
144													
146					"		3						
148													
150													
152				SAME LITHOLOGY AS DACITE (71.6 – 118.2) WITH LESS SERICITE MX. AND MUCH MORE INTENSE PINK (Fe/Li) MX.									
154													
156					"		4						
158													
160				160.0 GREEN – GREY MASSIVE DACITE. LITHOLOGY AS ABOVE BUT WITH NO STOCKWORK VEINING. NO PINK Fe/Li MX.	160.0 IRREG PATCHY / PERV MOD PINK (Fe/Li) MX AND CREAM SERICITE MX. PHENOCRYSTS ARE STILL SERICITISED.		1						
162													
164									F 162.3; 16m LINE TO° TO CA; CHL + CALC ON FRACS TOO.				
166					"		3						
168					"		1						

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: I, ITEM ZONE

404

DIAMOND DRILL LOG

599405

HOLE NO: HAS-7

PAGE: 5 of 6

LOGGED: AMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170							3						
172													
174													
176													
178													
180				179.4 Limestone as above. Re-appearance of breccia texture / stockwork pyrite (+qtz + ?chl) veins. Pyrite is noticeably more coarsely crystalline than in stockwork veins in (116-176m)	179.4 Brown/pink pervasive FeK-f.								
182													
184													
186													
188													
190													
192													
194													
196													
198													
200													
202													
204													
206													
208													
210							3						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: UTEM I, ZONE

405

599406

HOLE NO: HAT-7

PAGE: 6 of 6

LOGGED: AMH

DATE: MAR 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212						"	3						
214													
216													
218													
220			220.9 EOH										

SAMPLE NO	: 379377
LOCATION	: HAT-7/15.8
REPRESENTATIVE OF	: 12.7-19.0
REMARKS	: Feldsparphyric andesite lava.

SAMPLE NO	: 379378
LOCATION	: HAT-7/30.5
REPRESENTATIVE OF	: 19.0-60.9
REMARKS	: Basaltic Volcaniclastic

SAMPLE NO	: 379379
LOCATION	: HAT-7/67.5
REPRESENTATIVE OF	: 60.9-71.6
REMARKS	: Basaltic volcaniclastic as for 379378, with fabric at 45° to core axis.

SAMPLE NO	: 379380
LOCATION	: HAT-7/80.5
REPRESENTATIVE OF	: 71.6-111.0
REMARKS	: Autobrecciated dacite lava. Perhaps an altered feldsparphyric andesite lava.

SAMPLE NO	: 379381
LOCATION	: HAT-7/111.7
REPRESENTATIVE OF	: 111.0-118.2
REMARKS	: Strongly sericite altered version of 379380.

SAMPLE NO	: 379382
LOCATION	: HAT-7/119.9
REPRESENTATIVE OF	: 118.2-122.9
REMARKS	: Highly vesicular basalt lava.

SAMPLE NO	: 379383
LOCATION	: HAT-7/124.5
REPRESENTATIVE OF	: 122.9-124.7
REMARKS	: Matrix dominant basaltic (?) to polymict volcaniclastic. Describe matrix and composition of clasts.

SAMPLE NO	: 379384
LOCATION	: HAT-7/127.3
REPRESENTATIVE OF	: 124.7-136.0
REMARKS	: Coarse Basaltic volcaniclastic.

SAMPLE NO	: 379385
LOCATION	: HAT-7/136.5
REPRESENTATIVE OF	: 136.0-138.6
REMARKS	: Sericitised/pyritised polymict volcaniclastic with definite fabric. Is this fabric tectonic?

SAMPLE NO	: 379386
LOCATION	: HAT-7/143.6
REPRESENTATIVE OF	: 138.6-160.0; 179.4-220.9
REMARKS	: Similar to 379380. Strongly pink (fld/si) altered and pyrite veined.

SAMPLE NO	: 379387
LOCATION	: HAT-7/173.6
REPRESENTATIVE OF	: 160.0-179.4
REMARKS	: Rock type as for 379386, less altered.

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659
FAX. 08-363 1820

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

1st June, 1987

REPORT CMS 87/5/7

YOUR REFERENCE:	Letter dated 5.5.1987
DATE RECEIVED:	7th May, 1987
SAMPLE NOS.:	379377 - 379387
SUBMITTED BY:	A.M. Hespe
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 87/5/7

A suite of eleven samples of drill core from DDH/HAT-7 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 carbonate stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite represents a sequence of altered basaltic and leuco-andesitic volcanics dominated by lavas but including lava breccias and subordinate tuffs. Fragmentals (pyroclastics) are typically impure chert-matrixed and the overall range of textures is typical of the Que-Hellyer volcanics.

Alteration features are rather uniform, with essentially pervasive development of sericite-quartz-calcite-chlorite-pyrite assemblages. Albite is present locally as a replacement of primary plagioclases, which are more typically sericitised. Pyrite is more or less ubiquitous, but tends to be concentrated in sericitic veinlets and stringers. The sericitic assemblage is pervasive within basaltic facies as well as the relatively felsic (leuco-)andesites, and prehnite-pumpellyite assemblages are absent.

Individual rocks are variably sheared. Relatively sericite-veined types appear relatively fragmental mesoscopically in response to the mild but variable post-alteration stress effects. A thoroughly altered basaltic breccia (379379) is represented by a chloritic phyllite with corroded relics of lithic clasts and appears to reflect a proximal fault or shear zone.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379377 (T.S. 57879)	Leuco-Andesite. Albitised/weakly sericitic plagioclase-, minor leucoxenic chlorite-sericite-pseudomorphed amphibole phenocrysts; groundmass of similarly altered feldspar microlites with a silicified mesostasis, conspicuous fine pyrite.	Weakly flow-structured (subtrachytic) and (flow-)brecciated; semi-felsitic on a microscale.	Sporadic weakly chloritic quartz-albite and late quartz veinlets. Leucoxenised opaques. Minor pyritic, chloritic films.	Leuco-andesitic characteristics with a minor amphibole-rich ferromagnesian assemblage. Reflects subtle and pervasive silicification of groundmass with associated fine pyrite.
379378	Basaltic Breccia. Clasts of albitised plagioclase-/chloritised-silicified pyroxene-porphyritic basaltic lava with chlorite- to chlorite-albite-altered groundmasses. Sparse matrix, veinlets, replacements of chlorite-stained quartz.	Flow-structured, moulded to locally quartz-matrixed, lapilli to agglomerate grade, lithoclastic. Basaltic-textured clasts.	Chromite. Semi-pervasive fine to ultrafine pyrite disseminations. Sporadic late quartz-chlorite-calcite veinlets.	Basaltic lava breccia with a sparse corrosive chloritic quartz matrix. Pervasively chlorite(-quartz-albite)-altered, with disseminated pyrite.
379379	"Basaltic" Breccia. Pervasively chlorite-calcite-microcrystalline quartz-altered, poorly determinate lava clasts in a matrix of Mg-chlorite variably stained with microcrystalline calcite. Minor chlorite-calcite veinlets.	Corroded, shear-orientated, variably amygdaloidal to pumiceous clasts; sheared/phyllitic matrix, crenulated veinlets.	Minor leucoxenised opaques, traces of chromite, minor traces oxidised fine pyrite.	Thoroughly altered and sheared with finer detail obscured. Relict features consistent with a basaltic scoriaceous breccia (lava breccia or lithic tuff).
379380	Leuco-Andesite. Sericite-pseudomorphed feldspar-, minor calcite-sericite-quartz-pseudomorphed ferromagnesian phenocrysts in a kaolinitic to sericitic, microcrystalline quartz-altered and pyrite-stained felsic groundmass.	Weakly banded, flow-structured, incipiently flow-brecciated, microfelsitic. Incipiently sheared.	Semi-pervasive displacive network of sericite(-quartz-calcite) veinlets, late calcite veinlets. Leucoxenised opaques.	Similarities with 379377. Mild primary (flow) brecciation enhanced mesoscopically by displacive veinlets and mild shearing effects.
379381	"Breccia". Sericite and microcrystalline quartz in varying proportions with thinly disseminated ultrafine pyrite, sporadic pyritic-sericitic stringers, and discontinuous sericite-quartz-calcite veinlets.	Poorly sorted (psammite to lapilli grade), angular, lithoclastic; quartz-sericite-matrixed, weakly sheared.	Leucoxenised opaques, minor clots of chlorite, traces of chromite.	Polymict sedimentary breccia characteristics, with basalt-, andesite- and leuco-andesite-derived lava clasts. Thoroughly sericite-quartz-pyrite-altered and mildly sheared.
379382	Amygdaloidal Basalt. Abundant calcite-quartz amygdales, frequent carbonated feldspar and carbonate-chlorite-quartz pseudomorphed ferromagnesian phenocrysts in a carbonate-chlorite-minor quartz-altered groundmass.	Coarsely amygdaloidal/strongly porphyritic, with a vaguely relict basaltic-microtextured groundmass. Mildly sheared.	Thinly disseminated ultrafine pyrite. Disseminated chromite. Minor calcite veinlets (sheared).	Pervasively carbonate-chlorite (-quartz-pyrite)-altered, strongly amygdaloidal lava with relict basaltic characteristics, relatively conspicuous chromite.
379383	"Tuffaceous Breccia". Loose framework of sericite-calcite-quartz-altered lava clasts, sericitised feldspar grains and similarly altered shards; cemented with slightly impure (sericitic), crypto- to microcrystalline chert.	Poorly sorted (silt to lapilli grade), chert-cemented lithic-vitric crystal fragmental. Incipiently sheared.	Leucoxenised opaques. Pervasively disseminated pyrite. Minor calcite veinlets.	Chert-cemented, subaqueous "leuco-andesitic" tuff; pervasively sericite-calcite(-quartz-pyrite)-altered. Preferred orientation is primary, but enhanced by shearing.
379384	Basaltic Breccia. Sericite, near-isotropic chlorite and calcite in varying proportions with subordinate to minor, fine to microcrystalline quartz. Sparse interclast vugs, minor veinlets of calcite.	Moulded to locally calcite-matrixed, lapilli to agglomerate grade, lithoclastic. Weakly sheared/phyllitic.	Traces of pyrite and chromite. Semi-pervasive ultrafine leucoxenised opaques.	Pervasively carbonate-chlorite-sericite-quartz-altered/mildly sheared lava breccia. Clasts poorly determinate, but include variably calcite-amygdaloidal basaltic types.

599411

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379385	Sheared Breccia. Relict framework of pervasively sericitised/variably chloritic lava clasts, sparse sericitised feldspar, chloritised ferromagnesian grains. Matrix of sericitic impure chert/cherty argillite; locally silty to fine sandy tuffaceous.	Relatively sheared/ phyllitic. Relict chert-, pelite-matrixed psammite to lapilli grade lithoclastic.	Semi-pervasive fine to ultrafine pyrite. Minor leucoxenised opaques, traces of chromite.	Primarily an impure chert/cherty argillite-matrixed volcanoclastic breccia. Clasts include poorly defined basaltic and andesitic types. Relatively sheared/semi-boudinaged.
379386	Andesite. Sparse sericitised feldspar- and quartz-sericite-pseudomorphed ferromagnesian phenocrysts, sericite-quartz-altered felsic groundmass. Irregular veinlets, stringers of pyrite, sericite, quartz and calcite.	Weakly porphyritic; incipiently quartz-calcite-amygdaloidal, weakly flow-structured. Displacive, weakly sheared veinlets.	Leucoxenised opaques. Minor pyritic stringer-displacive calcite-quartz veinlets.	Possibly strictly leuco-andesitic; sparse phenocryst assemblage is poorly diagnostic. Pinkish pigmentation is primary rather than secondary.
379387 (T.S. 57889)	Amygdaloidal Leuco-Andesite. Sericitised feldspar-, minor leucoxenic sericite-pseudomorphed amphibole phenocrysts, frequent quartz micro-amygdales in a sericite-quartz-altered felsic groundmass. Minor clots, films of chlorite.	Porphyritic, strongly micro-amygdaloidal, flow-structured, microfelsitic. Very incipiently sheared.	Rare calcitised pyroxene and corroded quartz phenocrysts. Leucoxenised opaques. Minor traces of pyrite.	Thoroughly sericite-quartz(-calcite-chlorite)-altered, strongly quartz-micro-amygdaloidal lava with typical leuco-andesitic relict compositional characteristics.

P. 412

ANALABS

599413

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
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ANALYTICAL REPORT No. 23.3.08.04460

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
2374	

DATE RECEIVED	RESULTS REQUIRED
06/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	14/05/87	1	11

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	379377/87	SC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379377/87	SC							Ba,Cr,Zr,Ti/401		
	379377/87	SC							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

Hot - 7
petrology 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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599414

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04460	14/05/87	2374	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379377	10	25	360	<0.5	10	23	1600	10	180
2	379378	50	80	1700	2.5	145	17	610	550	100
3	379379	15	<5	230	<0.5	100	6	290	710	90
4	379380	10	<5	15	1.0	10	98	4600	35	170
5	379381	20	10	40	1.0	70	110	2150	620	180
6	379382	20	<5	65	<0.5	145	37	220	690	70
7	379383	15	10	30	0.5	30	100	480	30	150
8	379384	10	<5	90	<0.5	70	11	380	230	110
9	379385	165	15	1600	0.5	60	71	720	240	160
10	379386	30	15	60	1.0	25	110	1100	10	150
11	379387	5	<5	25	<0.5	5	16	890	8	160
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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414

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599415

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04460	14/05/87	2374	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Zr/Ti	Cr					
1	379377	2000	0.017	.090	10					
2	379378	2400	0.008	.042	550					
3	379379	2700	0.008	.033	710					
4	379380	1500	<0.008	.113	35					
5	379381	2400	0.067	.075	620					
6	379382	1550	<0.008	.045	690					
7	379383	2300	0.058	.065	30					
8	379384	2950	<0.008	.037	230					
9	379385	3700	<0.008	.043	240					
10	379386	1950	0.008	.077	10					
11	379387	1400	<0.008	.114	8					
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 16.

417

599417

PAGE ONE OF ONE

CORE GRIND SAMPLING - ~~MACKINTOSH~~ / HATFIELD

HOLE No. HAT-7

DATE 29.1.87

No.	SAMPLE NUMBER	INTERVAL		ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	395201	13.9	17.0	Cu, Pb, Zn, Ag, As, Ba Cr Ti Zr Ni Au					
2	02	17.0	30.0						
3	03	30.0	40.0						
4	04	40.0	50.0						
5	05	50.0	60.0						
6	06	60.0	70.1						
7	07	70.1	80.0						
8	08	80.0	90.0						
9	09	90.0	100.0						
10	395210	100.0	110.0						
11	11	110.0	117.2						
12	12	117.2	123.0						
13	13	123.0	130.0						
14	14	130.0	138.6						
15	15	138.6	150.0						
16	16	150.0	160.0						
17	17	160.0	170.0						
18	18	170.0	180.0						
19	19	180.0	190.0						
20	395220	190.0	200.0						
21	21	200.0	210.0						
22	22	210.0	220.0						
23	395223			*STD 3	ST				
24									
25		+ A		STANDARD					
26									
27									
28									
29									
30									
31									
32									

ANALABS 599418 05 MAR REC'D

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

ANALYTICAL REPORT No. [illegible]

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

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

ORDER No.	PROJECT
1490	

DATE RECEIVED	RESULTS REQUIRED
11/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	04/03/87	2	23

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	395201/395223	CO	Prep: 15						Cu,Pb,Zn,Ag,Ni/101,As/114		
	395201/395223	PU							Ba,Cr,Zr,Ti/02		
	395201/395223	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

HAT-7
CORE GRINDS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
[illegible]hole 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
[illegible]il	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
[illegible]lp	PU	HF mixture	A6	ignition	IG	titration	TTN
[illegible]ater	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
[illegible]eavy mineral	HM					Inductively coupled plasma	ICP

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419

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599419

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04219	04/03/87	1498	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	
1	395201 13.9 - 19.0	510	92	1550	1.0	85	24	2500	30	tp/K
2	395202 19.0 - 30.0	515	1350	2050	0.5	175	34	1700	530	BYvlcl
3	395203 30.0 - 40.0	490	175	3950	0.5	200	20	690	530	"
4	395204 40.0 - 50.0	395	50	1550	<0.5	165	17	570	530	"
5	395205 50.0 - 60.0	290	80	2200	<0.5	130	22	840	470	"
6	395206 60.0 - 70.1	180	200	380	0.5	130	15	1350	580	"
7	395207 70.1 - 80.3	795	15	770	1.5	170	110	4350	35	DL
8	395208 80.0 - 90.0	400	20	705	0.5	95	100	6100	<5	"
9	395209 90.0 - 100.0	365	15	345	1.0	85	130	3150	5	"
10	395210 100.0 - 110.0	670	105	560	2.0	125	340	2450	20	"
11	395211 110.0 - 117.2	380	30	365	<0.5	100	130	1900	110	"
12	395212 117.2 - 125.0	125	10	130	<0.5	155	80	540	800	
13	395213 125.0 - 130.0	60	5	100	<0.5	70	27	430	200	Yvlcl
14	395214 130.0 - 138.6	110	10	160	<0.5	65	75	560	200	Yvlcl
15	395215 138.6 - 150.0	475	15	260	0.5	75	70	1300	<5	DL
16	395216 150.0 - 160.0	225	15	530	<0.5	75	80	1100	15	DL
17	395217 160.0 - 170.0	260	5	340	<0.5	75	48	950	<5	DL
18	395218 170.0 - 180.0	115	<5	140	<0.5	30	25	820	<5	DL
19	395219 180.0 - 190.0	70	<5	85	<0.5	30	28	1050	15	DL
20	395220 190.0 - 200.0	225	20	325	0.5	60	250	1000	<5	DL
21	395221 200.0 - 210.0	170	20	230	<0.5	45	430	1250	<5	DL
22	395222 210.0 - 220.0	110	<5	140	<0.5	45	43	640	15	DL
23	395223 * STD	120	190	2450	<0.5	280	13	1150	870	All OK
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.

599420

420

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.03.04219	04/03/87	1498	1 OF 2

TUBE No.	SAMPLE No.	Zr	Ti	Au	Zr/Ti					
1	395201	200	2000	0.017	0.100					
2	395202	170	3300	<0.008	.052					
3	395203	130	2450	0.008	.053					
4	395204	140	2650	0.008	.053					
5	395205	120	2600	<0.008	.046					
6	395206	100	2450	<0.008	.041					
7	395207	200	1750	0.025	.114					
8	395208	190	1500	0.032	.127					
9	395209	180	1450	0.017	.124					
10	395210	170	1500	0.267	.113					
11	395211	180	1750	0.117	.103					
12	395212	120	2100	<0.008	.057					
13	395213	130	2750	<0.008	.047					
14	395214	140	3100	<0.008	.045					
15	395215	170	2200	0.017	.077					
16	395216	200	2400	0.017	.083					
17	395217	180	1750	<0.008	.103					
18	395218	170	1350	<0.008	.126					
19	395219	160	1350	0.008	.119					
20	395220	170	1400	<0.008	.121					
21	395221	170	1400	<0.008	.121					
22	395222	170	1950	<0.008	.087					
23	395223 X3 DO	90	2350	0.008						
24				OK						
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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421

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599421

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	[illegible]	04/05/87	1498	2 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	
1										
2										
3										
4										
5										
6										
7										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	5	1	10	5	
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
24	METHOD	101	101	101	101	101	114	401	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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599422

424

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.00.04219	04/03/87	1498	2 OF 2

TUBE No.	SAMPLE No.	Zr	Tl	Au						
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	50	0.005						
23	UNITS	PPM	PPM	PPM						
24	METHOD	401	401	309						
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

APPENDIX 17.

SAMPLE NO.	DESCRIPTION	LOCATION	N	E
355842	Andesitic or basaltic volcaniclastic	Gordon's Hill Road	4430N	4840E
355844	Basalt Lava	P490, Gordon's Hill Road	4150N	3740E
355845	Basalt Lava	Costean off Gordon's Hill Road	4028N	3580E
355846	Basalt Lava	East of Gordon's Hill Road	4100N	3800E
355847	Basalt Lava	Murchison Highway Cutting	4510N	2610E
355848	Basalt Lava	Murchison Highway Cutting	4470N	2615E
355849	Basalt Lava	P21, 4300N/3200E Costean	4327N	3130E
355850	Micaceous Shale	P19.5, 4300N/3200E Costean	4325N	3140E

425

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. A.M.Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

2nd September, 1986

REPORT CMS 86/8/10

YOUR REFERENCE:	Letter dated 15.8.1986
DATE RECEIVED:	18th August, 1986
SAMPLE NOS.:	355842, 355844-355850
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

599426

REPORT CMS 86/8/10

Mt. Charter Rocks 355842, 355844 - 355850

Eight rock samples were received for petrographic study; thin-sections were prepared, and are described in the attached table.

Summary

Apart from 355850, the rocks are volcanics and include lavas and pyroclastics, as well as mixed rocks containing both extrusive and pyroclastic components.

Almost all the rocks are altered; the more basic rocks and glasses are chloritised, and the more felsic ones are generally silicified and argillised, which has the effect of lightening their colour. Because of the alteration, interpretations of origin and composition are naturally somewhat tentative; for instance, equating chloritic alteration with basaltic composition may well be erroneous, but seems a reasonable and logical assumption.

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
355842 (T.S. 56431)	Altered Lithic Tuff. Poorly defined, coarse sand- to grit-sized fragments of argillised/ chloritised dacitic, andesitic, and basaltic glassy lavas, some with quartz phenocrysts.	Grain-boundaries vague because of alteration; some perlitic and other glassy textures.	Some fragments contain small oligoclase phenocrysts. A few vitric tuff grains occur.	Composition of most fragments was intermediate to acid glass, with fewer basaltic/andesitic materials; these are chloritised, darker.
355844	Tuff-Lava. Altered porphyritic andesite with plagioclase phenocrysts, intermingled with streaks of darker, fine lava, containing angular fragments of a lighter, altered ?trachyte.	Apparently a composite flow with contrasting fabrics. Incorporated fragments up to 10 mm.	Limited quartz veining. Andesite contains small quartz-filled amygdales.	Andesite contained minor, now chloritised, ferromagnesians. The intimately intermingled phase is very fine-grained, featureless, mostly glassy.
355845	Chloritised Andesite. Scattered, cloudy but fairly fresh sodic andesine phenocrysts in groundmass of andesine laths with interstitial chloritised glass. A few quartz-filled and chloritic amygdales.	Flow-lineation around phenocrysts, amygdales. Uniform fabric. Phenocrysts up to 3 mm.	A few pseudomorphs of mosaic quartz after ?hornblende crystals. Rare quartz ?xenocrysts.	Rock classified as andesite because of plagioclase composition, paucity of ferromagnesians and other reasons. Dark colour due to chloritisation.
355846	Silicified ?Trachyte. Small phenocrysts of completely silicified feldspar, in a felsitic devitrified groundmass with small plagioclase laths and chlorite patches, leucoxenised ?magnetite.	Uniform fabric, with general flow-structure but felsitic textures, originally largely glassy.	A few chlorite-filled amygdales. Quartz patches with goethite after ?pyrite.	Rock was either leuco-andesite, or, more probably, a trachyte; now very extensively silicified, with chlorite deposition (not pseudomorphous).
355847	Chloritised, Silicified ?Basalt. Poorly defined quartz and chlorite pseudomorphs after ?feldspar, ?ferromagnesians, in fine chloritic mass with microgranular quartz throughout.	Present rock very uniform and featureless. Some suggestion of spherulitic textures in places.	Quartz veins with pyritic selvedges. A few quartz-chlorite amygdales.	Rock is very poorly preserved, with only vague textures. Possibly a largely glassy basalt, in the absence of other evidence.
355848	Basaltic Lava-Flow Breccia. Fragments of completely chloritised, silicified glassy ?basalt incorporated in a mass of the same rock; irregular quartz-filled amygdales.	Pseudomorphs after feldspar laths in places. Devitrification textures. Some flow-banding.	Larger vein-like quartz masses may be pipe amygdales. Fine leucoxenised ?magnetite.	Resembles 355847 and probably similar in origin/composition. Brecciated during flow, and originally largely glassy.
355849	Altered ?Welded Tuff. Shreds of chloritised ?basaltic glass, fragments of sericitised feldspar, silicified ?glass, occasional larger glassy lava fragments.	Components appear stretched, with some flow - "eutaxitic fabric"; fragmental textures.	Fine leucoxenised opaques. Rare chromite. Dendritic/skeletal magnetite in some fragments.	General impression of a fragmental rock rather than a lava; vitric and crystal components, minor lithic fragments.
355850 (T.S. 56438)	Ferruginised Shale. Parallel flakes of muscovite/sericite, silt-sized angular quartz grains, fine clay flakes, and ultrafine quartz cement. Variable goethite impregnation.	Well-bedded, uniform, with thin clayey laminations with parallel fractures and veins.	Goethite veins conformable with bedding. Thin silty quartzose layers.	Featureless sort of apparently normal clastic sediment; no evidence of volcaniclastic components.

599427

APPENDIX 18.

599429 (13)

423

COMLABS SERVICES PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex LABCOM AA89323

HAT. CHARTER DOLERITE

NATA REGISTERED No. 1526

JOB Nos. 860436
860528
860570
for Ni, Ti, Zr

OUR REF.: COM860932

YOUR REF.:

Mr. R. Debomford
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE

TAS 7320

July 7, 1986

Dear Sir

RE: JOB COM860932

Enclosed are the assays for the samples delivered to our laboratory on June 18, 1986

Yours Sincerely,
COMLABS PTY LTD

per :

Report Length 9 pages

COMLABS SERVICES PTY. LTD.

599430

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ANALYTICAL REPORT JOB COM860932

860436

SAMPLE	Ni	Ti	Zr	
378213	<4	1950	280	
378214	<4	3250	200	* STD.2 ↓
378215	4	2300	250	
378216	10	2600	230	
378217	12	2600	240	
378218	24	1800	240	
378219	10	1650	220	
378220	4	2150	300	
378221	8	1600	230	
378222	4	2150	320	
378223	8	1950	300	
378225	26	2050	330	
378226	<4	2300	320	
378227	6	2150	300	
378228	4	2050	290	
378229	12	2200	320	
378231	10	2450	270	
378232	40	2450	200	
378233	70	2450	185	
378236	40	4550	200	* STD.2
378237	20	4450	105	
378238	10	2600	115	
378239	6	3400	110	
378240	24	2100	120	
378241	60	3750	110	
UNITS	ppm	ppm	ppm	
SCHEME	AAS1B	COL4	XRF1	

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431

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr	
378242	60	3600	110	
378243	26	1400	115	
378244	20	3700	115	
378245	26	4150	130	
378246	6	1850	300	
378247	<4	2050	280	
378248	14	2850	260	
378249	8	2450	210	
378250	<4	1450	200	* STD.2
378251	<4	2050	175	
378252	<4	2250	220	
378253	<4	1700	280	
378254	<4	1250	300	
378255	4	1600	320	
378256	4	1950	270	
378257	8	2100	270	
378261	6	2150	300	
378262	<4	2250	300	
378263	<4	2250	330	
378264	10	3400	160	
378265	95	2450	135	
378266	65	2600	190	
378267	42	3300	185	
378268	16	2450	210	
378269	<4	3450	120	
UNITS	ppm	ppm	ppm	
SCHEME	AAS1B	COL4	XRF1	

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378270	95	4000	110
378271	155	4950	120
378272	75	5150	105
378273	105	5000	120
378274	155	5700	115
378275	105	5900	135
378276	105	6000	145
378277	80	4900	115
378278	65	5350	110
378279	<4	1950	230
378280	14	1950	210
378281	<4	2200	210
378282	18	1950	230
378283	8	2550	220
378284	<4	2150	240
378285	<4	1950	280
378286	10	1450	220
378287	4	1000	290
378288	<4	1500	280
378289	<4	1700	260
378290	<4	1650	270
378291	<4	2850	195 * STD. 2
378292	<4	1550	260
378293	4	1250	320
378294	<4	1350	320
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

860436

860528

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378295	<4	1700	300
378296	10	1650	270
378299	26	2550	210
378300	16	2000	230
378301	14	2650	200
378302	<4	1850	195
378303	32	2850	230
378304	36	2500	190
378305	12	2150	175
378306	60	4700	110
378307	90	6000	110
378308	115	5050	120
378309	110	4500	115
378310	95	4350	110
378311	130	3800	95
378312	8	2550	210
378313	<4	2750	210
378314	<4	2850	330
378315	<4	2750	350
378316	<4	1600	280
378318	<4	1400	320
378319	<4	1500	220
378320	6	1950	270
378321	<4	2150	270
378322	10	1850	310
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378323	<4	2100	250
378324	<4	2000	270
378325	<4	3100	195
378326	6	2000	250
378328	<4	2000	260
378329	8	2200	280
378330	4	2150	290
378332	<4	2700	230
378333	10	2400	220
378334	38	2600	180
378335	26	2400	135
378336	36	1650	175
378339	95	4750	120
378340	95	2450	120
378341	85	5150	100
378342	120	4950	110
378343	50	4500	95
378344	135	5000	115
378081	<4	2150	290
378082	<4	1900	250
378083	8	2000	260
378084	<4	2300	340
378085	<4	2700	330
378086	<4	2650	340
378087	6	1950	330
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

* STD. 2

860528

860570

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378088	8	2150	280
378089	<4	3000	195 * STD. 2
378090	8	4950	125
378091	<4	2150	180
378092	22	3450	150
378093	26	3800	125
378094	14	3750	130
378095	22	3300	120
378096	85	4850	125
378097	115	4600	100
378098	85	5050	95
378099	155	4600	95
378100	70	4750	95
378101	120	5700	130
378102	95	5100	110
378103	90	5400	120
378104	120	4900	105
378105	80	5550	110
378109	125	5250	115
378110	80	5050	115
378111	70	4600	90
378114	<4	1950	280
378115	<4	2300	250
378116	<4	2300	260
378117	<4	2100	210
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378118	16	1700	240
378119	4	1700	240
378120	14	1750	270
378121	8	1650	250
378122	8	1800	270
378123	20	2300	240
378124	6	2500	195
378125	44	1700	150
378126	16	3050	210
378127	34	6100	240
378128	60	3700	115
378129	170	4700	135
378130	145	5950	135
378131	18	3100	200 X STD.2
378132	115	6150	120
378133	105	5550	125
378141	135	4100	105
378143	30	2900	110
378144	30	4250	125
378145	36	3800	120
378146	22	3500	110
378147	6	1900	290
378148	4	1300	230
378149	4	2200	200
378150	4	2850	240
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr	
378154	8	2550	240	
378155	10	2450	240	
378156	<4	1850	240	
378157	6	1900	290	
378164	150	6600	150	
378165	150	5600	145	
378166	125	6150	145	
378167	145	5700	115	
378168	140	4600	85	
378169	125	6300	125	
378170	160	5400	100	
378171	22	3250	200	* STD.2
378172	140	5650	145	
378173	38	3600	120	
378174	24	4150	120	
378176	42	3700	120	
378177	18	3300	110	
378178	26	3250	125	
378179	90	3550	110	
378184	8	1850	230	
378185	8	1800	220	
378186	10	1950	270	
378187	8	2250	260	
378191	10	2300	240	
378192	26	3550	175	
UNITS	ppm	ppm	ppm	
SCHEME	AAS1B	COL4	XRF1	

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ANALYTICAL REPORT JOB COM860932

SAMPLE	Ni	Ti	Zr
378193	8	3300	280
378194	12	2800	240
378195	10	2550	250
378196	20	3000	195
378197	48	2550	130
378198	80	2850	150
378199	34	3650	90
378200	125	5050	100
378201	90	2200	105
378202	85	5250	110
378203	60	4400	100
378204	42	4800	140
378205	48	5200	130
378206	40	3950	135
378207	44	4300	110
378208	60	4450	110
378209	38	3750	125
378210	65	3800	110
378211	48	3600	110
378212	70	3800	110
UNITS	ppm	ppm	ppm
SCHEME	AAS1B	COL4	XRF1

* STD.2

: 860570

APPENDIX 19.

440 599440 (19)

Project Hatfield Contract Analyses For all 10 elements.

Ordinate	Sample No.	Depth	Colour
Marker	Dolerite	Contact	
[redacted]	[redacted]	4300N 320E	
4-5	383048		
6-7	49		
8-9	50		
9-10	51		
10-11	52		
11-12	53		
12-13	54		
13-14	55		

Ordinate	Sample No.	Depth	Colour

441 599441 (19)

COMLABS SERVICES PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex LABCOM AA89323

NATA REGISTERED No. 1526

HAT Charter Arlenis Boston
4300N, 3200E

OUR REF: COM860850

YOUR REF: 904

Mr. A. M. Hespe
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE

TAS 7320

June 16, 1986

Dear Sir

RE: JOB COM860850

Enclosed are the assays for the samples delivered to our laboratory on June 6, 1986

Yours Sincerely,
COMLABS PTY LTD

per : Jay Holbrook

Report Length 2 pages

599442

442

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ANALYTICAL REPORT

JOB COM860850
O/N : 904

SAMPLE	Cu	Pb	Zn	Ag	Ni	Cr	Ti
383048	42	140	240	<1	125	690	4550
383049	20	175	310	<1	150	590	5000
383050	30	115	280	<1	135	650	5550
383051	34	105	240	1	120	630	5850
383052	38	145	330	<1	145	680	4550
383053	40	250	300	1	120	600	4400
383054	26	180	320	<1	120	670	5200
383055	36	650	650	1	185	650	5000
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS1B	AAS1B	COL4

599443

443

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ANALYTICAL REPORT

JOB COM860850
O/N : 904

SAMPLE	As	Ba	Zr
383048	8	350	105
383049	10	910	115
383050	16	280	140
383051	5	280	120
383052	8	440	110
383053	5	510	85
383054	8	320	110
383055	8	1150	95
UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1

APPENDIX 20.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield EL 1513

PROSPECT: Mt Chapter Dolerite

445

C994-3

HOLE NO: XMC-D-01 / MC-14

PAGE: ONE of 13

LOGGED: AMH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
18			0-19.3	TRICONE NO RECOVERY								
20			Dolerite	Grey-green massive dolerite (sill). Low grade metamorphic mineralogy (chlorite/sericite/quartz carbonate) 0.5-1mm chlorite phenocrysts after ferromag.		Early stage of 5-10mm regular quartz (sericite) veins (unmineralised) cut by later 1-3mm wispy calcite veins. Calcite veins may also contain quartz.	Trace pyrite in calcite veins	Very broken, gravel zones (due to weathering out of calcite in veins	OX 4		No veining	
22												
24												
26												
28												
30								31.0				
32												
34									Patchy ox 3 - 0.4, considerable bit corrosion veins			
36												
38								•F? 38.2, 1.7 m (slight movement on sericitic veins)				
40						39.0 Wispy calcite veins 1-10mm						
42												
44												
46												
48												
50			HQ 51.0 NQ								Dolerite: P383601, 49.0, REP 19.2-54.0 Fine acicular chlorite pseudomorphs of ortho pyroxene, with interstitial lath-like plagioclase. Trace chromite, magnetite, apatite	
52											P227212, 54.2, REP 54.0-59.6 Dolerite. Fresh augite in plagioclase + orthopyroxene. 1/3 chill textures.	
54												
56				Decrease in sericitic veining after 55m to continue								
58												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HAMERSLEY EL 15/73

PROSPECT: MT CHARTER DOLERITE

446

599446

HOLE NO : XMC-D-01 / MC-14

PAGE : 2 of 13

LOGGED : AMH

DATE : JULY 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
60			DOLERITE	59.6		TYPE / WIDTH						
62			BLACK SHALE	V. SHARP CONTACT. 20-50mm CHILLED MARGIN ON DOLERITE. BLACK GRAPHITIC SHALE. PREDOM. MASSIVE WITH BLACK THIN SEMI-CRITIC BANDS AT 650 TO C.A.		FINE CALCITE VEIN (VARIABLE)						
64												
66												
68												
70												
72				GRADATIONAL CONTACT OVER 5mm								
74			ASH/FINE LAPILLI POLYMICT VOLCANICLASTIC	73.6 LIGHT GREY ASH (TUFF) TO FINE LAPILLI VLCL WITH ANGULAR FRAGMENTS OF BLACK SHALE. 2-3mm BANDS OF FINE CRYSTAL PRIMARY PYRITE. GRADING BECOMING MORE MASSIVE TOWARDS BASE								
76				76.2								
78			BLACK SHALE	MASSIVE BLACK GRAPHITIC SHALE	SHARP CONTACT AS BLACK SHALE FINING TO VLCL UNIT OVER 50mm							
80				80.1								
82			FINE/MEDIUM LAPILLI VLCL	81.5 SIM. TO 73.6-75.2. INCLUDES 100mm SHALE BAND. LOWER MEDIUM LAPILLI INCLUDES PYRITIC FRAGMENTS								
84			BLACK SHALE	MASSIVE BLACK GRAPHITIC SHALE								
86				AS ABOVE. INCLINATED 5mm PYRITIC SLUMP AT TOP OF UNIT								
88												
90												
92			FINE/MEDIUM LAPILLI VLCL	92.5								
94			BLACK SHALE	93.0 GRAPHITIC BLACK SHALE. PREDOMINANTLY MASSIVE WITH RARE PYRITE BANDS								
96												
98												
100												

REMARKS

[illegible] → SHARP [illegible] WELL DEFINED [illegible]

P382602, 65.6, REP 59.6-73.6; 75.2-80.1, 81.5-92.5

FREQUENT TO CARBONACEOUS SHALE. [illegible] MASSIVE FLAKES, SILTY LAMINATIONS, QUARTZ AND CARBONATE [illegible] TO FINE SILICEOUS - CARBONACEOUS MATRIX. [illegible]

P382604, 76.1, REP 73.6-75.2, 80.1-81.5

LITHIC CRYSTAL TUFF. LOWER FORM. OF FRACTURE, SOME OXIDATION, FELSITE TO GROUNDMASS OF LITHIC CLASTS, DEFORMED STRETCHED + INTERSTITIAL CLIMATE, CARBONATE, SILICEOUS. STRETCHING: IRREGULAR, ANGULAR, WELL SORTED, GEORGIO.

P382606, 92.8, REP 92.5-93.0

CARBONACEOUS SHALE. DEFORMATION STRETCHING [illegible] "FELSITIC" [illegible] SHALE & SOME QUARTZ + FELSIC MATERIAL [illegible] (CONTAMINATED WELDING?)

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

MC-14

PROJECT : HATFIELD ELISH

PROSPECT: MT CHARTER ROUBAIX

447

599447

HOLE NO: XMC-D-014

PAGE: 3 of 13

LOGGED: July 1986

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
102			Black Shale			" Z		SOME VEINS BROKEN.				
104				104.3 20cm BAND OF PYRITIC SHALE. 40° TO C.A.								
106						106.0 VEIN BECOMES MORE REGULAR (CLIMAX) MIN: = CALC/MINOR QTZ TRACE STH + PY. Some LATTICE VEINS AND TENSION SETS INTACT. Z	106.0 TRACE OF BROWN SPHAL. VERY FINE PYRRHOTITE + PYRITE IN CALCITE/QUARTZ VEINS.				
108												
110												
112												
114												
116												
118								119.0				
120												
122												
124											P383604 : 125.0 ; REP 93.0 - 148.9 INDURATED CARBONACEOUS SHALE. MUSCOVITE FLAKES AND QUARTZ GRAINS IN CARBONACEOUS MATRIX. VEINS SIMILAR TO 383603	
126												
128												
130												
132												
134				134.9 10cm PYRITE BAND. 50° TO C.A.								
136												
138												
140												
142												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

MC-14

PROJECT : HATFIELD EL 15/73

PROSPECT: MT CHARTER DOLERITE

418

599448

HOLE NO : XMC-D-314

PAGE: 4 of 13

LOGGED: AMA

DATE: July 1976

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
144			BLACK SHALE									
146												
148				148.9	148.9	148.9	148.9					
150			PETRIFIED ANDESITE	CHAOTIC MIX OF BLACK SHALE AND ANDESITE LAVA FRAGMENTS.	PATCHY LIGHT GREY SILICIFICATIONS. ENHANCED BRECCIA TEXTURE WHERE IS OCCURS.	MAJOR QUARTZ CALCITE. PINK TO WHITE SILICA	10-15% CARBONATE (?) VEINS					
152				WEAKLY FELDSPAR PHYRIC	NOTE: CALCITE OCCURRING AS CORROSIVE ALTERATION MINERAL IN THE LAVAS NOT AS THE GREY SILICA BUT IS LATER UNDERFILL "VEINING"	MINOR STRINGERS OF BRAUN TO YELLOW GREEN ILLITE PYRITE	3					
154												
156				156.5								
158			ANDESITE LAVA	DARK GREEN TO GREY GREEN ANGULAR ANDESITE (PHENOCRYST, POORLY VESICULAR, IN CORROSIVE MATRIX OF LIGHT GREY TO KHAKI SILICA AND WHITE CALCITE. FRAGMENTS PROBABLY UNMETAMORPHOSED - LOW GRADE MESOMORPHIC MINERALOGY. INCLUDED SEVERAL MORE MASSIVE SECTIONS OF LAVA					F • K/O, ZOOM, CARBONATE BOULD.		
160												
162							163.5					
164						3						
166												
168												
170					169.1 LIGHT GREY TO KHAKI SILICA + BROWN ILLITE	3						
172					173.2 PATCHY LIGHT GREY SILICA (AS ABOVE)	3					P 983607: 173.0 - RIG 163.5 - 183.0 VOLCANIC BRECCIA — LAVA ANGULAR FRAGMENTS OF QUARTZ ANDESITE AND ANDESITE SUBROUNDED IN DOMINANTLY - PYROCLASTIC	
174												
176												
178												
180						2	180.9					
182												
184												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599449

MC-14

PROJECT : HATFIELD EL15/73

PROSPECT: MT CHARTER DOLERITE

HOLE NO: XMC-D014

PAGE: 5 of 13

LOGGED: BMH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
186			ANDESITE LAVA				186.0	3						
188							MAJOR WHITE CALCITE WHITE SILICA MINOR - TRACE GREENISH BROWN SPHALERITE PYRITE, GALENA, CHALCOPYRITE	3						
190						3								
192							M. BRYOZOA TILL PORCITE VESICLE INFILL AND IRREGULAR 5-10mm VEINS							
194														
196														
198														
200					200.7									
202						4								
204								3						
206														
208														
210														
212														
214														
216														
218									218.5					
220														
222						4		3						
224														
226														

CHANGE IN MINERALOGY OF VEINS (NO ILLITE OR FINE SILICA), NOT STYLE.

PEX. 38368, 203.1, REP 16.5-267.0

ALTERED ANDESITE BRECCIA

NO EVIDENCE OF PRIMARY FELDSPAR'S QUARTZ/ILLITE (QUARTZ) PHENOCRYSTS ARE INCLUDED SILICA, FLUORITE, CO., CHL.,

450

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599450

MC-14

PROJECT : HATFIELD EL15/73

PROSPECT: MT CHARTER DOLERITE

HOLE NO: XMC-D-04

PAGE: 6 of 13

LOGGED: AMH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
228			ANDESITE LAVA		" 4			227.0 BROKEN CORE / HIGH FRACTURING 231.6				
230					230.0	3						
232					" 3							
234						234.1						
236												
238												
240												
242					" 3	" 4						
244												
246						245.1						
248					" 3	" 3						
250												
252						251.1						
254												
256					" 3	" 4						
258						257.3						
260												
262						" 3						
264												
266					" 2			265.1 ? Fracture Structural Zone				
268												

MC-14

PROJECT : HATFIELD EL15/73 451

PROSPECT: MT CHARTER DOLERITE

ABERFOYLE EXPLORATION
DIAMOND DRILL LOG

599451

HOLE NO: XMC-D-84

PAGE: 7 of 13

LOGGED: AMH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
270			269.0		269.0									
			BASALT LAVA	GREY-GREEN MASSIVE VESICULAR BASALT LAVA. SEVERAL LAVA BRECCIA INTERVALS HAVE CHLT + SILICA MAT. OF MATRIX. LARGER VESICLES HAVE SILICA + CALCITE INFILL. SMALLER VESICLES ARE CHLORITE FILLED.	AS ABOVE BUT PATCHY GREEN MICA INDICATE SERICITE/CARBONATE ALT.	3			≤1% py in SILICA VEINLETS (BRECCIA MATRIX)				
272							7		271.3					
									271.6					
274														
276														
278														
280														
282														
284							3							
286													REF. 38369: 284.3. REF. 269.0 - 292.8	
288													ANTECRYSTALLIC PORPHYRITIC TEXTURE. PLAGIOCLASE + AUGITE PHENOCRYSTS IN GROUNDMASS OF LATH. ACC. MAGNETITE. PERVASIVE SAUSSURITIZATION - NOT SILICIFIED.	
290														
292			292.8		292.8									
294			BASALT LAVA BRECCIA.	AS FOR PREVIOUS LAVA BRECCIA. FEWER, SMALLER VESICLES THAN IN MASSIVE LAVA ABOVE.	GREY SILICA ALT. OF BRECCIA & MATRIX (AND CLASTS) AS ABOVE PLUS PATCHY YELLOW-GREY TO PALE GREEN SERICITE (+ CARBONATE) ALT. OF FRAGMENTS. LATER ALTERATION PRE-DATES VEIN AT 324.7 - 330.0								
296														
298														
300							3							
302							330.0							
304														
306														
308														
310														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD EL 15/73

PROSPECT: MT CHARTER DOLOMITE

452

599452

MC-14

HOLE NO: XMC-D-014

PAGE: 8 of 13

LOGGED: AMH

DATE: June 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
312			Basalt Lava Breccia		"	3	"	4						
314														
316					316.0 Patchy grey-green silica alteration & pervasive	3							Ref 383610; 316.9, 869. MS on fours. Basalt Lava Breccia. Strong to moderate patchy silicification of matrix. Minor siliceous veining and fracturing.	
318														
320														
322							324.0							
324							"	3		F @ 326.0 (30cm) sericitic rubble				
326														
328										F @ 328.00 (30cm) sericitic rubble + fine				
330														
332														
334														
336					"	3	"	3						
338														
340														
342														
344														
346														
348					348.9 Pervasive sericitic alteration patchy & adj. to quartz veins.	3	"	3						
350					351.6 Silica adj. to quartz veins	2								
352										F @ 351.60m, 280cm sericitic + chloritic fault zone rubble			~ 25° to C.A.?	

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

453

599453

PROJECT : HATFIELD EL 1573

PROSPECT: MT CHARTER TOLEIITE

HOLE NO: MC-14 XMC-D-014

PAGE: 9 of 13

LOGGED: AMM

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
354			Basalt Lava Breccia		"	3	"	3						
356					"	3								
358														
360					360.0									
362					"	4								
364														
366							"	3						
368										F 368-6cm 10cm SERICITIC/CARBONATE RUBBLE + PYR.				
370									373.0 TR DISP CPY + CPY IN 374.0 SILICA/CARBONATE VEINS					
372														
374														
376														
378					"	4	"	3		F 378.7m 2cm SERICITIC RUBBLE + PYR				
380										F 381.6m 3cm SERICITIC RUBBLE + PYR				
382														
384														
386														
388														
390														
392							"	3						
394					"	4								

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

454

599454

PROJECT : HASTIEMO EL 15/73

PROSPECT: MT CHARTER TOLBRITE

HOLE NO: MC-M XMC-D-014

PAGE: 10 of 13

LOGGED: AMM

DATE: July 1914

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
396			Basalt Lava Breccia				"	3	396.0 TRACE ZBlow SPH + PY in QTZ in silica/calcite veins 396.0					
398					"	4								
400				401.6 Primary grey-black chert/shale breccia matrix.										
402					402.8 Patchy sericitic alt. allowed preferentially. 403.8	2								
404					Silica alt. is previously	3	"	3		403.8, 20°/cm, 25° TOC A. sericitic zone				
406				411.7										
408														
410														
412														
414														
416														
418														
420														
422														
424														
426														
428							"	3					Sec 333/411: 334: Rep 329 - 463.8 Altered basalt breccia: Plagioclase + carbonate pseudomorphed phenocrysts. Phenocrysts.	
430														
432														
434														
436														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

455

599455

PROJECT : HATFIELD EL 15/73

PROSPECT: EAST CHRISTIES PROSPECT

HOLE NO: XHC-D-014

PAGE: 11 of 17

LOGGED: [illegible]

DATE: June 1981

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
438			Basalt Lava Breccia				"	3						
440					452.0									
442				442.6 MIXED MASSIVE AND BRECCIATED LAVA TO CONTACT AT 466.8	"	4				F 442.6, 3mm, SERICITIC CARBONATE RICHOLS & FOL.				
444														
446							"	3						
448														
450														
452														
454					"	4								
456														
458														
460														
462				CONTACT IS SILICIFIED AND PALE GREENISH OVER 2.0cm PROBABLY CONTEMPORANEOUS										
464														
			466.8 Feldspar-phyric Andesite Lava Breccia	466.8 PHENOCRYSTS: GREEN - BLACK (CHLORITE?), VERY ABUNDANT; 0.5 - 6mm, AV 1-2mm; SHAPES TO CHLORITIC OUTLINES; SILICIFIED FELDSPAR PHENOCRYSTS; MATRIX: CORROSIVE GREY - KHAKI SILICA IN MATRIX AND "DISSOLVING" CLASTS	466.8 STRONG GREY - KHAKI SILICA PERV. IN QUARTZ LYING RAPID. DILUTED ANDESITE FRAGMENTS.	"	4	466.8 DECLINE IN VEINING INTENSITY BELOW CONTACT VEINS PREDOMINANTLY < 1mm	"	2					
466														
468														
470														
472														
474							"	2						
476														
478					"	4							465.8 - 482.1 494.1 - 513.0 PER. 388½; 473.4, PER. 528.7 - 529.7 BASALT OR ANDESITE BRECCIA SOME PLAG PHENOCRYSTS, IN GROUNDMASS OF FELDSPAR, CARBONATE AFTER PYROXENE. CHLORITIZED GLASS.	

456

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599456

PROJECT : BARFIELD EL 15/73

PROSPECT: MT CHAUVEL DOLERITE

MC-14

HOLE NO : XMC-D-04

PAGE: 12 of 13

LOGGED: AmH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
480			Felsophyric Andesite Lava Breccia.		"	4	"	2					NOTE: GM-TBX SPHALERITE & PYRITE VEIN/VESICLE SPHALERITE NEARLY ALWAYS FEO-2.5mm.	
482.1				FAULT ON CONTACT										
			Basalt Lava.	TYPICAL MASSIVE GM-GREEN VESICULAR BASALT LAVA. PROBABLY SILICIFIED	PERVASIVE SILICIFICATION?	3			TRACE OF GREY-BLACK SPHALERITE IN CARBONATE VEINS AND IN VESICLES	▼ 482.0, 240mm SERICITIC SILICIFIED SIDERITE RUBBLE, VERY MINOR Pb - NOT A MAJOR ZONE				
485.3														
				GRADATIONAL LOWER CONTACT OVER 10cm										
494.3			Felsophyric Andesite Lava.	As FOR PREVIOUS ANDESITE (466.8 - 482.1)	VERY STRONG SOMEWHAT PATCHY SILICIFICATION SILICA NOT AS IN PREVIOUS ANDESITE	2			5-10cm ZONE OF REW 3mm SPHALERITE; << CHALCOPYRITE ASSOCIATED WITH SILICIFIED CARBONATE VEINING. (<< 1% EPM.)						
							"	1						
510.0				MIXTURE OF ANDESITE + BASALT LAVAS OVER 2m AT CONTACT					510.0	▼ GOZ 8, 60mm 10° TO C.A. RUBBLE + CALCITE				
			Basalt Lava	GREY TO GREY-GREEN WEAKLY VESICULAR BASALT LAVA. MASSIVE. FRESH (non FELSOPHYRIC PERIDOTITE?	PERVASIVE SILICIFICATION?	4								
512.0														
					"	3	"	2						

NOTE: 482.1 - 494.3 VES 3 87(3), 489.2, 259, 510.0 - 528.7

AMYGDALOIDAL ANDESITE

Dark colour. Phenocrysts in fine groundmass of plagioclase, clinopyroxene ?? Minerals. Pitting ?? Weathering ??

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

457

599457

PROJECT : HATFIELD ELIS/73

PROSPECT: MT CHARTERIS DOLERITE

HOLE NO: MC-N XMC-D-004

PAGE: 13 of 13

LOGGED: AMH

DATE: July 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
522			BRIANS LOAM		523.5 INTENSELY SILICIFIED + 1-2% PYRITE APPROXIMATELY FAULT	II 2						
524												
526												
528				COUNTER IN FAULT								
			528.7									
530				529.7 EOH.				529.1, 410/— 10° TO C.A. SERICITE-CHLORITE RUBBLE AND PUG - IMPORTANT FAULT				
			FELDSPAR PORPHYRITIC ANDESITE LOAM BRECCIA IN ARGILLIC									

SAMPLE NO: 383601
LOCATION: MC-14/49.00
REPRESENTATIVE OF: 19.3-54.0
REMARKS: Dolerite sill, possibly comagmatic with basalts lower in section.

SAMPLE NO: 383602
LOCATION: MC-14/56.2
REPRESENTATIVE OF: 54.0-59.6
REMARKS: Possibly chilled margin of dolerite sill - finer grained.

SAMPLE NO: 383603
LOCATION: MC-14/65.6
REPRESENTATIVE OF: 59.6-73.6, 75.2-80.1, 85.1-92.5
REMARKS: Graphitic black shale. Possibly contact metamorphosed by overlying dolerite.

SAMPLE NO: 383604
LOCATION: MC-14/75.1
REPRESENTATIVE OF: 73.6-75.2, 80.1-85.1
REMARKS: Polymict rock with fragments of shale and pyrite. Well sorted sections show graded bedding.

SAMPLE NO: 383605
LOCATION: MC-14/92.8
REPRESENTATIVE OF: 92.5-93.0
REMARKS: Polymict rock, similar to 383604 but coarser grained.

SAMPLE NO: 383606
LOCATION: MC-14/125.0
REPRESENTATIVE OF: 93.0-148.9
REMARKS: Black shale, not graphitic. Compare with 383603 to confirm contact metamorphic effects.

SAMPLE NO: 383607
LOCATION: MC-14/173.0
REPRESENTATIVE OF: 163.5-180.0
REMARKS: Silicified basalt. Is pale brown mineral, associated with red-brown sphalerite, siderite?

SAMPLE NO: 383608
LOCATION: MC-14/203.1
REPRESENTATIVE OF: 156.5-269.0
REMARKS: Basalt showing pale grey-brown "silicification" which is a feature of this hole. The silicification is most obvious in the matrix of lava breccias.

SAMPLE NO: 383609
LOCATION: MC-14/286.3
REPRESENTATIVE OF: 269.0-292.8
REMARKS: Massive vesicular basalt within basalt breccia zone. Is this rock silicified?

SAMPLE NO: 383610
LOCATION: MC-14/316.9
REPRESENTATIVE OF: Patches of pale green alteration in basalt around fault at 320-330 m
REMARKS: Basalt breccia with interpillow type chert. What type of alteration produces pale green colour in this sample?

SAMPLE NO: 383611
LOCATION: MC-14/431.4
REPRESENTATIVE OF: 320-465.8
REMARKS: Basalt lava breccia with a primary chert matrix. Clasts and matrix overprinted by silica alteration.

SAMPLE NO: 383612
LOCATION: MC-14/473.4
REPRESENTATIVE OF: 465.8-482.1, 494.3-510.0, 528.7-529.7
REMARKS: Andesite lava breccia with conspicuous feldspar phenocrysts. Strongly silicified.

SAMPLE NO: 383613
LOCATION: MC-14/489.8
REPRESENTATIVE OF: 482.1-494.3, 510.0-528.7
REMARKS: Massive vesicular basalt. Light grey brown colour indicates silicification.

599460

460

Central Mineralogical Services

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2nd September, 1986

REPORT CMS 86/8/7

YOUR REFERENCE:	Letter dated 12.8.1986
DATE RECEIVED:	13th August, 1986
SAMPLE NOS.:	383601 - 383613
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
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599461

461

REPORT CMS 86/8/7

Mt. Charter DDH MC-14 Core Samples

Thirteen drill core samples (383601 - 383613) were received for petrographic study; thin-sections were prepared and are described in the attached table; stain tests for K-feldspar or carbonate were carried out as necessary on the offcuts.

Summary

Two of the rocks are fine carbonaceous sediments, the others are all igneous and include intrusive, extrusive and pyroclastic types.

Classification of the rocks is based on existing (and relict) textures/ structures, on preserved primary minerals, on interpretation of alteration assemblages, and preserved primary features, i.e. the same criteria outlined in David Cowan's report (CMS 86/7/24).

In the two carbonaceous shales, there are lithological differences unrelated to metamorphism; both are indurated and have conspicuous fine slaty cleavage or schistosity at a moderate angle to bedding, accentuated by the development of thin carbonaceous (?graphitic) streaks. There is no detectable effect of the dolerite on the upper shale unit; both rocks are incompetent, and carbonaceous matter is quite mobile (and very easily converted to subgraphite or graphite).

The composition of 383602 is distinctly different from that of 383601, and this is not explained by the effects of chilling; thus, the sill is either a multiple intrusion, or is differentiated, and needs further examination.

Some of the volcanic breccias (e.g. 383607, 383608) are difficult rocks, because of alteration; for instance, 383607 appears to be a polymict rock, in which fragments of different colours signify different rock types; 383608, however, appears to be a single rock type in which some fragments suffered a different type of alteration which affected their colour and so gave the appearance of different lithologies. In 383607, the pale brown patches are simply finely disseminated sphalerite in silicates, i.e. the sphalerite acts as a pigment.

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
383601 (T.S. 56400)	Chloritised Meta-Dolerite. Stubby prismatic fresh augite crystals, pale chlorite pseudomorphs after orthopyroxene; interstitial labradorite laths, a few quartz patches (?primary).	Medium-grained, random, typical doleritic fabric. Good relict pyroxene textures.	Fine cloudy sphene, some with magnetite cores. Trace ?chromite. Apatite needles. Zeolite veinlets.	Fabric suggests a minor intrusive. Feldspar percentage very low, and rock tends towards an ultramafic, e.g. plagioclase-websterite.
383602	Dolerite. Euhedral crystals, clusters and some phenocrysts, of fresh augite; random laths of fresh labradorite; interstitial carbonate, chlorite. A few amygdales.	Slightly finer-grained than 383601, but still in dolerite range. No chill features as such.	Carbonate-chalcedony in amygdales. Minor fine-grained sphene. Rare chrome-spinel.	Much more feldspathic, with less chloritised orthopyroxene than 383601; also weakly amygdaloidal. Could be a multiple intrusion.
383603	Indurated Carbonaceous Shale. Subparallel sericite-muscovite flakes, silt-sized angular quartz and carbonate grains, ultrafine siliceous, carbonaceous matrix; carbonaceous streaks.	Finely laminated, with slightly coarser layers. Weak, crenulated schistosity at 40° to bedding.	Stringers of small pyrite crystals. Cross-cutting carbonate veinlets. Poorly defined ?fossils.	Rock is well-indurated, but not noticeably metamorphosed. Micaceous character obscured by abundant carbonaceous matter.
383604	Lithic-Crystal Tuff. Scattered larger fragments of trachyte, devitrified obsidian, felsite, in a mass of smaller, lithic grains, quartz and feldspar splinters, interstitial quartz, carbonate, sericite.	Fragments are irregular, angular, generally well-sorted. Bedding accentuated by stylolitic veins.	A few mudstone/shale fragments - still plastic when deposited. Carbonate veinlets.	Diagenetic alteration has obscured some details, but regarded as subaqueous tuff rather than volcanomict sandstone. A few pyrite-quartz fragments - ?vein material.
383605	Coarse Lithic Tuff. Deformed, contorted, and stretched fragments of dark trachyte, felsite, obsidian, dark glass; a few crystal fragments of argillised feldspar, quartz; altered ash matrix.	Shapes of larger fragments, and streaky nature of matrix, suggest welding.	Later pryite clusters occur interstitially, and also preferentially in some fragments.	All the textural features support an ignimbritic origin, but alteration makes interpretation tentative.
383606	Indurated Carbonaceous Shale. Faint, thin laminations of slightly coarser quartz grains and muscovite flakes; dominantly ultrafine carbonaceous clay with thin carbon streaks.	Definite fine, closely-spaced schistosity at 50° to bedding, defined by carbon streaks.	Ultrafine pyrite throughout, also coarser crystals.	Almost identical with 383603, but clastic micas generally much finer. Not known whether carbon is graphite in either rock.
383607	Volcanic Breccia. Large angular fragments of porphyritic quartz-andesite (quartz, plagioclase phenocrysts, fine andesine, chloritised glass) and trachyte. Conspicuous sphalerite.	Andesites are flow-lineated; trachytes have typical felted fabric. Fragments are in close contact.	Sphalerite as compact and disseminated masses (brown) with quartz, albite. Calcite veins, patches.	Too coarse to be properly interpreted in T.S. Definitely fragmental, with different rock types - either an agglomerate or a welded coarse pyroclastic.
383608	Altered Andesite-Breccia. Occasional quartz and oligoclase phenocrysts in a mass of oligoclase laths; some areas are chloritised (glass matrix), others are silicified, albitised, carbonated.	Fabric is the same in all fragments, and may continue across fractures.	Patches of coarse albite-adularia with chlorite. Quartz-albite-sphalerite patches.	Classified as andesite because no evidence of primary ferromagnesians, and crystalline phase is dominantly plagioclase. Colour differences misleading.

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Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
383609	Amygdaloidal, Porphyritic Basalt. Scattered phenocrysts of saussuritised plagioclase, fresh augite, in fine groundmass of the same minerals; irregular amygdales with chalcedony, carbonate.	Random fabric, with felted textures; reaction rims around inclusions.	Quartz xenocrysts with pyroxene reaction rims. Accessory magnetite. Fine pyrite throughout.	Pervasively altered, with saussuritisation of plagioclase, but not particularly silicified except for chalcedony (+ amorphous SiO_2) in amygdales.
383610	Basalt Lava-Breccia. Small phenocrysts of augite, silicified plagioclase, in groundmass of the same minerals; angular fragments of lavas with similar composition, different fabrics.	Good flow-lineation of host lava and of xenoliths. Some amygdales. Reaction rims. Some fracturing.	Quartz xenocrysts with pyroxene reaction rims. Quartz-prehnite in amygdales. Carbonate veins. Fine pyrite.	Fine, pale chlorite is responsible for colour. Rock is similar to 383609, but with xenoliths ("cognate"), with noticeably different fabric, generally more glassy.
383611	Altered Basalt Breccia. Small plagioclase laths, carbonate pseudomorphs after pyroxene; occasional altered phenocrysts; amygdales. Bleached, chilled margins against chert infilling.	Flow-lineated; blocky fracturing. Evidence of plastic deformation. Some chert is vein-like.	Carbonate and quartz veins. Pyrite crystals in chert and basalt. Quartz xenocrysts.	Colour of altered rock much lighter due to carbonate and fine groundmass silicification. Possibly subaqueous brecciation (during ?flow), simultaneous chert deposition.
383612	Altered ?Basalt Breccia. Saussuritised plagioclase phenocrysts in groundmass of altered feldspar laths, carbonate pyroxene; interstitial, chloritised glass. A few irregular amygdales.	Very good flow-lineation in places. Fine devitrification textures. Blocky fracturing, rotation.	Quartz-carbonate-chlorite veins. Areas of fine silicification. Fine epidote patches. ?Chalcopyrite in veins.	Composition may have been andesitic rather than basaltic, but too altered. Brecciation appears tectonic. Rock contained much glass.
383613 (T.S. 56412)	Amygdaloidal Andesite. Small oligoclase phenocrysts in a partly silicified groundmass of matted plagioclase laths, stubby chloritised ?pyroxene; scattered amygdales with quartz, adularia.	Uniform, fine matted fabric; very local flow features only, around phenocrysts.	Amygdales contain sphalerite, pyrite, chlorite, epidote, carbonate. Pyrite throughout rock.	Since phenocrysts are oligoclase, and ferromagnesians are not abundant, rock is classified as andesite; silicification (and fine zoisite) has lightened the colour.

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ANALYTICAL REPORT No. 23.3.08.03823

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
0962	

DATE RECEIVED	RESULTS REQUIRED
19/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	26/08/86	1	13

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	383601/383613	SC	Prep: 009,013,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	383601/383613	PU							Ba,Cr,Zr,Ti/401		
	383601/383613	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-14
½ Petrology Samples - for assay.

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
	23.3.08.03823	26/08/86	0962	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Au	Ba	Cr
1	383601	15	<5	45	<0.5	155	1	<0.008	560	640
2	383602	5	<5	50	<0.5	160	1	<0.008	340	590
3	383603	40	70	215	<0.5	85	32	<0.008	820	100
4	383604	20	40	185	0.5	40	17	<0.008	940	60
5	383605	35	10	360	0.5	35	26	<0.008	1250	95
6	383606	60	35	60	0.5	70	13	<0.008	500	100
7	383607	15	190	15500	0.5	65	5	<0.008	1600	75
8	383608	65	240	5300	0.5	60	1	<0.008	3200	75
9	383609	50	125	310	<0.5	125	3	<0.008	920	300
10	383610	40	15	40	<0.5	125	2	<0.008	450	360
11	383611	90	40	345	<0.5	65	6	<0.008	670	130
12	383612	30	50	170	<0.5	55	7	<0.008	2300	80
13	383613	70	970	1250	1.0	75	8	<0.008	1300	120
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	0.008	10	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	114	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

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03823	26/08/86	0962	2 OF 2

TUBE No.	SAMPLE No.	Zr	Ti	Zr/Ti						
1	383601	85	2250	.038						
2	383602	80	2350	.034						
3	383603	160	2450	.065						
4	383604	270	2150	.126						
5	383605	320	2650	.121						
6	383606	120	2500	.048						
7	383607	250	3450	.072						
8	383608	240	3050	.079						
9	383609	80	1850	.043						
10	383610	60	1450	.041						
11	383611	120	1650	.073						
12	383612	170	2150	.079						
13	383613	140	1800	.078						
14										
15										
16										
17										
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

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APPENDIX 21.

468

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PAGE ONE OF

CORE GRIND SAMPLING - ~~MACKINTOSH~~ / HATFIELD

HOLE No. MC-14

DATE 19/8/86

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	392001	19·3 - 29·3	Cu Pb Zn Ag As Sb Ba Cr Ni Ti Zr		33	322·8 - 332·8	"	
2	02	29·3 - 39·3	"		34	332·8 - 342·8	"	
3	03	39·3 - 49·3	"		35	342·8 - 352·8	"	
4	04	49·3 - 59·6	"		36	352·8 - 362·8	"	
5	05	59·6 - 73·6	"		37	362·8 - 372·8	"	
6	06	73·6 - 75·2	"	SPLIT CORE	38	372·8 - 382·8	"	
7	07	75·2 - 80·1	"		39	382·8 - 392·8	"	
8	08	80·1 - 81·5	"	SPLIT CORE	392040	392·8 - 402·8	"	
9	09	81·5 - 92·5	"		41	402·8 - 412·8	"	
10	392010	92·5 - 98·0	"	SPLIT CORE	42	412·8 - 422·8	"	
11	11	98·0 - 110·0	"		43	422·8 - 432·8	"	
12	12	110·0 - 130·0	"		44	432·8 - 442·8	"	
13	13	130·0 - 148·9	"		45	442·8 - 452·8	"	
14	14	148·9 - 156·5	"		46	452·8 - 465·8	"	
15	15	156·5 - 163·5	"		47	465·8 - 482·1	"	
16	16	163·5 - 173·5	"		48	482·1 - 494·3	"	
17	17	173·5 - 183·5	"		49	494·3 - 510·0	"	
18	18	183·5 - 193·5	"		392050	510·0 - 520·0	"	
19	19	193·5 - 203·5	"		51	520·0 - 528·7	"	
20	392020	203·5 - 213·5	"		52	528·7 - 529·7	"	SPLIT CORE
21	21	213·5 - 223·5	"					
22	22	"	"	ST				
23	23	223·5 - 233·5	"					
24	24	233·5 - 243·5	"					
25	25	243·5 - 253·5	"					
26	26	253·5 - 263·5	"					
27	27	263·5 - 269·0	"					
28	28	269·0 - 279·0	"					
29	29	279·0 - 292·8	"					
30	392030	292·8 - 302·8	"					
31	31	302·8 - 312·8	"					
32	32	312·8 - 322·8	"					

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ANALYTICAL REPORT No. 23.3.08.03959

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
1433	

DATE RECEIVED	RESULTS REQUIRED
31/10/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	03/12/86	1	52

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
	392001/52	CG Prep: 007,017,013,018							Cu,Pb,Zn,Ag,Ni/101,As/114		
	392001/52	CG							Ba,Cr,Zr,Ti/401		
	392001/52	CG							Au/309		
	392001/52	CG Prep: 007,017,013,018							CuChk/101		
	392001/52	CG							TiChk/401		

RESULTS TO

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

RESULTS TO

REMARKS

MC-14
bore Grids.

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
	23.3.08.03959	03/12/86	1433	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392001 19·3-29·3	50	10	120	<0.5	125	1	400	640	80
2	392002 29·3-39·2	35	<5	95	<0.5	135	4	340	700	75
3	392003 39·3-49·3	45	20	140	<0.5	150	3	460	680	70
4	392004 49·3-596	50	<5	110	<0.5	160	2	400	650	70
5	392005 596-73·6	50	50	320	<0.5	65	18	660	85	120
6	392006 SPLIT CORE 73·6-75·2	35	55	450	<0.5	20	26	1100	35	240
7	392007 75·2-80·1	85	45	100	<0.5	60	29	410	75	120
8	392008 SPLIT CORE 80·1-81·5	60	5	325	<0.5	25	2	1250	<5	220
9	392009 81·5-92·5	60	170	1300	<0.5	65	18	880	95	130
10	392010 SPLIT CORE 92·5-93·0	55	20	200	<0.5	30	100	1550	25	280
11	392011 93·0-110·0	65	30	120	<0.5	70	20	690	100	120
12	392012 110·0-130·0	90	110	1550	<0.5	65	21	540	100	120
13	392013 130·0-148·9	80	75	295	<0.5	85	29	690	100	130
14	392014 148·9-156·5	75	1650	4100	<0.5	55	35	690	50	210
15	392015 156·5-163·5	100	1250	3450	0.5	55	29	560	60	220
16	392016 163·5-173·5	100	50	9350	<0.5	60	16	1400	55	240
	392017 173·5-183·5	135	720	9050	<0.5	65	8	2350	40	240
18	392018 183·5-193·5	150	260	6500	<0.5	60	6	2700	45	260
19	392019 193·5-203·5	160	135	4250	<0.5	60	4	1950	40	220
20	392020 203·5-213·5	55	410	6450	<0.5	50	6	3400	35	250
21	392021 213·5-223·5	160	175	4850	<0.5	50	4	1800	35	240
22	392022 * STD	2 115	205	2100	<0.5	270	20	1100	860	85
23	392023 223·5-233·5	110	210	2100	<0.5	55	10	1700	35	250
24	392024 233·5-243·5	100	260	3650	<0.5	55	7	1150	40	240
25	392025 243·5-253·5	60	30	690	<0.5	55	9	380	35	240

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
	23.3.08.03959	03/12/86	1433	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392026 253.5-263.5	35	45	290	<0.5	100	22	280	210	170
2	392027 263.5-269.0	55	675	1950	<0.5	145	22	1650	420	75
3	392028 269.0-279.0	50	275	890	<0.5	125	8	1200	340	85
4	392029 279.0-292.8	55	390	1150	<0.5	130	3	1050	340	85
5	392030 292.8-302.8	65	130	415	<0.5	150	5	790	400	75
6	392031 302.8-312.8	60	65	350	<0.5	150	4	520	400	75
7	392032 312.8-322.8	95	15	95	<0.5	155	4	760	410	80
8	392033 322.8-332.8	80	150	480	<0.5	95	20	1300	220	140
9	392034 332.8-342.8	60	50	270	<0.5	55	17	1550	130	170
10	392035 342.8-352.8	55	185	1100	<0.5	55	23	1050	140	170
11	392036 352.8-362.8	75	60	310	<0.5	60	24	1750	130	160
12	392037 362.8-372.8	60	220	275	<0.5	60	22	1050	130	170
13	392038 372.8-382.8	110	255	1800	<0.5	55	22	1500	120	160
14	392039 382.8-392.8	45	135	520	<0.5	60	38	1150	130	170
15	392040 392.8-402.8	50	190	585	<0.5	60	20	1050	130	180
16	392041 402.8-417.8	55	125	275	1.0	65	23	1750	140	170
17	392042 417.8-422.8	55	15	115	0.5	55	13	870	120	140
18	392043 422.8-432.8	40	25	150	<0.5	60	13	510	150	180
19	392044 432.8-442.8	70	20	90	0.5	55	15	1250	120	160
20	392045 442.8-452.8	75	30	115	<0.5	60	15	1450	120	160
21	392046 452.8-465.8	90	25	80	<0.5	45	21	1200	45	170
22	392047 465.8-482.1	65	125	415	0.5	45	10	1700	40	160
23	392048 482.1-494.3	95	600	1250	0.5	45	13	1100	25	140
24	392049 494.3-510.0	60	215	810	0.5	45	11	1350	30	160
25	392050 510.0-520.0	80	385	460	<0.5	40	8	780	45	150

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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599472

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03959	05/12/86	1433	3 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392051 520.0-528.7	85	25	205	<0.5	50	10	350	60	160
2	392052 528.7-529.7 SRT Size	280	15	415	0.5	70	5	180	70	180
3										
4										
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	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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

473

ANALABS

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

599473

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03959	03/12/86	1433	4 OF 6

TUBE No.	SAMPLE No.	Ti	Au							
1	392001	2650	<0.008							
2	392002	2400	<0.008							
3	392003	2150	<0.008							
4	392004	2350	0.006							
5	392005	2250	<0.008							
6	392006	2450	<0.008							
7	392007	2150	<0.008							
8	392008	1650	<0.008							
9	392009	2500	<0.008							
10	392010	2150	<0.008							
11	392011	2650	0.017							
12	392012	2650	<0.008							
13	392013	2750	<0.008							
14	392014	3250	<0.008							
15	392015	3500	0.006							
16	392016	3700	<0.008							
17	392017	3350	<0.008							
18	392018	3650	<0.008							
19	392019	3550	<0.008							
20	392020	3550	<0.008							
21	392021	3600	<0.008							
22	392022 *STD	2 2350	0.017							
23	392023	3750	<0.008							
24	392024	3550	<0.008							
25	392025	3600	<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

ANALABS

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

599474

474

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03939	03/12/86	1435	5 OF 6

TUBE No.	SAMPLE No.	Ti	Au							
1	392026	3350	<0.008							
2	392027	2050	0.017							
3	392028	1900	<0.008							
4	392029	2000	<0.008							
5	392030	1800	<0.008							
6	392031	1850	<0.008							
7	392032	1800	<0.008							
8	392033	2350	<0.008							
9	392034	2450	<0.008							
10	392035	2700	<0.008							
11	392036	2450	<0.008							
12	392037	2650	<0.008							
13	392038	2600	<0.008							
14	392039	2700	<0.008							
15	392040	2900	0.008							
16	392041	2950	<0.008							
17	392042	2500	0.008							
18	392043	3000	<0.008							
19	392044	2350	<0.008							
20	392045	2450	<0.008							
21	392046	2300	<0.008							
22	392047	2450	<0.008							
23	392048	2050	<0.008							
24	392049	2500	<0.008							
25	392050	2150	0.017							

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

475

ANALABS

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

599475

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	25.3.08.03959	05/12/86	1433	6 OF 6

TUBE No.	SAMPLE No.	Ti	Au							
1	392051	2550	<0.008							
2	392052	3150	<0.008							
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

APPENDIX 22.

ABERFOYLE EXPLORATION

477 DIAMOND DRILL LOG

599477

PROJECT : HAMPTON ELIS/73

PROSPECT: MT CHAMPION AREA

HOLE DRILLED BY TASMANIAN DEPT. OF MINES.

HOLE NO: MCH-1 (X-MISD-15)

PAGE: ONE of 10

LOGGED: AMH

DATE: AUGUST 1976

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2			BLACK SHALE	TYPICAL MATT BLACK MASSIVE TO BANDED CHERT RICH SHALE. NOT GRAPHITIC.							NEARLY ORIENTATED ON JOINT PLANES (CAL. FAINTLY LAMINATED)	
4								VERY BROKEN				
6												
8				6.6 LAMINATED - SILTY BANDS, PYRITE BLEBS AT 5° TO C.A. 8.0 INTERPENETRATING INTRUSIVE? CONTACT →							PEL 383-70, 9.0 REF. 6.6-9.0 SPHENOMACRATIC PELITE. 2 MM LAMINATED MASSIVE, CLASTIC MICA FLAKES, STRETCHED FELDSPAR GRAINS, CHERTY. POOR SURFACTION.	
10			10.4 FELDSPATHIC ANDESITE LAVA BRECCIA	10 FEET GREEN WHITE PEBBLE WITH ABUNDANT RELICT FELDSPARS. GRADES DOWNWARD INTO OBVIOUS FELDSPATHIC ANDESITE.	10.0 PYRITE/WHITE CLAY - ARGILLIC ALTERATION GIVES CLAY PROVIDING AT SURFACE?		10.4 FINELY DISSEMINATED PYRITE CUBES.					
12											PEL 383635: 10.4 REF. 10.4-15.2 ALTERED ANDESITE. THOROUGHLY SERICITE-CHLORITE-(QUARTZ-PYRITE) ALT. FELDSPATHIC LAVA.	
14				15.2 DARK GREEN FELDSPATHIC ANDESITE	15.2 LAMINATED (?) CHLORITIC MATRIX, ARGILLIZED OR SERICITIZED FELDSPATHIZED MATRIX		15.2	15.4				
16												
17.2			ANDESITIC LAPILLI VOLCANICLASTIC	17.0 FELDSPATHIC ANDESITE LAVA WITH ORIGINAL SHALEY MATRIX NOW COMPLETELY ALBITISED.	ALBITE - PERTHITE 5 SOME VAGUE OUTLINE OF ANDESITE CLASTS.						WHITE CLAYS ARE MAINLY FELDSPARS IN PYRITE CUBIC ALTERATION IMPLYING ANDESITES IN MICAS, MAFIC ETC.	
20			20.2 FELDSPATHIC ANDESITE LAVA BRECCIA	CLASTS: STRONGLY FELDSPATHIZED, DARK GREEN, 1-10MM, MATRIX SUPPORTED; ROUNDED GHOSTED OUTLINES DUE TO CORRODED MARGIN MATRIX: WHITE/(GREY) KHAKI ALBITE + SERICITE. CORRODED ANDESITE FRAGMENTS	20.2 GREY-WHITE ALBITE 4 FLOODING OF MATRIX. TRANSITION WITH ASSOCIATED SERICITE AND SERICITIZATION OF CLASTS FELDSPARS.							MM 383636: 17.7: 20.2 17.0 - 20.2 ANDESITIC TUFF LAVA. PHENOCRYSTS OF ALBITISED PLAGIOCLASE, CHLORITISED FERROMAGS., ALBITE-SERICITE-CHLORITE GROUNDMASS.	
22												
24												
26												
28												
30												
32			33.0 UQ NQ									
34												
36											PEL 383637: 34.0 REF. 20.2-57.7 ANDESITIC LAVA BRECCIA ALBITE (-SERI.) ALTERED PLAG PHENOCRYSTS, MINERAL CHLORITISED FERROMAGS (PSEUDOMORPHS); MICA + SILICA FORM. RESIDUAL ALTERATION COMPONENTS. (PHENOCRYSTS IN ANDESITIC CLAST) ALBITISED MATRIX.	
38												
40												
42												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599478

PROJECT : HATFIELD EL 13/73

PROSPECT: MT CHARTER AREA

478

HOLE NO: MCH-1 XMC-D-15

PAGE: 2 of 10

LOGGED: AMH

DATE: SEPT. 1984

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			FELSITE/PORPHYRIC ANDESITE LAVA BRECCIA			4								
46														
48					48.0									
50														
52						3								
54														
56				56.5 ANDESITE + BASALT FRAGMENTS MINTO WITH BLACK SUBMATRIX										
58			57.7 BASALT LAVA	MASSIVE, GREY-GREEN VESICULAR APHANITIC LAVA. RARE PATCHES OF LIGHT GREY INTERPILLOW TYPE CHERT. VESICLES LEACHING OF CARBONATE, SOME MINUTE WHITE SILICA REMAINING	57.7									
60											60.0		CORE NOTICEABLY LEACHED (OF CARBONATE?) — NOT Fe OR STAINED FROM 60.0 TO 123.1	
62														
64				BROWN LEACHED CORE OBSCURES CONTACT STYLE										
65.0			BASALT LAVA BRECCIA	CLASTS: DARK GREEN APHANITIC IRREGULAR WELL TO VESICULAR BASALT. MATRIX: BLUE GREY CHERT, GRADING INTO CHERT.	65.0 PALE GREEN - SERICITE? - DEVITRIFICATION OF SOME MATRIX.	3								
66														
68			68.0 BASALT LAVA.	AS ABOVE 57.7-68.0 . BASALT HAS ... DENSE VERY FINE FELSPARS IN PLACES ± 3 83.0 - 84.0 . BASALT IS DISTINCTLY GREY-GREEN										
70														
72							71.5 WISPY 1-5mm AND MORE REGULAR 5-10mm CALCITE-DOLOMITE VEINS	2		F 71.0, 50cm, LEACHED RUBBLE				
74														
76														
78														
80														
81.4			BASALT LAVA BRECCIA	AS FOR 65.0 - 68.0 — EXCEPT MATRIX IS PREDOMINANTLY PALE PURPLE CALCITE WITH MINOR CHERT	81.4 AS ABOVE 55.0 - 62.0	2								
84														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD EL15/73

PROSPECT: MT CHARTERS AREA

479

599479

HOLE NO: XMC-D-15

PAGE: 3 of 10

LOGGED: RMH

DATE: SEPT. 1996

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86			BASALT LAVA BRECCIA.	SHARP IRREGULAR CONTACT								
86.7												
88			BASALT LAVA	AS ABOVE 57.7 - 65.0								
90												
92												
94												
96												
98												
100				SHARP? IRREGULAR CONTACT								
100.2			BASALT LAVA BRECCIA	AS ABOVE 65.0 - 68.0	100.2 AS ABOVE 65.0 - 68.0	Z						
102						Z						
104				RUSTIED ON CONTACT								
104.5			BASALT LAVA.	GREY-GREEN BASALT WITH TEXTURE DISTINCTLY DIFFERENT FROM ABOVE — HAS 1-3mm CALCITE VEINLETS EVEN FINE GRAINED TEXTURE. DOES NOT HAVE SPECKLED CHLORO-FELDSPAR PHYRIC? TEXTURE OF ABOVE BASALTS.	104.5								
108												
110												
112				ASH TO FINE LAPILLI POLYMICT VOLCANICLASTIC LIGHT GREY TO BLACK WELL LAMINATED (UNDULATING) C.A.I. SOME PYRITE FRAGMENTS								
114												
115.1			ASH/LAP. VOLC.	SHARP IRREGULAR (CONFORMABLE?) CONTACT			CLOSE, FINE DISSEMINATED AND VEINLETS OF PYRITE 1-2%					
116.0				SHARP IRREGULAR CONTACT			116.0					
116			BASALT LAVA.	VESICULAR BASALT LAVA, ALL CARBONATE LEACHED FROM VESICLES AND VEINS.								
118												
120				30cm GREY CHERT MARTIN BRECCIA ON CONTACT								
120.5			ANDESITE FINE LAPILLI VOLCANICLASTIC	IMPERFECTLY SORTED, VERY LITTLE MATRIX; FEW 1-20mm FELSITIC FRAGMENTS.		120.0 Z						
122.1									122.4			
124			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA	GRADATIONAL CONTACT OVER 1cm								
126												

REMARKS:

REF 382639, 109.9, REP 57.7 - 115.1

AMYGDALOIDAL BASALT.

ABUNDANT ALBITISED (SAUSS) PLAG.

& UNALTERED ANHEDRAL PHENOCRYSTS

ALBITISED PLAGIOCLASE MICROLITES + SECONDARY MINERALS. TEXTURE DESTROYED. SOME XENOLITH.

REF 382640, 115.2; REP 115.1 - 116.0

TUFFACEOUS PELITE SEDIMENT

ALBITISED MICROFOSSILS

REF 382641, 119.8, REP 115.1 - 116.0

TUFFACEOUS PELITE SEDIMENT

> FAULT STRIKING NW DIPPING STEEP? FROM 122.1? TENTATIVE FAULT AS NOT A BAND IN CORE BELOW FAULT — 164 ?

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

480

599480

PROJECT : HATFIELD ELIS/73

PROSPECT: MT CHANTER AREA

HOLE NO: XMC-D-15

PAGE: 4 of 10

LOGGED: RMH

DATE: SEPT. 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128			FELDSPAR PORPHYRIC ANDESITE LAVA BRECCIA	SIMILAR TO ALL MT CHANTER AREA PP. A. CLAST: DARK GREEN TO BLACK, FELDSPAR PHYRIC ANGULAR TO ROUNDED, DIFFUSE (2% ALBITISED) BOUNDARIES COMMON; MATRIX DOMINANT; RARE EXOTIC (DACITIC?) FRAGMENTS (128-135) MATRIX: GREY GREEN, SILICEOUS, SOME CHLORITE PATCHES (128-135) /ALBITISED	NOTE: NO PINK ALTERATION IN MATRIX AS IN RC-5, RC-6, BUT PETROLOGY INDICATES THAT MATRIX IS ALBITISED.							
130						130.0 PATCHY, WISPY 1-2mm AND MASSIVE 2-10mm VEINS OF QUARTZ, MINOR CHALCOPYRITE, RARE SERICITE, CHLORITE						
132						1						
134												
135.0			FELDSPAR PORPHYRIC ANDESITIC LAVA	GRADUAL DISAPPEARANCE OF BRECCIA TEXTURE OVER 2-10m. GREY-GREEN MASSIVE LAVA.								
136												
138								139.0 SURGE MAGNETITE WITH FAULT AT 143.0				
140												
142				142.0 SILICIFICATION (ASSOCIATED WITH MASSIVE FAULT?) GIVES FLOW BANDED APPEARANCE TO LAVA.	142.0 PATCHY, PERVASIVE 3 VERY PALE BROWN ALBITE/ SILICA ALT.			143.0, 200m! LEACHED, OXIDISED RUBBLE				
144						1						
146												
148												
150												
152												
154											PET: 383644; 154.8, REP. 142.0 - 182.5.	
156											LITHOLOGICAL "ANDESITE" ALBITISED PLAG, MINOR MUSC, SER. ALT. FERROMAG PSEUDOMORPHS; GROUNDMASS OF FELSITIC INTERGROWTH QTZ + ALBITISED FLD. MICROLITES	
158												
160												
162												
164						1		164.0 ?				
166												
168				168.5 AS FOR 135.0 - 142.0	168.0							

PET: 383642; 122.1; REP. 120.6 - 122.1.
ANDESITIC TUFF ALBI/SERICITE ALT. LAVA CLASTS; MINOR ALBITE PLAG. CRYSTALS IN MATRIX OF WHITE MICA

PET: 383643; 122.4; REP. 122.1 - 135.0
ANDESITIC BRECCIA. SIMILAR TO 383642. THROUGHOUT ALBITISED.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATTIENS ELIS/73

PROSPECT: MT CHARTER AREA

481

599481

HOLE NO: XMC-D-15

PAGE: 5 of 10

LOGGED: RMH

DATE: SEPT. 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170			FELDSPAR PHYRIC ANDESITE LAVA										PEG 383645; 173.0; REP 169.0 - 178.0	139.0 - 142.0
172													XENOLITHIC ANDESITE Similar to 383644 (LESS SILICIFICATION?)	
174														
176														
178				RE-APPEARANCE OF BRECCIA TEXTURE OVER 2-3mm										
180			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA	M CORE 122.1 - 135.31 WITH MORE PINK ALTERATION.	PATCHY PINK (FELDSPAR ? SILICA?) ALTERATION OF MATRIX AND FRAGMENTS	2							PEG 383646; 182.0; REP 178.0-185.7	
182													LEUCO ANDESITIC BRECCIA Similar to 644, 645 ANDESITIC	
184														
186														
188														
190														
192														
194				VERY SHARP IRREGULAR CONTACT										
196			195.7 BASALT LAVA	1st 14cm IS WEAKLY BRECCIATED WITH CARB MATRIX, AND PINK VESICULAR - POSSIBLE FLOW TOP CHARACTERISTICS?	195.7		195.5 PATCHY, VEIN FILLING, 1-2mm WISPY VEINS; 2-10mm PINK REGULAR VEINS OF WHITE AND PINK SILICA, CALCITE MINOR SERICITE AND CHLORITE	2						
198														
200														
202														
204														
206														
208														
210			209.2 TYPICAL LIGHT GREY-GREEN MASSIVE VESICULAR BASALT 5-5mm ROUNDED AND IRREGULAR		209.1 3a - 5a CM PATCHES OF PALE WHITE-PINK EPIDOTE ALT.	3		2						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

482

599482

PROJECT : HATFIELD EL15/73

PROSPECT: MT CHARTER AREA

HOLE NO: XMC-D-15

PAGE: 6 of 10

LOGGED: RMH

DATE: SEPT. 86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			BASALT LAVA	CALCITE-QUARTZ VEINLETS. <5mm ROUNDED CALCITE FILLED VESICLES		212.0						
214						M ABOVE PLUS EPIDOTE PHASE OF WIDTH 1-3mm YELLOW-GREEN CHLORITE (OR ILLITE) VEINS						
216												
218												
220												
222												
224												
226												
228												
230												
232												
234												
236												
238												
240												
242											PEG 383647: 241.6; REF 195.7-354.3 AMYGDALOIDAL BASALT ALB/SAUSS/EP MG. PLAGIOCLASE MICROLITHS. NO PYROX IN TS. (EPIDOTE → PALE YELLOW IN H.S.)	
244											PEG 383648: 249.5; REF 195.7-354.3 AMYGDALOIDAL BASALT. As 1612 BUT NO RARE UNIDENTIFIED ALTERED EPIDOTE IN AMYGDULES AND MESOSTASIS.	
246												
248												
250												
252						252.0 END OF CALCITE VEINS. As FROM 198.6-212.0						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD ELIS/73

PROSPECT: MT CHARLOTTE AREA

483

599483

HOLE NO: XMC-D-15

PAGE: 7 of 12

LOGGED: RMH

DATE: SEPT-86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
254			Basalt Lava											
256						3		2						
260														
262							264.6 MS ABOVE, CALCITE VEINING ON PALE VIOLET GREY VEIN SLIGHTLY HYDRAULIC FRACTURING	3						
264														
268														
270														
272														
274						3								
276										F 276.4, 90cm; CARBONATE/SILICIFIC RUBBLE				
278								3						
280														
282														
284														
286														
288														
290														
292						3								
294								3		I 294.4 - 296.2; 18m; 2.90 g/t Au				

ABERFOYLE EXPLORATION

PROJECT : HATFIELD EL15/73

PROSPECT: MT CHANDLER AREA

484

DIAMOND DRILL LOG

599484

HOLE NO: XMC-D-15

PAGE: 8 of 10

LOGGED: RMH

DATE: SEPT 86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296			BASALT LAVA					f 296 to 298.5m CHLORITIC SHEAR ZONE SUB PARALLEL TO C.A.				
298								f PUL. CARB. VEINLETS 297.9, 100mm SUB // TO C.A. EPIDOTIC PAT				
300					3	3						
302												
304												
306												
308												
310								f 310.8, 30mm, FRACT SUB // to C.A. EPIDOTIC VUG CAVITY				
312												
314												
316					3	3						
318												
320								f 319.0; 100mm; (0.5m THICK ?) EPIDOTIC PAT				
322												
324												
326												
328												
330												
332					3	3						
334												
336												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELDS EL15/77

PROSPECT: MT CHAMBERLAIN AREA

483

599485

HOLE NO: XMC-D-15

PAGE: 9 of 10

LOGGED: DMH

DATE: SEPT. 86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338			BASALT LAVA		"	3	"	3						
340														
342														
344														
346														
348										347.7 (MAIN) SUBSIDIARY CENTIMETRIC ZONE FAULT				
350														
352				CONFORMABLE CONTACT. GRADATIONAL/INTER-PENETRATIVE OVER 20cm										
354				354.3		3		3						
			GREY SANDSTONE (RECRYSTALLISED)	LIGHT MEDIUM GRAINED VERY WELL SORTED IMPURE QUARTZ SANDSTONE. <1% DISS. PYRITE THROUGHOUT. MASSIVE, NO BEDDING	354.3		354.3 Qtz (MINOR CALC./SIL.) VEINS	2					PET. 383649, 354; REP. 354.3 - 359.7 PRAMUDSTONE: FRAMEWORK QTZ GRAINS, MUSCOVITE FLAKES, QTZ-MICA PHYLLITE CLASTS; CEMENT — SERICITE - QUARTZ - CHLORITE - CALCITE.	
356														
358														
				359.7 CONTACT AS FOR 354.3										
360			ANDESITE. PP. LAVA BRECCIA	-DARK GREEN NON-VESICULAR LAVA PREDOMINANTLY BRECCIATED WITH SOME MASSIVE ZONES. CLEAR MATRIX IS LIGHT GREY SILICA MASSIVE ZONE TO 362.0 IS NOT FELDSPAR-PHYRIC - REST OF INTERSECTION HAS VARIOUS WHITE PHENOCRYSTS AFTER FELDSPAR.				2					MASSIVE LAVA PET. 383650; 360.7; REP. 359.7 - 376.9 "ANDESITIC" SILT (SEE TS REMARKS) MASSIVE ZONES IN 359.7 - 376.9. ON THE EVIDENCE OF THIN TS: THICK ZONES FINE LAPILLI VOLCANICLASTICS)	
362							2							
364														
366														
368														
370													Jm(?) UNIT PET. 382451, 369.9; REP. 359.7 - 376.9 ANDESITIC BRECCIA PERVASIVE ANDESITE LAVA CLASTS; MINOR PHENOCRYSTS AND CRYSTALS AND PLAGIOCLASE FELDSPAR CRYSTALS AND FRAGMENTS	
372														
374														
376														
378														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599486

PROJECT : HATFIELDS EL15/73

PROSPECT: MT CHANTER AREA

485

HOLE NO: XMC-D-15

PAGE: 10 of 10

LOGGED: RMH

DATE: SEPT 86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			378·9		378·9						PEX 383652: 379.9 REP 379.9-380.0	
380			379·7 B.1 380·05 B.1b 380·25 B.1 381·15 B.1b 381·6 B.1 382·2 B.1b 382·15 B.1 383·5 B.1b 384·8 B.1 384·6 B.1b	INTERBEDDED LIGHT GREY-GREEN VESICULAR MASSIVE BASALT AND DARKER GREEN AMYGDULAR FELDSPAR-PHYRIC BASALT. - FRAMINIFA IN LIGHT GREY-GREEN CHERTY MATRIX. CONTACTS GRADATIONAL OVER 1-2 CMS.	RARE PINK-KHAKI FELD. SERICITE-SILICA MS. OF PHENOCRYSTS IN B.1b. (COMMON INTENSE MS. IN A1b IN MC-5, MC-6 ETC)		<1% LIGHT BROWN GRANULAR SPH, TRACE GALENA, MALACHITE WITH CHERT MATRIX IN RHYOLITE				BASALTIC BRECCIA (Cu content 250 ppm)	
382											PEX 383653: 380.7 REP 380.00 - 380.85	
384							384.6				AMYGDULOIDAL BASALT (LARGE CHARACTERISTICS. PALE COLOUR DUE TO EPIDOTE)	
386			BASALT LAVA	LIGHT GREY-GREEN MASSIVE VESICULAR BASALT. DISRUPTED ZONE 389-390 MDM HAVE INTERMIXED FELDSPATHIC RHYOLITE. ROUNDED VESICLES - CALCITE FILLED TO 1·5mm, CHLORITE FILLED TO 0·5mm		REGULAR 10mm AND WIDER 2mm CALCITE/QTZ VEINS + VESICLE FILLING WITH MINOR PINK CALCITE AND ILLITE (SERICITE)	3					
388												
390												
392												
394												
396											PEX 383654: 395.0 REP 394.5 - 407.0	
398											AMYGDALOIDAL BASALT (BASALT CHARACTERISTICS)	
400				407.0m EOH.							PLAN TO DEEPEN THIS HOLE TO 420m RMH 4-11-86.	
				(NOTE - LAST TRAY OF CORE TAKEN TO HOBART BEFORE BEING LOGGED - POSITION OF CONTACT BETWEEN BASALT AND RHYOLITE ARBITRARILY PLACED AT 407.0m.							* PHENOCRYSTS OF PLAGIOCLASE, PYROXENE (AUGITE) - GROUNDMASS OF PLAG. LATHS, MINOR CHLORITE - SPARSE	

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599487

PROJECT : HATFIELD

PROSPECT: MT CHARTER AREA 48%

0-407m DRILLED BY DEPT. OF MINES, HOLE EXTENDED BY ABERFOYLE.

HOLE NO: MC-15
PAGE: 11 of
LOGGED: AmH
DATE: DEC 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
408			fp ANDESITE LAVA	DARK GREEN-GREY WEAKLY FELDSPAR PHYRIC ANDESITIC LAVA. INTERMITTENT VUGGY BRECCIA TEXTURE WITH GREY CHERTY MATRIX FILLING. (Domiciliate)		WISPY IRREGULAR CALCITE (QUARTZ) VEINS SOME PYRITE 2						
410				MODERATELY fp								
412											PEG. 379351; 412-3; REP 407.0 - 425.0 ANDESITIC BRECCIA. CHLORITISED, SILICIFIED; SILICIFIED PERSISTN. PETROGRAPHY. MINOR VUGS OF QUARTZ. MUSCOVITE (DEVONIAN?)	
414												
416												
418					419.4 PALE BROWN; STRONG SILIC + CHLORITE/SERICITE MOD. WITH FAULT. 4							
420												
422												
424				426.0 BRECCIATED MOD fp	424.75			F 424.75 SOOPM SILICIFIED FOR RUBBLY, CHLON FRACTURE SURFACES + CARBONATE PVG 20° TO C.A.			MAJOR FAULT - CAVING SEVERE DRILLING PROBLEMS.	
426												
428						" 2					PEG. 377352; 428-0; REP 425.0 - 477.6 ANDESITIC BRECCIA SERICITISED/ CHLORITISED FELDSPAR & FERROMG PORPHYRITIC LAVA. SIMILAR TO 351.	
430												
432												
434												
436												
438												
440					440 - LGT. M MOD. PROPYLITIC + FAULT. 442.2							
442												
444												
446												
448				447.6 STRONGLY fp		" 2						

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chantler Area

488

599488

HOLE NO: MC-15
PAGE: 12 of
LOGGED: AMH
DATE: Dec 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
450				LAVA STRONGLY FELDSPAR PHYRIC								
452												
454				454.0 WELL DEVELOPED BRECCIA TEXTURE THROUGHOUT THIN SECTION	454.0							
456					CREAMY TO GREEN-GREY ?SILICA/FELDSPAR MATRIX ALTERATION 2							
458												
460				459.7 SHALE + GREY CHERT MATRIX 460.5 TO BRECCIA. ?	460.0 4							
462						463.0						
464				463.5	463.5	0						
466					2	466.0						
468						4 2						
470				GRADATIONAL CONTACT OVER 2cm. 470.0	470.0							
472			ANDESITE (?) LAVA (NON-FELDSPAR PHYRIC, VESICULAR)	PALE GREEN MASSIVE (NON-BX) LAVA BECOMING PALER DUE TO "QUELLITE" ALTERATION) TOWARDS LOWER CONTACT. VESICLES - (PREDOMINANTLY IRREGULAR, 1-4mm, BUT SOME ROUNDED, 5-10mm AS IN BASE) ARE FILLED WITH WHITE CALCITE.							
474												
476												
478												
480												
482					481.0	481.0						
484				TYPICAL TEXTURE OF MAT. FOOTWALL ANDESITE AT HEWITSON.	"QUELLITE" TEXTURE SILICA/SERICITE/VEINLET PYRITE ALT. INCREASING IN INTENSITY TOWARDS LOWER CONTACT. 2	2 3						
486												
488												
490												

REMARKS:

PEG 379353; 460.0, REP 459.7-463.5
PORPHYRITIC BRECCIA (Chloritised)
AUGITE-PLAG + FERROMG PORPHYRITIC ANDESITE CLASTS IN CHERTY ARGILLITE MATRIX. CLASTS HAVE PERLITIC CHILLED MARGINS.

PEG 379354 478.6, REP 470.0 - 491.5
AMYGDALOIDAL ANDESITE
FELDSPAR + FERROMG PORPH. LAVA. SERICHL/CHER. ALT. CHL + QTZ + CALC. IN AMYGDULES.

MG-S "QUELLITE" ALT.

PEG 379356, 489.0 REP 481.0 - 491.5
AMYGDALOIDAL ANDESITE
(ALB/CALC/SER ALT. PLAG.) + (CHL. ALT. PYROX.) PHENOCRYSTS; QTZ/SERICHL/CALCITE ALT. FERROMG. MINERALS. TRACE PYRITE.

(NOTE CALCITE ALT.)

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : MT CHARTER

489

599489

HOLE NO : MC-15

PAGE : 13 of

LOGGED : AMH

DATE : JAN 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
492			491.5	CONFORMABLE SHARP IRREGULAR CONTACT (OVER 2mm) AT 25° CA										
494			MIX VLCL. (SILTSTONE) 494.2	MID-GREY VERY FAINTLY LAMINATED SILTSTONE. MINOR FLECKS CARBONATE PYRITE ALIGNED WITH LAMINATION (BEDDING).	491.5	5	491.5	3					10cm EPIDOTE(?) VEINING ON CONTACT.	
496			(SILTSTONE) 497.2	SIMILAR TO ABOVE. BUT WITH DISTINCT AND VERY FINE LAMINATION (CONSISTENTLY 45°CA) & SOME FINE SANDSTONE BANDS. GRADATIONAL CONTACT (10cm)			494.2	1					REF. 379357; 496.0, REF. 491.5-494.2 TUFFACEOUS PELITE. SILTSTONE SIMILAR TO 494.2 ABOVE. MINOR CARBONATE FLECKS.	
498			ANDESITE PPL 498.5	DARK GREEN MASSIVE STRONGLY PLAGIOPORPHYRIC				3-4					REF. 379357; 496.0, REF. 494.2-497.2 TUFFACEOUS PELITE. SIMILAR TO 494.2 ABOVE. MORE FRACTURED.	
500			DACITE LAVA. 500.2	PALE GREEN NON-PORPHYRITIC FINE GRAINED DACITE WITH DISTINCTIVE ALTERATION ENHANCED DEVITRIFICATION TEXTURES. VERY SHARP CONTACT AT 40° C.A									REF. 379358; 499.2, REF. 498.5-500.2 BRECCIA. CLASTS LAVA. MINOR CARB. MICROLITHS QUARTZ VEINLETS. LOW Zn CONTENT OF 75 ppm	
502			ANDESITE PPL	MID GREEN-GREY FELDSPAR PHYRIC LAVA. NOT DX. INCLUDES VEIN LIKE LIGHT GREY CLASTS (NOT MATRIX INFILL) COULD BE A VLCL BUT TEXTURALLY DISTINCT FROM FOLLOWING UNITS. SIMILAR TO 497.2 - 498.5											
504														
506														
508								3-4						
510														
512							513.2							
514								2					497.2-498.5 REF. 379359, 500.2, REF. 500.2-518.1 ANDESITIC BRECCIA. ALB/CARB/CHL MX. VESICULAR PORPHYRITIC LAVA	
516				SHARP CONFORMABLE CONTACT AT 40° C.A.										
518			518.1		518.1									
520			INTERBEDDED ASH VOLCANICLASTIC AND ANDESITIC LAPILLI VOLCANICLASTIC.	• LIGHT GREEN-GREY INTERBEDDED ASH AND FINE LAPILLI VOLCANICLASTIC, MINOR MEDIUM LAPILLI VOLCANICLASTIC. • ASH VOLCANICLASTICS ARE FINELY BANDED. AVERAGE 45° TO C.A TO 544; 25° TO C.A. TO 560; 15° TO C.A. TO 580	TEXTURAL SERICITE. DISSEMINATED PYRITE	2									
522														
524														
526				• BANDS ARE WEAKLY POLYMICTIC, CONTAINING ROUND PYRITE AND TUFFACEOUS FRAGMENTS, CHLORITE PATCHES, SERICITIZED FRAGMENTS.										
528														
530								2						
532			NB 531.9 EOH			2								

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HASFIELD

PROSPECT: MT CHARLES

490

599490

HOLE NO: MC-15

PAGE: 14 of 15

LOGGED: AMH

DATE: JAN 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
534			INTERBEDDED ASH VOLCANICLASTIC AND ANDESITIC LAPILLI VOLCANICLASTIC.			N		N					CONTACT AT 540.2	
536													SILICIFIED ZONE OF LAVA (CHILLING?) 35°	
538			538.0										INTERLAYERING ANH. ASH. SCALLOPED CONTACTS	
540			BASALT LAVA 540.2	LAVA? MASSIVE LIGHT GREY-GREEN WEAKLY VESICULAR LIGHT GREY SILICEOUS MARGINS									REF. 379351; 539.7 REF. 538.0 - 540.2	
542			AS FOR 518.1 - 538.0										BASALT LAVA - MASSIVE CHLORITIC CALCITIC VEINLETS	
544													REF. 379362; 551.4; REF. 518.1 - 561.7	
546													CLASTIC SEDIMENT. CHLORITIC MA. LAVA CLASTS; ISOLATED FRAGMENTS.	
548														
550														
552														
554														
556								2						
558							558.0							
560						2		2-3						
561.7			561.7	CONTACT →	561.7				561.7					
562			INTERBEDDED MICACEOUS SANDSTONE & SILTSTONE	INTERBEDDED - DARK GREY BLACK MASSIVE SILTSTONE - GREY MICACEOUS SANDSTONE, MASSIVE - LAMINATED ROCK CONSISTING OF VERY FINELY LAMINATED SILTSTONE, MICA SANDSTONE AND MICA SILTSTONE LAMINATIONS VERY FINE (<1mm) AND COMMONLY SLUMPED ON SCALE OF MILLIMETRES										
564														
566														
568														
570														
572								2-3						
574														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: MT CHARLES

491

599491

HOLE NO: MC-15

PAGE: 15 of

LOGGED: AMH

DATE: JAN '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
576			INTERBEDDED MICACEOUS SANDSTONE + SILTSTONE.	577.2 SEDIMENTARY BRECCIA - ALIGNED (LOCAL ELONGATE ANGULAR BLACK SHALE FRAGMENTS IN MICA CONGLOMERATE MATRIX			2-3					YER. 379364, 561.4, 2EP. 561.7-606.2 QUARTZ - MICA SANDSTONE. SIMILAR TO 379363 NOT CUTTINGS.	
578													
580				581.3									
582									581.6, 60Dm, 20° C.A, RUBBLE + TUG.				
584													
586													
588													
590													
592													
594													
596													
598													
600													
602													
604													
606				606.3 EOH			2-3						

SAMPLE NO : 383634
LOCATION : MC-15/9.0m
REPRESENTATIVE OF : Banded block shale within 0-10.4
REMARKS : Banded block shale

SAMPLE NO : 383635
LOCATION : MC-15/14.4
REPRESENTATIVE OF : 10.4-15.2
REMARKS : Clay altered feldsparphyric andesite

SAMPLE NO : 383636
LOCATION : MC-15/18.9
REPRESENTATIVE OF : 17.0-20.2
REMARKS : Silicified feldsparphyric andesite lava breccia

SAMPLE NO : 383637
LOCATION : MC-15/36.0
REPRESENTATIVE OF : 20.2-57.7
REMARKS : Feldsparphyric andesite lava breccia. What is the composition of the matrix.

SAMPLE NO : 383638
LOCATION : MC-15/83.0
REPRESENTATIVE OF : "Feldsparphyric" basalt within 57.7-115.1
REMARKS : Is this a feldsparphyric basalt?

SAMPLE NO : 383639
LOCATION : MC-15/109.9
REPRESENTATIVE OF : Typical basalt within 57.7-115.1
REMARKS : Typical basalt

SAMPLE NO : 383640
LOCATION : MC-15/115.2
REPRESENTATIVE OF : 115.1-116.0
REMARKS : Shale and volcaniclastic in Hellyer Ore position

SAMPLE NO : 383641
LOCATION : MC-15/115.8
REPRESENTATIVE OF : 115.1-116.0
REMARKS : Bedded volcaniclastic in Hellyer Ore position

SAMPLE NO : 383642
LOCATION : MC-15/122.1
REPRESENTATIVE OF : 120.5-122.1
REMARKS : Andesitic volcaniclastic

SAMPLE NO : 383643
LOCATION : MC-15/127.4
REPRESENTATIVE OF : 122.1-135.0
REMARKS : Feldsparphyric andesite lava breccia

SAMPLE NO : 383644
LOCATION : MC-15/154.8
REPRESENTATIVE OF : 142.0-168.0
REMARKS : Silicified andesite lava

SAMPLE NO : 383645
LOCATION : MC-15/173.0
REPRESENTATIVE OF : 135.0-142.0, 168.0-178.0
REMARKS : Massive andesite lava.

SAMPLE NO : 383646
LOCATION : MC-15/182.0
REPRESENTATIVE OF : 178.0-195.7
REMARKS : Feldsparphyric andesite lava breccia

SAMPLE NO : 383647
LOCATION : MC-15/241.6
REPRESENTATIVE OF : 195.7-354.3
REMARKS : Basalt lava

SAMPLE NO : 383648
LOCATION : MC-15/249.5
REPRESENTATIVE OF : Alteration with 195.7-354.3
REMARKS :

SAMPLE NO : 383649
LOCATION : MC-15/365
REPRESENTATIVE OF : 354.3-359.7
REMARKS : Tuffaceous sandstone

SAMPLE NO : 383650
LOCATION : MC-15/360.7
REPRESENTATIVE OF : Massive Lava within 359.7-378.9
REMARKS : Massive non-feldsparphyric lava

SAMPLE NO : 383651
LOCATION : MC-15/369.9
REPRESENTATIVE OF : Lava breccia within 359.7-378.9
REMARKS : Vaguely feldsparphyric andesite lava breccia.

SAMPLE NO : 383652
LOCATION : MC-15/379.9
REPRESENTATIVE OF : 379.7-380.05 and similar units within 378.9-384.6
REMARKS : Feldsparphyric andesite lava breccia with cherty matrix, disseminated sphalerite.

SAMPLE NO : 383653
LOCATION : MC-15/380.7
REPRESENTATIVE OF : 380.05-380.85 and similar units within 378.9-384.6
REMARKS : Vesicular massive basalt lava.

SAMPLE NO : 383654
LOCATION : MC-15/395.0
REPRESENTATIVE OF : 384.6-399.8
REMARKS : Basalt Lava

Central Mineralogical Services

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Project Geologist
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Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

12th December, 1986

REPORT CMS 86/11/2

YOUR REFERENCE:	Letter dated 31.10.1986
DATE RECEIVED:	3rd November, 1986
SAMPLE NOS.:	383634 - 383654
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

MC-15

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
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HAWTHORN EAST / VIC. 3123

REPORT CMS 86/11/2

A suite of twenty-one drill core samples from MC-15, drilled south of Mt. Charter, was received for routine petrological examination. Representative thin-sections were prepared and examined in transmitted and oblique incident light. Microscopic data is summarised in the attached tabulated descriptions.

Summary

The bulk of this suite comprises altered basic to intermediate lavas, varying compositionally from basaltic through andesitic to leuco-andesitic on the basis of relict compositional and textural features. Alteration assemblages are partly host-rock controlled, typified by epidote-rich assemblages in basalts in contrast to epidote-deficient altered andesitic types. Individual rocks reflect relatively advanced silicification typically with associated white mica. Several exhibit irregular zones of microcrystalline albitisation concentrated in andesitic facies, particularly fragmental types, but also developed locally in basalts.

Subordinate sediments are dominated by tuffaceous and mildly reworked tuffaceous psammopelites. Sample 383649 represents an unusually mature quartzose sandstone with greenschist metapelite-derived lithic clasts supplemented by minor reworked andesitic lava clasts. This facies clearly reflects a break in the volcanic sequence and contrasts with more typical minor tuffaceous psammopelites in the absence of pyroclastic components.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
383634 (T.S. 56813) 9·0	Carbonaceous Pelite. Semi- to sericitic white mica with pervasive carbonaceous matter, fine silt-sized clastic mica flakes; semi-pervasive sericitised feldspar grains, sporadic similarly altered shard fragments.	Sub- to fine millimetric- scale alternation of silty shale and argillaceous siltstone. Incipiently crenulated.	Semi-pervasive, incipiently quartz- and sericite-pressure-shadowed syngenetic pyrite.	Siltstone partings are distinctly tuffaceous; reflect pervasive sericitic alteration. Minor traces of splintery clastic quartz.
383635 14·4	Altered Andesite. Abundant sericitised feldspar, subordinate leucoxenic chloritic sericite-pseudomorphed ferromag.phenocrysts. Altered groundmass of semi-sericitic white mica and near-isotropic chlorite.	"Andesitic" (strongly porphyritic). Weakly flow-banded, vaguely microfelsitic altered groundmass.	Leucoxenised opaques. Traces of secondary quartz, microcrystalline pyrite. Rare apatite.	Thoroughly sericite-chlorite(-quartz)-altered/weakly pyritised flow-banded lava with relict andesitic characteristics.
383636 15·9	Andesitic Tuff Lava. Abundant albitised plagioclase, subordinate leucoxenic-chloritised ferromag. phenocrysts. Albitised to semi-selectively albite-sericite(-chlorite)-altered groundmass.	Andesitic/trend glomeroporphyritic; massive to moulded lithic-fragmental on a sub- to millimetric	Leucoxenised opaques, traces of apatite, quartz. Semi-pervasive microcrystalline pyrite; scale. rare sphalerite.	Exhibits semi-hybrid features; composite of albite-sericite-chlorite-altered andesitic and relatively albitised "leuco-andesitic" clasts. Traces only of secondary quartz.
383637 36·0	Andesitic Lava Breccia. Albitised/sericite-stained plagioclase and subordinate to minor chloritised ferromag. phenocrysts; albitised/sericite-stained to selectively chloritised feldspar-microlathic groundmass.	Subtrachytic lava-matrixed lava-breccia, with millimetric ot centimetric clasts; late chloritic microfractures.	Leucoxenised opaques, traces of pyrite, cloudy microcrystalline epidote, quartz. Traces primary apatite.	Exhibits semi-hybrid characteristics analogous to 383636, with relatively chloritised andesitic clasts; albitised "leuco-andesitic" matrix.
383638 83·0	Amygdaloidal Basalt. Abundant albitised/weakly sericitic plagioclase and unaltered augite phenocrysts, sporadic calcite-chlorite amygdales in a groundmass of albitised plagioclase microlaths; chlorite-epidote mesostasis.	Weakly flow-structured, weakly amygdaloidal, strongly porphyritic basaltic. Mildly stressed.	Traces of chromite, minor traces of pyrite, rare ultrafine chalcopyrite. Minor chlorite-calcite veinlets.	Typical pyroxene-rich basaltic characteristics with abundant fresh phenocrystal augite. Stress effects largely restricted to amygdales, veinlets.
383639 109·9	Amygdaloidal Basalt. Abundant albitised/saussurite-stained plagioclase and unaltered augite phenocrysts; sporadic chlorite amygdales. Groundmass of albitised plagioclase microlaths; saussuritic/chloritic mesostasis.	Analogous to 383638; relatively flow-structured, relatively amygdaloidal.	Chromite, traces of pyrite, pumpellyite; sporadic clots of carbonate and quartz (amygdales). Minor cognate xenoliths.	Amygdaloidal, weakly xenolithic, strongly pyroxenic basaltic lava with close affinities to 383638. Relatively chromiferous.
383640 115·2	Tuffaceous Pelite. Semi-sericitic white mica and cloudy microcrystalline albite with clastic muscovite flakes, disseminated to conspicuous albitised "andesitic" lava clasts, feldspar grains, radiolaria and spongy spicules.	Laminated silty shale with sub- to fine millimetric siltstone, fine sandstone partings. Weakly microcrenulated.	Microcrystalline pyrite, pyrrhotite, minor chlorite, carbonaceous matter, sporadic clots of calcite.	Affinities with 383634. Exhibits distal, impure pelitic ashy characteristics, partly obscured by marked albitisation (including alteration of microfossils).
383641 115·8	Tuffaceous Psammopelite. Framework of albitised andesitic lava clasts, minor albite grains, epidote-chlorite-stained feldspathic cement. Partings, beds of tuffaceous pelite (sim. 383640). Sporadic quartz- and chloritic-albitic quartz veinlets.	Planar to slumped semi-turbiditic/weakly graded bedding. Variably stressed veinlets.	Traces carbonaceous matter, clastic hornblende, vein-apatite, zoisite. Disseminated and veinlet-hosted pyrite, pyrrhotite.	Affinities with 383640, realtively weakly (albitised)-microfossiliferous and distinctly psammitic in comparison. Includes minor albitised shard fragments.

599697

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
383642 122.1	Andesitic Tuff. Framework of albite-sericite-chlorite-altered porphyritic/variably perlitic lava clasts, minor albitised plagioclase grains with a sparse matrix/cement of semi-sericitic white mica.	Angular to subangular, poorly sorted, lithoclastic, with minor moulded and rare composite clasts.	Leucoxenised opaques. Minor vugs of chlorite, quartz, albite. Traces of cloudy carbonate, pyrite.	Interpreted as a subaqueous lithic tuff; possibly incipiently reworked (e.g. slumped). Devoid of tangible non-volcanic components.
383643 127.4	Andesitic Breccia. Clasts of thoroughly albitised/weakly sericite-stained to selectively chloritised porphyritic/variably perlitic ava. Very sparse interclast matrix of chlorite, minor quartz.	Moulded/weakly flow-structured, psammite- to lapilli-grade, lithoclastic.	Leucoxenised opaques, rare fine pyrite. Traces of calcite.	Clasts closely analogous to 383642. In contrast, this rock exhibits typical lava flow breccia characteristics.
383644 154.8	Amygdaloidal "Andesite". Albitised plagioclase and minor muscovite-quartz-pseudomorphed ferromag. phenocrysts, quartz-muscovite(-chlorite) amygdales in a groundmass of felsitic and secondary quartz, albitised feldspar microlites, minor chlorite.	Amygdaloidal, semi-banded, porphyritic, felsitic; incipiently quartz-veined.	Leucoxenised opaques, rare very fine apatite.	Felsitic, devitrified andesitic amygdaloidal lava; distinctly quartz-muscovite-altered in contrast to 383642, 383643.
383645 173.0	Amygdaloidal "Andesite". Albitised plagioclase phenocrysts, minor chloritised ferromag. microphenocrysts, sporadic quartz-muscovite amygdales in a chlorite-sericite-stained/partly silicified feldspar-microlitic groundmass.	Analogous to 383644; weakly perlitic and flow-structured in comparison.	Leucoxenised opaques, minor traces of pyrite. Minor chloritic quartz-albite veinlets.	Close affinities with 383644, and similarly altered. Possibly strictly leuco=andesitic, but primarily glassy and thus poorly diagnostic.
383646 182.0	"Leuco-Andesitic" Breccia. Clasts of albitised plagioclase-porphyritic, variously chloritic to chlorite-sericite-altered lava with irregular zones of microcrystalline secondary albitisation.	Lapilli-grade, moulded/ flow-structured, lithoclastic.	Leucoxenised opaques, sparse corroded quartz phenocrysts, chlorite veinlets with traces of sphene.	Exhibits leuco-andesitic characteristics in common with 383644, 383645. Late albitisation partly controlled by ill-defined microfractures, clast margins.
383647 241.6	Amygdaloidal Basalt. Albitised/saussuritic epidote-stained plagioclase microlaths, disseminated quartz micro-amygdales; epidote-chlorite-altered mesostasis. Epidote-calcite and quartz-chlorite-calcite veinlets.	Weakly flow-structured/ locally flow-brecciated basaltic. Displacive quartz-chlorite-calcite veinlets.	Minor chlorite and epidote-chlorite-quartz amygdales. Traces sphalerite in late veinlets.	Typical basaltic relict compositional and alteration features. Primarily fine-grained subvitric and pyroxene-deficient in comparison with 383638, 383639.
383648 249.5	Amygdaloidal Basalt. Sporadic epidote (+ chlorite, quartz) amygdales in a groundmass of albitised feldspar microlaths with a chlorite/microcrystalline cloudy epidote altered mesostasis.	Strongly flow-structured, amygdaloidal, basaltic.	Rare augite phenocrysts. Sporadic quartz(-chlorite-epidote) and late calcite veinlets. Rare blebs of sphalerite.	Close affinities with 383647 and similarly altered. Distinctly flow-structured in comparison. The rare phenocrystal clinopyroxene is unaltered.
383649 365.0	Protoquartzite. Framework of subangular quartz grains, subordinate muscovite flakes, carbonaceous quartz-mica phyllite clasts. Sericite-chlorite-quartz cement with sporadic clots of calcite.	Weakly bedded, silty fine to medium sandy clastic. Mildly stressed.	Detrital leucoxene, minor clasts of calcitised "andesite". Minor traces of pyrite.	Unusually mature quartzose sandstone with greenschist metapelite clasts supplemented by minor "andesite" clasts. No tuffaceous features.

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Sample No.	Classification - Composition	Fabric	Accessories	Comments
383650 360·7	"Andesitic" Tuff. Clasts of variously chloritised to microcrystalline-albitised plagioclase-porphyritic lava, minor streaky fiamme-like clasts of vitric and vitric-crystal tuff. Minor clots of sericite.	Poorly sorted, psammite-grade, flow-structured, semi- to moulded lithic fragmental.	Leucoxenised opaques, minor chloritised ferromags, traces of pyrite. Sporadic quartz-calcite veinlets.	Andesitic/trend leuco-andesitic lithic fragmental. Interpreted as a mildly welded lithic tuff, but possibly strictly a tuff lava. Finer detail obscured by alteration.
383651 369·9	Andesitic Breccia. Clasts of chloritic to selectively albitised lava with albitised plagioclase, sporadic silicified ferromag. phenocrysts, disseminated to conspicuous quartz amygdales. Sporadic vugs of calcite, albite, quartz.	Lapilli- to agglomerate-grade, moulded, lithoclastic, with sporadic interclast vugs.	Leucoxenised opaques, minor traces of chromite, traces of pyrite, rare chalcopyrite.	Bulk of clasts are perlitic-textured types, typical of Mt. Charter andesites. Amygdaloidal and interclast cavity-filling quartz was initially chalcedonic.
383652 379·9	Basaltic Breccia. Clasts of partly epidotised/augite-microporphyritic/albitised plagioclase-microlathic, variably chlorite-amygdaloidal lava with irregular marginal microcrystalline-albitised zones. Sporadic calcite-chlorite veinlets.	Lapilli- to agglomerate-grade, moulded, lithoclastic. Mildly sheared/segmented veinlets.	Sporadic chlorite-quartz-pseudomorphed ?orthopyroxene phenocrysts. Traces chromite, pyrite, pale sphalerite.	Texturally similar to 383651, but with distinctly basaltic relict compositional and alteration features. Sphalerite concentrated in marginal albitic alteration zones.
383653 380·7	Amygdaloidal Basalt. Quartz-carbonate-pseudomorphed pyroxene phenocrysts, chlorite-selvedged quartz amygdales in a groundmass of epidotised pyroxene laths, albitised plagioclase microlaths, chloritic mesostasis.	Weakly flow-structured, weakly porphyritic, basaltic.	Minor calcite veinlets. Traces chromite, relics of augite. Minor traces of pyrite, sphalerite.	Close affinities with 383652 in terms of relict compositional and alteration features. Sphalerite concentrated in amygdales and altered ?orthopyroxene phenocrysts.
383654 (T.S. 56833) 395·0	Amygdaloidal Basalt. Sparse quartz-albite-pseudomorphed pyroxene phenocrysts, frequent chlorite amygdales, chlorite-quartz micro-amygdales; chlorite-mesostasised epidotised pyroxene lath, albitised feldspar microlath groundmass.	Flow-structured (orientated amygdales). Amygdaloidal, weakly porphyritic, basaltic.	Traces of chromite, minor relics of augite. Sporadic calcite-quartz veinlets.	Typical altered amygdaloidal basaltic characteristics. Close affinities with 383652 and 383653.

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ANALYTICAL REPORT No. 23.3.08.03961

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

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

ORDER No.	PROJECT
1435	

DATE RECEIVED	RESULTS REQUIRED
31/10/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	11/11/86	1	21

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION,	METHOD
	383634/54	CO	Prep: 009,017,013,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	383634/54	CO							Ba,Cr,Zr,Ti/401		
	383634/54	CO							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-15

½ PET. SAMPS

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
...ole 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
...k	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
...l	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
...p	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
...eam sediment	SS					fluorescence	FLUOR
...avy mineral	HM					inductively coupled plasma	ICP

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03961	11/11/86	1435	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	383634	95	15	200	<0.5	75	38	1050	110	140
2	383635	20	<5	55	<0.5	30	25	1250	<5	190
3	383636	30	385	1300	0.5	35	20	440	20	180
4	383637	10	<5	65	<0.5	20	11	1650	<5	210
5	383638	75	<5	65	<0.5	125	16	960	440	140
6	383639	100	10	65	<0.5	85	4	1600	330	120
7	383640	60	220	435	<0.5	125	22	1700	340	100
8	383641	50	70	65	1.0	90	46	3250	120	200
9	383642	10	<5	45	<0.5	15	13	2850	<5	320
10	383643	5	<5	60	<0.5	20	14	2600	25	220
11	383644	10	60	115	1.5	10	21	2300	<5	190
12	383645	5	<5	30	<0.5	25	3	1150	130	220
13	383646	70	<5	55	<0.5	10	2	170	<5	210
14	383647	10	<5	500	<0.5	40	4	300	90	110
15	383648	20	25	385	<0.5	20	7	95	45	120
16	383649	5	<5	115	<0.5	105	4	320	760	210
17	383650	10	<5	80	<0.5	15	15	360	55	210
18	383651	15	<5	50	<0.5	35	2	1050	120	180
19	383652	30	430	3200	<0.5	90	25	2100	350	160
20	383653	320	10	340	0.5	95	10	1350	350	130
21	383654	35	645	890	<0.5	85	11	1100	320	130
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03961	11/11/86	1435	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	383634	3500	0.008	.040						
2	383635	2000	<0.008	.095						
3	383636	1950	<0.008	.092						
4	383637	1950	<0.008	.108						
5	383638	2950	0.017	.047						
6	383639	2350	<0.008	.051						
7	383640	2750	<0.008	.036						
8	383641	4500	0.017	.044						
9	383642	1850	<0.008	.173						
10	383643	1800	<0.008	.122						
11	383644	1750	<0.008	.109						
12	383645	2050	<0.008	.107						
13	383646	1150	<0.008	.183						
14	383647	4450	<0.008	.025						
15	383648	4150	<0.008	.029						
16	383649	2400	<0.008	.087						
17	383650	2250	<0.008	.093						
18	383651	1750	<0.008	.103						
19	383652	2400	<0.008	.067						
20	383653	2150	<0.008	.060						
21	383654	2250	<0.008	.058						
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

SAMPLE NO : 379351
LOCATION : MC-15/412.3
REPRESENTATIVE OF : 407.0-425.0
REMARKS : fp. Andesite Lava

SAMPLE NO : 379352
LOCATION : MC-15/428.0
REPRESENTATIVE OF : 425.0-447.6
REMARKS : Non-feldsparphyric andesite breccia

SAMPLE NO : 379353
LOCATION : MC-15/460.0
REPRESENTATIVE OF : 459.7-463.5
REMARKS : fp. Andesite breccia, shale matrix. What is composition of cream coloured alteration?

SAMPLE NO : 379354
LOCATION : MC-15/478.6
REPRESENTATIVE OF : 470.0-491.5
REMARKS : Basalt lava. ANDESITE

SAMPLE NO : 379355
LOCATION : MC-15/489.0
REPRESENTATIVE OF : 481.0-491.5 (within 470.0-491.5)
REMARKS : Sericite/Qtz/pyrite alteration of basalt lava of sample 379354. QUARTZ TYPE ALT. IN ANDESITE

SAMPLE NO : 379356
LOCATION : MC-15/493.0
REPRESENTATIVE OF : 491.5-494.2
REMARKS : Siltstone or tuff - possible ore host horizon.

SAMPLE NO : 379357
LOCATION : MC-15/496.0
REPRESENTATIVE OF : 494.2-497.2
REMARKS : More obviously layered siltstone or tuff below 379356.

SAMPLE NO : 379358
LOCATION : MC-15/499.8
REPRESENTATIVE OF : 498.5-500.8
REMARKS : Dacite lava, spectacular devitrification texture.

SAMPLE NO : 379359
LOCATION : MC-15/514.0
REPRESENTATIVE OF : 497.2-498.5, 500.8-518.1
REMARKS : A fp. Andesite lava? Unusual chert veinlets.

SAMPLE NO : 379360
LOCATION : MC-15/524.6
REPRESENTATIVE OF : Part 518.1-561.7
REMARKS : Polymict medium lapilli volcaniclastic from within a unit of predominantly finer grainsize. Included pyrite, shale, chlorite and sericite fragments.

SAMPLE NO : 379361
LOCATION : MC-15/539.7
REPRESENTATIVE OF : 538.0-540.2
REMARKS : Possibly a lava within unit of which 379360 is part.

SAMPLE NO : 379362
LOCATION : MC-15/551.4
REPRESENTATIVE OF : Part of lower section of 518.1-561.7
REMARKS : Micaceos shale bands within volcaniclastic 518.1-561.7 represents gradational contact from base of Que-Hellyer volcanics to underlying mica shale/sandstone.

SAMPLE NO : 379363
LOCATION : MC-15/562.9
REPRESENTATIVE OF : Part of 561.7-606.3
REMARKS : Laminated shale/sandstone from basal sediments.

SAMPLE NO : 379364
LOCATION : MC-15/567.6
REPRESENTATIVE OF : Part of 561.7-606.3
REMARKS : Mica sandstone from basal sediments.

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599505

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Project Geologist
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BURNIE / TAS. 7320

3rd March, 1987

REPORT CMS 87/2/9

YOUR REFERENCE:	Letter dated 3.2.1987
DATE RECEIVED:	12th February, 1987
SAMPLE NOS.:	379351 - 379364
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

The Exploration Manager
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

506

REPORT CMS 87/2/9

Fourteen drill core samples from an extension of DDH/MC-15 were received for routine petrological examination. Representative thin-sections were prepared, examined in transmitted light, and together with respective offcuts in oblique incident light, with carbonate stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises mainly altered andesitic lavas and lava breccias with relatively minor basaltic lavas apparently representing minor variants of the andesitic sequence.

The volcanics typically exhibit marked chlorite-albite-carbonate (calcite) alteration, with a few relatively sericitised and/or silicified types. Relatively argillised rocks tend to exhibit mild phyllitic overprints,and carbonate veins invariably exhibit stress and partial recrystalliation effects.

Two semi-distinct lavas are present in this suite; an andesitic tuff lava (379360) and a weakly quartz-porphyritic basalt (379361). These may be broadly compared with rocks noted in recent comparative reviews of thin-sections from QR-081/QR-109/MAC-9 and MAC-6/MAC-7 for David Wallace.

Samples 379362, 379363 and 379364 represent a thoroughly altered tuffaceous sandstone and underlying "basal" quartz-mica sandstones. The latter facies is characterised by its siliceous composition, presence of low-grade regional metapelite-derived lithic clasts, and a notable absence of tuffaceous or volcanomict components.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379351 (T.S. 57446)	Andesitic Breccia. Clasts of chlorite-stained/ albitised lava with albitised plagioclase-, minor silicified ferromagnesian phenocrysts. Irregular zones of microcrystalline quartz matrix. Frequent films, veinlets of chlorite.	Lapilli grade, semi-moulded, lithoclastic; generally perlitic clasts, corrosive/ replacive matrix.	Minor vugs of quartz and muscovite in matrix. Irregular quartz veinlets, leucoxenised opaques, fine pyrite.	Andesitic/trend leuco-andesitic lava breccia; albite-chlorite-altered with corrosive zones of silicification. Traces of primary apatite, secondary calcite.
379352	Andesitic Breccia. Clasts of sericitic/chlorite-stained sericitised feldspar-/weakly chloritised ferromag.-porphyritic lava. Irregular zones of sericitic microcrystalline quartz. Sporadic calcite veinlets.	Analogous to 379351, coarser-grained, weakly flow-structured. Perlitic clasts; mildly sheared veinlets.	Leucoxenised opaques, disseminated fine to ultrafine pyrite.	Andesitic/trend leuco-andesitic lava breccia, similar to 379351; relatively sericitic, with corrosive zones of sericitic cherty quartz.
379353	Andesitic Breccia. Albitised/chlorite- and locally calcite-stained albitised plagioclase-/ weakly chloritised ferromag.-porphyritic lava clasts. Impure chert/cherty argillite matrix with albitised feldspar crystal fragments.	Psammite to agglomerate grade, lithoclastic, semi-moulded to argillite-matrixed. Marginally perlitic clasts.	Leucoxenised opaques, minor sericite, fine to ultrafine pyrite (concentrated in matrix).	Moulded to tuffaceous cherty argillite-matrixed andesitic breccia. Coarser clasts exhibit perlitic chilled margins; partly silicified. "Creamy" where calcitic.
379354	Amygdaloidal Andesite. Frequent sericitised feldspar-, subordinate calcite-chlorite-pseudomorphed ferromagnesian phenocrysts, sporadic chloritic quartz amygdales; sericitised/ chlorite-stained microcrystalline groundmass.	Flow-structured, strongly porphyritic ("andesitic"), variably amygdaloidal; mildly sheared/phyllitic.	Conspicuous leucoxenised opaques; traces of calcite (in amygdales), minor traces of pyrite.	Flow-structured amygdaloidal andesite, thoroughly sericite-chlorite-carbonate-altered and mildly sheared.
379355	Amygdaloidal ?Basalt. Albitised/calcite-sericite-stained plagioclase-, chlorite-pseudomorphed pyroxene phenocrysts, frequent quartz micro-amygdales; quartz-sericite-chlorite-calcite-altered feldspar-microlitic groundmass.	Porphyritic, strongly amygdaloidal, weakly flow-structured, "basaltic".	Leucoxenised opaques, traces of pyrite, sporadic relatively coarse chloritic calcite-quartz amygdales.	Possibly strictly andesitic, but with relatively basaltic relict compositional/textural features. Sheared vein of calcite, minor quartz, chlorite, pyrite.
379356	Tuffaceous Pelite. Semi- to sericitic white mica, with pervasive sericitic, splintery, silt-sized felsic clasts, fine clastic quartz, muscovite flakes, sporadic lenses of spongy poikilitic calcite; irregular zones of vein-calcite.	Incipiently banded, silty clastic/vaguely vitroclastic. Weak slaty cleavage; sheared veins.	Conspicuous silt-sized clastic leucoxenic semi-opaques, minor traces carbonaceous matter, chlorite, pyrite.	Quartzose-micaceous silty shale with poorly defined pelitic ashy components. Calcitic lenses appear to represent boudinaged/carbonated ashy partings.
379357	Tuffaceous Pelite. Semi- to sericitic white mica with pervasive splintery to subangular sericitic feldspar, subordinate quartz grains/ minor composites, muscovite flakes. Sporadic relatively quartzofeldspathic lenses.	Analogous to 379356, relatively silty-vitroclastic, banded; similarly cleaved (discordant).	Sheared vein-calcite, minor replacive calcite. Clastic leucoxenic semi-opaques, traces carbonaceous matter, pyrite.	Close affinities with 379356; relatively tuffaceous, with conspicuous devitrified/partly sericitised shardd fragments, partly in boudinaged lenses.
379358	"Basalt Breccia". Clasts of albitised plagioclase-microlathic/chloritised sericite-carbonate-stained, glass-mesostasised lava. Calcite cement with irregular zones, veinlets of calcite-stained chert.	Psammite to lapilli grade, subangular, orientated "basaltic" clasts; stressed to sheared cement.	Minor leucoxenised opaques. Disseminated fine pyrite, traces of hematite in calcite cement.	Clasts are "slaggy" (quench-) textured in part. Interpreted as a quench breccia with interclast/ cavity-filling cement. Basaltic characteristics.

599507

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379359	Andesitic Breccia. Albitised/calcitised plagioclase-/weakly chlorite-pseudomorphed ferromag-porphyritic lava clasts with chlorite-sericite-altered to irregularly silicified groundmass.Zones of impure chert matrix.	Lapilli to agglomerate grade, moulded to chert-cemented, litho-clastic. Late irregular silicified zones.	Leucoxenised opaques, rare chromite. Traces of pyrite (concentrated in chert); discont-inuous calcite veinlets.	Thoroughly altered andesitic lava breccia characteristics with a sericite-chlorite-carbonate assemblage complexed by nebulous zones of silicification.
379360	Andesitic Tuff Lava. Frequent albitised/ calcitised plagioclase-, subordinate carbon-ated ferromagnesian phenocrysts, sporadic silicified lava clasts in a sericitised/ calcite-chlorite-stained groundmass.	Flow-structured, strongly porphyritic ("andesitic"), weakly clastic lava. Moderately sheared/phyllitic.	Leucoxenised opaques, disseminated fine to ultrafine pyrite (con-centrated in thin stringers).	Thoroughly altered andesitic lava with sporadic, selectively silicified felsitic lava clasts. Similar rocks appear in DDH's QR-081, MAC-6/MAC-7.
379361	Amygdaloidal Basalt. Albitised/calcite-stained plagioclase microlaths with a calcite-stained chlorite mesostasis; frequent quartz and calcite-quartz micro-amygdales.	Finely amygdaloidal, basaltic, with a weak phyllitic overprint. Weakly microporphyritic (in feldspar).	Leucoxenised opaques, minor traces pyrite (and ?chalcopyrite). Rare quartz micro-phenocrysts.	Thoroughly chlorite-albite-calcite-sericite-altered basic lava with semi-chilled basaltic characteristics. Finer detail obscured by alteration, shearing effects.
379362	Tuffaceous Sandstone. Cloudy microcrystalline calcite and chlorite in varying proportions with subordinate sericite, disseminated splintery to subangular quartz grains, chloritised/calcitised lithic clasts,feldspar	Carbonaceous sandy shale-parted silty fine to medium sandy clastic. High-angle discordantly grains. cleaved.	Minor recrystallized radiolaria,carbon-aceous pelite clasts, clastic muscovite, chlorite, leucoxene.Fine pyrite. worked tuffaceous.	Exhibits pervasively chlorite-carbon-ate-altered, poorly determinate lava clasts, supplemented by chloritised shards/shard fragments. Mildly re-
379363	Quartz-Mica Sandstone. Subangular quartz grains, relatively minor muscovite flakes, minor chert and carbonaceous pelite clasts with a calcite-chlorite-sericite matrix. Interspersed bands, partings of carbonaceous	Moderately to well-sorted silty fine sandstone with sub- to millimetric shale shale. interbeds.Discor	Detrital leucoxenic semi-opaques, rare tourmaline, zircon. Conspicuous fine dantly sheared. pyrite.	Distinctly quartzose/micaceous in comparison with 379362 and devoid of tuffaceous or volcanically derived clastic components.
379364 (T.S. 57459)	Quartz-Mica Sandstone. Subangular quartz grains, subordinate muscovite flakes, carbon-aceous pelite and sericite-quartz metapelite, minor chert clasts. Calcite-stained kaolinitic matrix/cement.	Poorly sorted (silty fine to medium),weakly silty pelite-parted, sandy clastic. Mildly stressed.	Detrital leucoxene, chromite, rutile, zircon, rare tourmaline. Minor syngenetic pyrite.	Close affinities with 379363; relatively lithoclastic in comparison, but similarly devoid of tuffaceous and volcanically derived components.

509

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Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04220

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
1499	

DATE RECEIVED	RESULTS REQUIRED
11/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	04/03/87	1	14

STATE OF SAMPLES	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	379351/379364	RD	Prep: 009,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379351/379364	PU							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

MC-15 EXTENSION -
½ PET analyses

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 A. J. Gould

510

ANALABS

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

599510

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04220	04/03/87	1499	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	
1	379351	5	10	80	<0.5	35	6	140	65	
2	379352	5	5	50	0.5	10	7	450	8	
3	379353	15	25	115	0.5	40	36	1800	65	
4	379354	10	10	70	<0.5	15	7	680	7	
5	379355	110	60	435	<0.5	25	14	1100	50	
6	379356	30	15	45	<0.5	40	13	970	50	
7	379357	20	5	45	<0.5	25	9	1050	40	
8	379358	55	10	85	<0.5	30	7	350	75	
9	379359	20	10	45	<0.5	15	10	570	15	
10	379360	60	10	65	<0.5	40	7	310	130	
11	379361	60	10	80	<0.5	30	3	170	75	
12	379362	60	25	115	0.5	85	20	360	380	
13	379363	30	50	150	<0.5	75	50	250	190	
14	379364	15	10	40	<0.5	95	14	200	490	
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	101	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

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ANALABS

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

599511

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04220	04/03/87	1499	1 OF 1

TUBE No.	SAMPLE No.	Zr	Ti	Zr/Ti						
1	379351	170	2250	.076						
2	379352	180	2200	.082						
3	379353	190	3150	.060						
4	379354	180	3000	.060						
5	379355	160	2550	.063						
6	379356	160	2100	.076						
7	379357	170	2150	.079						
8	379358	1300	5650	.230						
9	379359	140	3000	.047						
10	379360	140	4600	.030						
11	379361	140	6300	.022						
12	379362	120	3850	.031						
13	379363	170	2350	.072						
14	379364	180	2000	.090						
15										
16										
17										
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

APPENDIX 23.

599513 PAGE OF

514

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. MC 15 (MINES DEPT)

DATE

No.	SAMPLE NUMBER	INTERVAL		ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	392126	0	10.4			392158	275.0 285.0		
2	27	10.4	15.2			392159	285.0 295.0		
3	28	15.2	20.2			392160	295.0 - 305.0		
4	29	20.2	30.2			392161	305.0 - 315.0		
5	392130	30.2	40.2			392162	315.0 - 325.0		
6	31	40.2	50.2			392163	325.0 - 335.0		
7	32	50.2	57.7			392164	335.0 - 345.0		
8	33	57.7	65.0			392165	345.0 - 354.3		
9	34				2 ST	392166	354.3 - 359.7		
10	35	65.0	68.0			392167		2	5T
11	36	68.0	81.4			392168	359.7 - 369.7		
12	37	81.4	86.7			392169	369.7 - 378.9		
13	38	86.7	100.2			NO SAMPLE	378.9 - 384.6	TOO INTERMIXED	
14	39	100.2	104.5			392170	384.6 - 394.6		
15	392140	104.5	116.1			EOT 392171	394.6 - 398		
16	41	115.1	116.0		SPCH CORE				
17	42	116.0	120.5						
18	43	120.5	135.0						
19	44	135.0	145.0						
20	45	145.0	155.0						
21	46	155.0	165.0						
22	47	165.0	178.0						
23	48	178.0	188.0						
24	49	188.0	195.7						
25	392150	195.7	205.0						
26	51	205.0	215.0						
27	52	215.0	225.0						
28	53	225.0	235.0						
29	54	235.0	245.0						
30	55	245.0	255.0						
31	56	255.0	265.0						
32	392157	265.0	276.0						

513

599514

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.03960

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
1434	

DATE RECEIVED	RESULTS REQUIRED
31/10/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	14/11/86	1	46

STATE SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	392126/71	CG Prep: 009,017,013,018							Cu,Pb,Zn,Ag,Ni/101,As/114		
	392126/71	CG							Ba,Cr,Zr,Ti/401		
	392126/71	CG							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-15
bore Grids.

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

516 Corrected Coppers.

599515

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	14/11/86	1434	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392126 0-10.4	80 ~~75~~	25	115	0.5	65	61	760	100	130
2	392127 10.4-15.2	35 ~~50~~	10	85	<0.5	40	72	1400	<5	230
3	392128 15.2-20.2	110 ~~95~~	55	400	<0.5	45	16	1650	9	210
4	392129 20.2-30.2	125 ~~200~~	30	840	<0.5	50	23	1400	<5	190
5	392130 30.2-40.2	115 ~~70~~	<5	240	<0.5	25	11	400	5	190
6	392131 40.2-50.2	90 ~~80~~	<5	270	<0.5	30	8	1450	<5	210
7	392132 50.2-57.7	120 ~~95~~	85	660	<0.5	50	13	1500	65	200
8	392133 57.7-65.0	255 ~~190~~	* 160	570	0.5	130	13	1400	420	140
9	392134 *STD. 2 ~~120~~		190	2300	<0.5	280	58	1150	940	85
10	392135 65.0-68.0	160 ~~180~~	30	285	0.5	150	63	930	460	130
11	392136 68.0-81.4	235 ~~240~~	15	440	<0.5	195	40	980	620	110
12	392137 81.4-86.7	160 ~~160~~	<5	170	<0.5	125	15	980	410	130
13	392138 86.7-100.2	215 ~~200~~	20	190	<0.5	135	13	1200	440	120
14	392139 100.2-104.5	195 ~~220~~	15	185	<0.5	160	59	1100	500	130
15	392140 104.5-115.1	250 ~~450~~	* <5	380	<0.5	145	8	1250	360	110
16	392141 115.1-116.0	215 ~~285~~	185	635	0.5	110	73	1900	300	160
17	392142 116.0-120.5	275 ~~265~~	120	680	<0.5	305	88	880	1050	70
18	392143 120.5-135.0	130 ~~130~~	5	350	<0.5	35	65	1400	30	230
19	392144 135.0-145.0	185 ~~215~~	<5	260	<0.5	45	6	900	<5	230
20	392145 145.0-155.0	735 ~~700~~	<5	690	<0.5	115	5	1500	45	180
21	392146 155.0-165.0	1500 ~~1450~~	<5	1250	<0.5	180	10	1600	<5	220
22	392147 165.0-178.0	545 ~~600~~	<5	600	<0.5	95	3	1150	20	220
23	392148 178.0-188.0	205 ~~200~~	<5	230	<0.5	35	2	1250	<5	240
24	392149 188.0-195.7	280 ~~240~~	<5	290	<0.5	50	4	1350	25	220
25	392150 195.7-205.0	105 ~~90~~	* <5	270	<0.5	40	11	1050	65	150

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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517

ANALABS

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

599516

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	14/11/86	1434	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392151 205.0-215.0	95 ~~90~~	10	460	<0.5	40	10	940	70	140
2	392152 215.0-225.0	125 ~~125~~	10	505	<0.5	35	4	1250	55	140
3	392153 225.0-235.0	55 ~~120~~	15	480	<0.5	45	3	1250	50	140
4	392154 235.0-245.0	100 ~~105~~	105	1250	0.5	45	2	820	70	150
5	392155 245.0-255.0	205 ~~190~~	50	450	<0.5	55	4	940	65	150
6	392156 255.0-265.0	170 ~~190~~	50	360	<0.5	55	2	1050	65	150
7	392157 265.0-275.0	360 ~~400~~	30	665	<0.5	80	6	730	50	130
8	392158 275.0-285.0	215 ~~180~~	20	405	<0.5	55	5	820	60	120
9	392159 285.0-295.0	105 ~~120~~	20	320	<0.5	45	4	750	70	150
10	392160 295.0-305.0	110 ~~100~~	60	845	<0.5	40	18	1150	75	140
11	392161 305.0-315.0	25 ~~20~~	15	190	<0.5	30	5	620	50	130
12	392162 315.0-325.0	25 ~~30~~	10	250	<0.5	85	2	690	60	130
13	392163 325.0-335.0	35 ~~40~~	10	235	<0.5	30	3	520	50	140
14	392164 335.0-345.0	10 ~~10~~	10	125	<0.5	35	4	750	55	120
15	392165 345.0-354.3	10 ~~15~~	10	130	<0.5	35	6	420	75	130
16	392166 354.3-359.7	45 ~~120~~	* 195	2250	0.5	260	34	230	430	170
17	392167 *STD.110	2 ~~215~~	200	2350	<0.5	285	31	1100	910	85
18	392168 359.7-369.7	280 ~~290~~	<5	330	<0.5	100	5	880	120	210
19	392169 369.7-378.9	9200 ~~9380~~	5	7750	<0.5	1550	4	850	100	200
20	392170 384.6-394.6	85 ~~80~~	360	500	0.5	110	10	930	420	160
21	392171 394.6-399.8	265 ~~230~~	25	505	<0.5	135	11	780	370	140
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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

518

ANALABS

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

599517

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	14/11/86	1434	3 OF 4

TUBE No.	SAMPLE No.	Ti	Au
1	392126	3300	<0.008
2	392127	2350	<0.008
3	392128	2100	<0.008
4	392129	1950	<0.008
5	392130	1900	<0.008
6	392131	1800	<0.008
7	392132	1950	<0.008
8	392133	2600	<0.008
9	392134 *STD.[2]	2350	<0.008
10	392135	2700	<0.008
11	392136	2600	<0.008
12	392137	2600	<0.008
13	392138	2700	<0.008
14	392139	3000	0.008
15	392140	2300	<0.008
16	392141	3200	<0.008
17	392142	2350	<0.008
18	392143	2050	0.008
19	392144	2150	<0.008
20	392145	1650	<0.008
21	392146	2000	<0.008
22	392147	1950	<0.008
23	392148	1850	<0.008
24	392149	2350	<0.008
25	392150	5800	<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

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519

ANALABS

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

599518

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	14/11/86	1434	4 OF 4

TUBE No.	SAMPLE No.	Ti	Au
1	392151	5750	<0.008
2	392152	5450	<0.008
3	392153	5150	0.008
4	392154	5600	<0.008
5	392155	5650	0.008
6	392156	5400	<0.008
7	392157	4600	<0.008
8	392158	4450	0.017
9	392159	4900	<0.008
10	392160	5100	<0.008
11	392161	4650	<0.008
12	392162	5200	<0.008
13	392163	5350	<0.008
14	392164	4800	<0.008
15	392165	5450	<0.008
16	392166	2150	<0.008
17	392167 *STD.	2350	0.008
18	392168	2500	<0.008
19	392169	2350	<0.008
20	392170	2600	0.058
21	392171	2450	<0.008
22			
23	DETECTION	50	0.008
24	UNITS	PPM	PPM
25	METHOD	401	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

: 520

599519

PAGE ONE OF ONE

CORE GRIND SAMPLING - ~~MACKINTOSH~~ / HATFIELD

HOLE No. MC-15

DATE 19/1/87

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	3921 72/68	407 417	Cu Pb Zn Ag As Ba Al Cr Ni Zr Ti					
2	73/69	417 425	" 8 m					
3	3921 74/70	425 435	"					
4	75/71	435 447.6	"					
5	76/72	447.6 454.0	" 6.4					
6	77/73	454.0 459.7	" 5.7					
7	78/74	459.7 463.5	" 3.8					
8	79/75	463.5 470.0	" 6.5					
9	80/76	STANDARD	"	*	STD 3			
10	81/77	470.0 480.0	"					
11	82/78	480.0 491.5	"					
12	83/79	491.5 494.2	" 2.7					
13	3921 84/80	494.2 497.2	" 3.0					
14	85/81	497.2 498.5	"					
15	86/82	498.5 500.8	" 2.3					
16	87/83	500.8 510.0	"					
17	88/84	510.0 518.1	"					
18	89/85	518.1 528.0	"					
19	90/86	528.0 538.0	"					
20	91/87	538.0 548.0	"					
21	92/88	548.0 561.7	"					
22	93/89	561.7 570.0	"					
23	3921 94/90	570.0 580.0	"					
24	95/91	580.0 590.0	"					
25	3921 96/92	590.0 606.3	"					
26	3921 97/93			ST	X STD 3			
27								
28	NOTE: SAMPLE	NUMBERS CHANGED						
29		BECAUSE OF OVERLAP WITH FIRST SET OF MC-15						
30		CORE GRINDS						
31								
32								

521

ANALABS

599520 27 FEB RECD

A division of MacDonald Hamilton & Co. Pty. Ltd.
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TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04202

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
1495	

DATE RECEIVED	RESULTS REQUIRED
04/02/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	26/02/87	1	26

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
	392168/392193	CO							Cu,Pb,Zn,Ag,Ni/101,As/114		
	392168/392193	CO							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

MC-15 (EXT.)
Core grids.

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

522 NOTE: SAMPLE NO'S CHANGED BECAUSE OF OVERLAP WITH FIRST SET OF MC-15 CORE SAMPLES.

ANALABS

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

599521

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04202	26/02/87	1495	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	392172 72 407-417	1050	20	1050	<0.5	215	11	210	75	130
2	392173 73 417-425	1900	20	1850	<0.5	370	3	490	7	180
3	392174 74 425-435	615	10	650	<0.5	135	5	540	15	190
4	392175 75 435-447.6	1750	10	1650	<0.5	325	4	570	6	190
5	392176 76 447.6-454	840	10	830	<0.5	195	6	390	5	190
6	392177 77 454-459.7	645	15	680	<0.5	170	8	700	8	190
7	392178 78 459.7-463.5	1300	20	1400	<0.5	315	34	1250	40	190
8	392179 79 463.5-470	510	15	590	<0.5	145	12	860	8	170
9	392180 80 * STD	115	185	2300	0.5	260	12	1200	890	80
10	392181 81 470-480	255	15	280	0.5	80	6	700	30	170
11	392182 82 480-491.5	325	15	350	<0.5	90	8	1050	15	170
12	392183 83 491.5-494.2	425	15	480	<0.5	135	19	900	45	160
13	392184 84 494.2-497.2	2050	10	2000	<0.5	485	8	1100	50	170
14	392185 85 497.2-498.5	1500	15	1600	<0.5	355	12	1200	30	170
15	392186 86 498.5-500.8	285	25	320	0.5	85	16	410	55	140
16	392187 87 500.8-510	245	15	270	<0.5	75	9	690	15	150
	392188 88 510-518.4	620	10	650	<0.5	170	8	640	25	150
18	392189 89 518.4-528	455	15	490	<0.5	135	8	360	70	130
19	392190 90 528-538	330	15	390	<0.5	105	4	1450	25	150
20	392191 91 538-548	200	10	235	0.5	90	9	390	75	130
21	392192 92 548-561.7	360	25	390	1.0	140	16	440	170	150
22	392193 93 561.7-570	140	40	160	0.5	105	29	300	350	190
23	392194 94 570-580	205	50	220	0.5	180	19	400	290	170
24	392195 95 580-590	390	20	470	<0.5	220	11	290	390	170
25	392196 96 590-606.3	130	15	150	<0.5	160	12	340	350	200

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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523

ANALABS

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

599522

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04232	26/02/87	1475	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	39212 #3 STD.	115	175	2300	0.5	265	16	1150	860	85
2										
3		1								
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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599523

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04202	26/02/87	1495	3 OF 4

TUBE No.	SAMPLE No.	Ti	Al							
1	392168	2500	0.008							
2	392169	2150	0.008							
3	392170	2200	<0.008							
4	392171	2200	0.008							
5	392172	2350	0.008							
6	392173	2300	0.008							
7	392174	3200	0.008							
8	392175	3000	<0.008							
9	392176 *STD 3	2450	<0.008							
10	392177	2850	<0.008							
11	392178	2750	<0.008							
12	392179	2150	<0.008							
13	392180	2250	<0.008							
14	392181	3450	<0.008							
15	392182	4850	<0.008							
16	392183	3700	<0.008							
	392184	3250	<0.008							
18	392185	3850	<0.008							
19	392186	5300	<0.008							
20	392187	4300	<0.008							
21	392188	2300	<0.008							
22	392189	2350	<0.008							
23	392190	2800	<0.008							
24	392191	2500	<0.008							
25	392192	2900	<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

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599524

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.09.04202	26/02/87	1495	4 OF 4

TUBE No.	SAMPLE No.	Ti	Au							
1	392193 4510	3 2450	<0.008							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
TLX: AA 59224
Telex AA92560

599525
18 DEC REC'D

ANALYTICAL REPORT No. 23.3.08.03960

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
1434	

DATE RECEIVED	RESULTS REQUIRED
31/10/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	17/12/86	1	46

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
	392126/71	CG	Prep: 009,017,013,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	392126/71	CG							Ba,Cr,Zr,Ti/401		
	392126/71	CG							Au/309		
	392126/71	CG	Prep: 009,017,013,018						Cu(1),Cu(2)/101		

RESULTS TO

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

RESULTS TO

REMARKS

MC-15
checks on Cu
as a result of
problem noted in
STANDARD.
(Cu 2) results in
data base.

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	volatillization	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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599526

527

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	17/12/86	1434	1 OF 2

TUBE No.	SAMPLE No.	Cu	Cu (1)	Cu (2)						
1	392126	75	80	80						
2	392127	50	40	35						
3	392128	95	100	110						
4	392129	200	170	125						
5	392130	70	140	115						
6	392131	80	90	90						
7	392132	95	175	120						
8	392133	190	190	255						
9	392134	120	120	120						
10	392135	180	200	160						
11	392136	240	360	235						
12	392137	160	135	160						
13	392138	200	205	215						
14	392139	220	225	195						
15	392140	450	380	250						
16	392141	205	215	215						
17	392142	265	235	275						
18	392143	130	145	130						
19	392144	215	195	185						
20	392145	700	795	735						
21	392146	1450	1800	1500						
22	392147	600	580	545						
23	392148	200	235	205						
24	392149	240	365	280						
25	392150	90	185	105						

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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599527

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	17/12/86	1434	2 OF 2

TUBE No.	SAMPLE No.	Cu	Cu (1)	Cu (2)
1	392151	90	95	95
2	392152	135	155	125
3	392153	120	70	55
4	392154	105	100	100
5	392155	190	200	205
6	392156	190	150	170
7	392157	400	355	360
8	392158	180	290	215
9	392159	120	145	105
10	392160	100	115	110
11	392161	20	30	25
12	392162	30	30	25
13	392163	40	35	35
14	392164	10	30	10
15	392165	15	20	10
16	392166	120	45	45
17	392167	215	120	110
18	392168	260	325	280
19	392169	9350	8000	9200
20	392170	80	105	85
21	392171	230	220	265
22				
23	DETECTION	5	5	5
24	UNITS	PPM	PPM	PPM
25	METHOD	101	101	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

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529

ANALABS

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

599528

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03960	17.12.86		1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag					
1	392128	140	170	470	0.5					
2	392134	130	230	2350	1.0					
3	392140	305	35	290	0.5					
4	392150	135	25	345	0.5					
5	392158	190	45	445	X					
6	392163	50	25	275	X					
7	392169	9100	30	8000	X					
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5					
24	DIGESTION									
25	METHOD	103	103	103	103					

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 24.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

531

599530

PROJECT : Hasfields

PROSPECT: Mt Chaffers

HOLE NO: MC-17

PAGE: 1 of 9

LOGGED: AMH

DATE: Nov. 1986

Drilled by Dept. of Mines

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2			MICACEOUS SANDSTONE	WEATHERED LIGHT ORANGE BROWN MASSIVE MICACEOUS SANDSTONE.		QTZ/CARB? MINOR STAINING - LEACHED CAVITIES IN WEATHERED ZONE			RUBBLE AROUND WITH DARK BANDS AND MINOR QTZ VEINS	OX3		MUDSTONE OR SANDSTONE ZONE < 10cm THICK NOT LOGGED IN DETAIL. INTERVALS 2.00-22.9 METRES. BEDDING AT 70° CONTACTS ALL CONFORMABLE. NO SIGNIFICANT STRUCTURAL INFORMATION IN THESE INTERVALS	
4													
6													
8										7.5			
10													
12										12.0			
14									F 13.0m, 270cm; WHITE CLAY, QTZ RUBBLE; MINOR STAINING				
16													
18													
20										OX3			
22													
24													
26													
28										28.0			
30			NQ 30-32 NQ	30.0 SANDSTONE AS ABOVE, LIGHT GREY BELOW ZONE OF STRONGER OXIDATION.					30.0 9				
32													
34										OX1			
36													
38													
40													
42													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chandler

532

599531

HOLE NO: MC-17

PAGE: 2 of 9

LOGGED: AMH

DATE: Nov. 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			MICACEOUS SANDSTONE			46.0						
46									OX1			
48						WHITE CALCITE (QTZ) VEINS; IRREGULAR 1 - 15mm; COMMONLY // to BEDDING BUT ALSO X-CUTTING; TRACE PYRITE. 2			47.5			
50												
52			52.0						OX3			
54			MICACEOUS SANDSTONE + INTERBEDDED MICACEOUS SILTSTONE	MASSIVE LIGHT GREY MICACEOUS SANDSTONE + FINELY LAMINATED/ SLUMP STRUCTURED MICA RICH DARK (CARBONACEOUS) AND LIGHT (QUARTZ RICH?) GREY SILTSTONE					54.4		3½ OF WEATHERING	
56						(57.25 - PYRITE IN VEIN)						
58						58.0						
60						" 3						
62												
64			64.45									
66			MICACEOUS SANDSTONE	MASSIVE LIGHT GREY MICACEOUS SANDSTONE AS ABOVE.								
68			68.4									
70			MICACEOUS SANDSTONE + INTERBEDDED MICACEOUS SILTSTONE	AS ABOVE 52.0 - 64.45.								
72			73.5			" 3						
74			MICACEOUS SILTSTONE + INTERBEDDED MICACEOUS SANDSTONE.	AS ABOVE 52.0 - 64.45, BLACK CARBONACEOUS SILTSTONE TRANSMINANT AND PARTICULARLY CONTORTED.		(75.0 - 75.4 CALCITE/QUARTZ HAS STOPED SHALE BOUT)						
76						" 3						
78												
80												
82												
84												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chantrie

533

599532

HOLE NO: MC-17

PAGE: 3 of 9

LOGGED: AMH

DATE: Nov 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
			85.0										
92			MICACEOUS SANDSTONE	MASSIVE LIGHT GREEN MICACEOUS SANDSTONE AS ABOVE		"	3						
94													
96													
98													
100													
102				[102.4 - 102.6 BLACK EXTRA SIM. TO QTZ]		"	3						
104													
106													
108													
110													
112													
114													
116			116.1										
118			MICACEOUS SILTSTONE & MED. MICACEOUS SANDSTONE.	AS FOR 75.5 - 85.0		"	3						
120													
122													
124			123.9 MICACEOUS SANDSTONE	MASSIVE LIGHT GREY MICACEOUS SANDSTONE									
124													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

599533

PROJECT : HATFIELD

PROSPECT: MT CHARTER

534

HOLE NO: MC-17

PAGE: 4 of 9

LOGGED: AmH

DATE: NOV 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128			MICACEOUS SANDSTONE			"	3						
130													
132													
134													
136				136.5									
138			MICACEOUS SANDSTONE & MICACEOUS SILTSTONE	TRED/PURPLE/GREY MICA. SANDSTONE WITH VERY FINELY (<5mm) INTERBEDDED BLACK MIC(?) SILTSTONE/ MUDSTONE.									
140													
142				142.0 GRADATIONAL CONTACT OVER 0.5m.									
144			MICACEOUS SANDSTONE	MINIMUS LT. GY. MIC. SS SOME FINE RANDOM SCOLOPS.		"	3						
146													
148													
150													
152				152.9									
154			MICACEOUS SILTSTONE	MED. TO DK. GY. MICACEOUS SLTSTD STONE PROMINENT SILICIFIED STRUCTURE.									
156				156.9									
158			MICACEOUS SANDSTONE	AS ABOVE									
160													
162													
164						"	3						
166				166.4									
168			MICACEOUS SILTSTONE/ MUDSTONE	BLACK-GREY, PREDOMINANTLY MASSIVE SILTSTONE/ MUDSTONE									

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Charter

535

599534

HOLE NO: MC-17

PAGE: 5 of 7

LOGGED: AMH

DATE: Nov 1996

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170			169.3										
			MICACEOUS SANDSTONE	As ABOVE.			3						
172													
174													
176							3						
178						(181.4 - 182.) MASSIVE CARB VN / QTZ ZONE)								
180													
182													
184													
186													
188							3		191.1 - 191.3 MC SILICIFIED 70° C.A.				
190													
192													
194													
196													
198													
200													
202													
204			203.19 BLACK MICACEOUS SILTSTONE 204.05	WAVY (SLUMPED?) BEDDING AT 10-25° TO C.A.			3					PGE 2.77 g/t; 20.2 g; MC 247 MINERAL C - 275.8	
206			MICACEOUS SANDSTONE	As ABOVE. OCCASIONAL BANDS OF BLACK MICACEOUS SILTSTONE WITH WAVY BEDDING AT 10°-25° TO C.A. USUALLY SOME FRACTURING ON SILTSTONE BANDS.								MICA - QUARTZ SCHIST W. INCLUDING CARBONACEOUS MATTER, PYRITE AND TOURMALINE.	
208													
210													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chalmers

536

599535

HOLE NO: MC-17

PAGE: 6 of 9

LOGGED: AmH

DATE: NOV 1996

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212			Microdiorite Sandstone										
214							3						
216													
218													
220													
222													
224													
226													
228													
230													
232													
234							3						
236													
238													
240													
242													
244													
246													
248							3						
250													
252													

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

537

599536

PROJECT : Hatfields

PROSPECT: Mt Chalmers

HOLE NO: MC-17

PAGE: 7 of 9

LOGGED: RMH

DATE: DEC 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
254			MILLACEOUS SANDSTONE			3						
256											PEC. 379338, 258-2, VERY MIC. FS. WITHIN D - 275-2 PROBOSCIDEA 2.C.E. STRAINS OF QUARTZ, MICROCLINE, ALBITE, MUSCOVITE, CHROMITE TOURMALINE, ZIRCONS, TR. DIFFRACTION.	
260												
262												
264												
266						3						
268				CONTACT IS NOT SITE OF MAJOR FAULTING - THIN IS WITHIN SEDS. CONTACT BRECCIA (RUBBLE) ON SEDIMENT SIDE BUT THIN SKIN OF SILTSTONE (THE POINT OF CONTACT) PRESERVED ON STICK OF F.P.A. IS FOLIATED AND IS AT SAME ANGLE TO CA. AS FAULT AND BEDDING								
270												
272												
274				QTZ/CREAM CARB/CAL VEIN ON CONTACT	SHARP INTERMITTENT ESTIMATED CONTACT.							
276			275.9 RHYOLITE INTRUSIVE	MASSIVE DIRTY-YELLOW-GREEN (I.E. SERICITISED) QTZ-PORPHYRITIC RHYOLITE	275.8 PERVASIVE YELLOW-GREEN SERIA/PIS. PYRITE/SERICITE 4	CLIGHT INCREASE IN VEIN INTENSITY ADJACENT FAULT 275.8	275.9 SEE OVER	F. 2749, 140cm, 35°CA CLEAVAGE, DUCTILE DEFM. + 100cm MYLONITE (Mt CHALMERS FAULT)			NOTE FAULT IS WITHIN SEDIMENTS FAULT // TO BEDDING No CORE LOSS ACROSS CONTACT.	
278			279.35								PEC. 379339, 276-5, REF 275-8-280-0 RHYOLITE, STRONGLY SERICITE CALCITE ALTERED.	
280				278.6 - 278.8 FRAGMENT OF SILTSTONE (MICACEOUS) WITH A FOLIATION AND ELONGATION AT 20° TO CA - INCLUDED IN RHYOLITE.		REVOLUTE (I.E. // MARGINAL) QUARTZ + CALCITE VEINS. QTZ STRONGLY PREDOMINANT IN CONTACT WITH VEINS IN SEDIMENTS. 3					NOTE: CHALMERS FAULT IS PRE-DEVONIAN AS IT CUTS OFF LIMB OF DEVONIAN Mt CHALMERS SYNCLINE. RHYOLITE INTRUDES FAULT PLANE IS NOT SHEARED AND INCLUDES A FRAGMENT OF SHEARED & SILTSTONE. ∴ RHYOLITE IS POST-DEVONIAN	
282			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA	DARK GREEN FELDSPAR PHYRIC LAVA. BRECCIA CLASTS ANDESITIC 1-20cm AND HAVE DIFFUSE OUTLINE. MATRIX IS WHITE-GREEN.								
284												
286												
288												
290												
292					292.0 PERVASIVE/REVOLUTIVE WHITE SILICIFICATION (SIM. TO ABOVE) BEGINS GRADUAL 4						PEC. 379340, 279-1, 279.8 - 280.0 LEUCO-ANDESITE - STRONGLY ALBITE ALTERED PLAG SOME PHENOCRYSTS CHLORITISED FELDSPAR, FRAGMENTAL MATRIX, SERICITE-CARBONATE GROUNDMASS	
294												

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Harfield

PROSPECT: Mc Chance

538

599537

HOLE NO: MC-17

PAGE: 3 of 7

LOGGED: AMH

DATE: DEC 86

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA						RARE SPOTS OF GRANULAR RED-BROWN SPHALERITE. DISSEMINATION THROUGH LAVA. PROMINENT (TO 3% VOL) IN LAST 10cm AT ANDESITE BASALT CONTACT.				PEX. 379341 298.1 299.3 299.9	
298													LEUCOANDESITE. AS FOR 379340.	
299.0														
300														
302														
304														
306														
308														
309.9							309.9		309.9					
310			BASALT LAVA	CONTAMINATED CONTACT, GRADATIONAL OVER 30cm. LIGHT OLIVE GREEN VESICULAR BASALT LAVA. PREDOMINANTLY MASSIVE WITH SOME SECTIONS OF BRECCIA WITH GREY INTERPILLOW TYPE CHERT.				VEINS IRREGULAR PASSING INTO AUX VEINLETS IN BRECCIA MATRIX. QTZ + CALCITE COMPOSITION. PURPLE TINT TO SOME CALCITE.	3	STRONGLY MINERALIZED: - VERY FINE STRINGERS RED-BROWN SPHALERITE & CONCENTRIC "COLLOFORM" TYPE BANDS IN GREYISH BRECCIA MATRIX - SPOTS, STRINGS, CLOUDY DISSEMINATIONS OF RED-BROWN SPHALERITE + RARE SPOTS GALENA IN MATRIX - COARSE BLACK SPHALERITE + GALENA + CHALCOPYRITE IN 1-3cm PATCHES IN CALCITE/QUARTZ VEINS				345.9 - 346.4 PEX. 379342, 312.2; REP 309.9 - 345.9	
312													LAMPROPHYRE DYKE? PORPHYRITIC PHENOCRYSTS; MULTIPLE LATH-SHAPED PLAGIOCLASE (MEASURED - MM). RARE CHLORITE AND PUMPELLYITE. QTZ-CAL. AMYGDULES IN GROUNDMASS.	
314														
316														
318														
320		0.8											NOTE CORE LOSS. INTERVAL ATTRIBUTABLE TO FAULT ZONE. F/W MAJOR FAULT IN THIS SECTION - DRILL HAS BEEN STEERING AWAY.	
322														
324		0												
326		0.9											PEX. 379340, 322.7	
328													EXAMPLE OF INTERPILLOW CHERT.	
330		0.8												
332		0.6												
334		1.0												
336														

539

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hasfields

PROSPECT: Mt Channon

599538

HOLE NO: MC-17

PAGE: 9 of 9

LOGGED: AMH

DATE: DEC 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY ROCK NAME	LITHOLOGY DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338			BASALT LAVA.									
340		1.7	340.0									
342		1.9	BASALT PINK LAPILLI VOLCANICLASTIC	DARK GREEN LITHIC AND CRYSTAL FRAGMENTS							CORE LOSS - CONTAINS NOT RECOVERED	
344		1.8	345.0									
346			BASALT LAVA	LIGHT GREY-GREEN WEAKLY VESICULAR BASALT LAVA.								
348		2.7										
350		1.9										
352												
354		1.3										
356		1.1										
358												
360		0.6										
362		0.7										
364												
366		2.0										
368												
370		0.5										
372		0.5										
374		1.2										
376				376.45 EOH.								

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PETROLOGY SAMPLES, MC17

SAMPLE NO : 379337
LOCATION : MC-17/203.8
REPRESENTATIVE OF : Micaceous siltstone within 0-275.8
REMARKS : Typical of numerous bands of siltstone within mica sandstone sequence.

SAMPLE NO : 379338
LOCATION : MC-17/258.8
REPRESENTATIVE OF : Micaceous siltstone within 0-275.8
REMARKS : Any detrital chromite?

SAMPLE NO : 379339
LOCATION : MC-17/276.5
REPRESENTATIVE OF : 275.8-280.0
REMARKS : Sericite alteration in feldspar - phyric andesite associated with faulted contact between volcanics and mica sandstone.

SAMPLE NO : 379440
LOCATION : MC-17/290.3
REPRESENTATIVE OF : 280.0-309.9
REMARKS : Feldsparphyric lava from which 379339 is derived.

SAMPLE NO : 379441
LOCATION : MC-17/298.1
REPRESENTATIVE OF : 293.0-299.0
REMARKS : Silicification, albitization (?) of feldsparphyric lava.

SAMPLE NO : 379442
LOCATION : MC-17/312.2
REPRESENTATIVE OF : 309.9-340.0, 345.0-376.45
REMARKS : Basalt lava.

SAMPLE NO : 379443
LOCATION : MC-17/322.7
REPRESENTATIVE OF : Grey interpillow type chert in basalt.
REMARKS : Pale brown sphalerite within chert - rims basalt fragments.

"541"

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19FE RECD

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

17th February, 1987

REPORT CMS 87/1/15

YOUR REFERENCE:	Letter dated 20.1.1987
DATE RECEIVED:	21st January, 1987
SAMPLE NOS.:	379337 - 379343
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

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REPORT CMS 87/1/15

Seven drill core samples from DDH/MC-17, drilled south-west of Mt. Charter, were received for routine petrological description. Representative thin-sections were prepared and examined together with respective offcuts, with carbonate stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite comprises altered basic to acid volcanics and subordinate sedimentary rocks.

Volcanics include two examples of albite-chlorite-altered leuco-andesitic lava, a "prehnite-pumpellyite"-altered pyroxenic basalt, and an extensively sericitised rhyolite. The latter rock (379339) is conceivably a minor intrusive, but interpretation will be dependent on contact relationships.

Sediments comprise weakly volcanomict quartzose psammopelites and a highly impure chert facies (379343) typical of that cementing subaqueous breccias and pillow lavas in the Hellyer/Mount Charter area.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379337 (T.S. 57359) 203·8	Mica-Quartz Siltstone. Silt-sized muscovite flakes with varying proportions of angular to subangular quartz. Semi-sericitic white mica matrix with pervasive carbonaceous matter, conspicuous syngenetic pyrite.	Laminated, with sporadic partly slumped and mildly boudinaged quartz siltstone interbeds. Weakly sheared.	Minor traces of clastic feldspar (albite). Minor to conspicuous dolomite. Minor calcite veinlets.	Carbonaceous/pyritic quartzose mica siltstone, variably dolomitic and mildly slumped. Calcite veinlets predate the weak phyllitic cleavage.
379338 258·8	Protoquartzite. Framework of angular to subangular quartz grains/minor composites, carbonaceous metapelite clasts, minor albite grains, muscovite flakes. Calcite-stained microcrystalline sericitic quartz cement.	Weakly bedded, poorly sorted, silty, fine-grained sandstone. Weakly low-angle discordantly sheared.	Detrital chromite. Leucoxenic semi-opaques, rare tourmaline, zircons. Traces syngenetic pyrite.	Fine-grained quartzose sandstone, weakly feldspathic, but non-tuffaceous. Greenschist facies pelite clasts; minor sheared calcite veinlets.
379339 276·5	Altered Rhyolite. Frequent corroded quartz, subordinate sericitic/calcite-stained albite and sanidine-anorthoclase phenocrysts in a pervasively sericitic microcrystalline quartzofeldspathic groundmass.	Weakly flow-banded/structured porphyritic, microfelsitic. Very incipiently sheared.	Leucoxenised opaques, rare very fine ?chromite, calcitised biotite phenocrysts, traces of pyrite, minor	Extensively sericite(-calcite)-altered porphyritic/flow-structured rhyolite. Lava-like, but conceivably a minor intrusive. chloritic microfractures.
379340 290·3	Leuco-Andesite. Frequent sericitic/albitised plagioclase phenocrysts, minor chloritised ferromagnesian microphenocrysts in a chlorite-stained, albite-microlitic to semi-felsitic groundmass. Minor muscovite-chlorite amygdales.	Weakly amygdaloidal, semi-glomeroporphyritic. Perlitic in irregular zones; elsewhere weakly subtrachytic.	Leucoxenised opaques, minor traces of pyrite.	Weakly amygdaloidal intermediate lava with leuco-andesitic characteristics, microcrystalline to subvitric. Unrelated to 379339.
379341 298·1	Leuco-Andesite. Weakly sericitic/albitised plagioclase, minor silicified ferromagnesian phenocrysts in a variably chlorite-stained microcrystalline-albitised groundmass. Minor vugs, veinlets of calcite, quartz.	Analogous to 379340, relatively pervasively perlitic, slightly coarser phenocrysts/glomerophenocrysts.	Leucoxenised opaques, minor traces of pyrite.	Close affinities with 379340; relatively perlitic-devitrified and semi-selectively microcrystalline-albitised in comparison.
379342 312·2	Amygdaloidal Basalt. Disseminated chloritic quartz-pseudomorphed ?orthopyroxene phenocrysts, quartz-chlorite-epidote amygdales; chlorite-mesostasised augite-/albitised plagioclase-lathic groundmass. Chloritic quartz veinlets.	Weakly porphyritic/amygdaloidal, basaltic.	Ultrafine leucoxenised opaques, minor traces of chromite, pyrite, pumpellyite.	Typical pyroxenic basaltic characteristics with selectively altered phenocrystal ?orthopyroxene and fresh augite. "Prehnite-pumpellyite" alteration.
379343 (T.S. 57365) 322·7	Impure Chert. Crypto- to microcrystalline quartz with pervasive fine silt-sized detrital white mica flakes, minor quartz and albite grains, conspicuous very fine pyrite.	Massive to finely laminated. Sporadic mildly displacive pyritic microfractures.	Traces of chlorite, cloudy microcrystalline carbonate, leucoxenic semi-opaques. Rare apatite, chromite, pale sphalerite.	Typical micaceous, silty clastic, pyritic impure chert facies of "interpillow" type. Rare microscopic blebs of sphalerite supplement conspicuous pyrite.

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30 JAN REC'D

A division of MacDonald Hamilton & Co. Pty. Ltd.
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TLX: AA 59224

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ANALYTICAL REPORT No. 23.3.08.04156

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
1480	

DATE RECEIVED	RESULTS REQUIRED
20/01/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	29/01/87	1	6

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	379337/42	SC	Prep: 006,012,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379337/42	SC							Ba,Cr,Zr,Ti/401		
	379337/42	SC							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-17

1/2 Pet. Samps.

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
hole 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
	23.3.08.04156	29/01/87	1480	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379337	<5	20	70	<0.5	135	35	340	250	160
2	379338	30	10	45	<0.5	120	23	170	420	160
3	379339	<5	5	20	<0.5	15	5	570	25	170
4	379340	<5	<5	50	<0.5	30	4	980	<5	280
5	379341	125	<5	60	<0.5	60	25	90	15	220
6	379342	155	15	80	<0.5	110	6	870	360	150
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	114	401	401	401

Zr/Ti
·053
·074
·162
·144
·19
·068

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
	23.3.08.04156	29/01/87	1480	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	379337	3000	<0.008							
2	379338	2150	<0.008							
3	379339	1050	<0.008							
4	379340	1950	<0.008							
5	379341	1850	<0.008							
6	379342	2200	<0.008							
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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EXPLORATION LICENCE 15/73 HATFIELD

TASMANIA

TECHNICAL PROGRESS REPORT

FOR THE PERIOD

JUNE 1986 - FEBRUARY 1988

Volume 3

Appendices ~~23-35~~ 25 32

89-3005

MINES
File Ref. EL 15/73
10 AUG 1989
Doc. Ref.
Action Officer: Litter
Initials: 9-8-89
refers
Resubmit to
Date

89-3005 VOL 3/4

Distribution

Aberfoyle - Hawthorn (1)
Aberfoyle - Burnie (1)
Department of Mines (1)

APPENDIX 25.

548 · 599548 PAGE OF

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD HOLE No. MC-17

DATE 26-11-86

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	378055	235 - 245						
2	56	245 - 255						
3	57	255 - 265						
4	58	265 - 275·8						
5	59	275·8 - 285·8						
6	60	285·8 - 295·8						
7	61	295·8 - 309·9						
8	62	309·9 - 320·0						
9	63	320·0 - 330·0						
10	64	ST STD.	85/119					
11	65	330·0 - 340·0						
12	66	340·0 - 350·0						
13	67	350·0 - 360·0						
14	68	360·0 - 370·0						
15	69	370·0 - 376·45	EOH					
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

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ANALYTICAL REPORT No. 23.3.06.04106

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
1472	

DATE RECEIVED	RESULTS REQUIRED
22/12/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	07/01/87	1	15

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	378055/378069	so	Prep: 16						Cu,Pb,Zn,Ag,Ni/101,As/114		
	378055/378069	PU							Ba,Cr,Zr,Ti/401		
	378055/378069	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-17
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	volatillization	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
	23.3.08.04106	07/01/87	1472	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378055 235-245	25	<5	100	<0.5	130	28	230	450	190
2	378056 245-255	210	<5	85	0.5	115	55	220	390	170
3	378057 255-265	35	<5	70	<0.5	120	49	260	350	180
4	378058 265-275.8	135	<5	100	<0.5	105	77	310	350	170
5	378059 275.8-285.8	195	<5	240	<0.5	80	5	680	100	170
6	378060 285.8-295.8	470	<5	500	<0.5	150	2	780	20	230
7	378061 295.8-309.9	2100	<5	2100	<0.5	575	7	810	<5	220
8	378062 309.9-320	1550	455	4850	<0.5	470	14	1400	410	150
9	378063 320-330	1700	260	2100	<0.5	470	11	1150	430	160
10	378064 *STD.	120	185	2250	<0.5	250	17	1150	910	85
11	378065 330-340	2300	20	2500	<0.5	600	6	1300	470	160
12	378066 340-350	4550	<5	4600	<0.5	1050	8	350	430	170
13	378067 350-360	1550	55	1700	<0.5	400	6	1000	460	160
14	378068 360-370	1800	10	1800	<0.5	490	3	800	450	160
15	378069 370-376.45	730	<5	720	<0.5	245	3	860	440	160
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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599551

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04106	07/01/87	1472	2 OF 2

TUBE No.	SAMPLE No.	Ti	Al	2nTi						
1	378055	2450	0.025	.077		IN MICA SANDSTONE				
2	378056	2200	0.008	.077						
3	378057	2450	<0.008	.073						
4	378058	2350	<0.008	.072						
5	378059	2050	<0.025	.083		INCLUDES RHYOLITE				
6	378060	1900	<0.008	.121						
7	378061	1850	<0.008	.119						
8	378062	2300	<0.008	.068						
9	378063	2400	<0.008	.067						
10	378064 *STD.[3]	2450	<0.008							
11	378065	2650	<0.008	.060						
12	378066	2800	<0.008	.061						
13	378067	2600	<0.008	.062						
14	378068	2450	<0.008	.065						
15	378069	2450	<0.008	.065						
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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APPENDIX 26.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: MT CHARTER

553

Drilled by Dept. of Mines

HOLE NO: MC-16
PAGE: 1 of 3
LOGGED: AmH
DATE: NOV. 1986

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2			RHYOLITE	WEATHERED, WHITE TO PALE YELLOW-GREEN RUBBLY FELSITIC PORPHYRITIC RHYOLITE. PHENOCRYSTS INTERPRETED FROM SHAPE OF LEACHED CAVITIES. (ROCK IS 'WELDED TUFF', ACCORDING TO DEPT. OF MINES GEOLOGISTS)	PERVASIVE YELLOW-GREEN SILICIFICATION 3	VUGGY TEXTURE DUE TO LEACHING OF CALCITE		RUBBLE, BROKEN	CAVERNOUS LEACHED MINOR % OX STAINING	MASSIVE CORE LOSS TO ≈ 40 cm. INTERMITTENT CORE LOSS TO 30.0 m.	
4												
6												
8												
10												
12												
14					3							
16												
18												
20												
22				PROBABLY NOT A FAULTED CONTACT - EXTENSIVE RUBBLE ZONES DUE TO WEATHERING, LEACHING.								
24			25.0 APPROX.		25.0 3							
26			? DACITIC LAVA. (OF MT REED CENTRAL VOLCANIC SEQUENCE)	DARK GREY-GREEN MASSIVE LAVA (CONTACT UNASSEEN, 57.0-62.0) WITH 1-3mm FELSITIC PHENOCRYSTS ALTERED TO CARBONATE. ELSEWHERE PERVASIVELY ALTERED BY PINK SILICA AND SERICITE OF DIRTY YELLOW-GREEN ILLITE	TERMINAL PINK SILICIFICATION → CREAMY COLOUR DUE TO WEATHERING 3 4			30.0m				
28												
30												
32												
34												
36												
38												
40												
42												

CR 86-66

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Christie

554

HOLE NO: MC-16

PAGE: 2 of 3

LOGGED: AMH

DATE: Nov. 1981

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44					"	4								
46														
48														
50					"	4								
52					52.0		52.0				52.0			
54							WHITE IRREGULAR CALCITE/QUARTZ VEINS 1-10mm THICK	3						
56														
58														
60														
62					63.0									
64					INTENSE FEL/MAFIC PINK SILICIFICATION	4 to 5								
66														
68														
70														
72														
74							"	3						
76														
78														
80														
82														
84														

29954

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: MT CHARTER

555

HOLE NO: MC-4

PAGE: 3 of 3

LOGGED: AMH

DATE: NOV. 1981

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
96												
98												
100												
102												
104												
106												
108												
110												
112												
114												
116												
118												
120												
122												
124												
126												
			94.7					F 94.7: 30cm, 20° TO C.A. IGNEOUS RUBBLE			HOLE ABANDONED AT 94.7. TWO ROD STRINGS LOST IN HOLE.	
											94.7 EOH	

55555

SAMPLE NO:	383744
LOCATION :	MC-16/14.0m
REPRESENTATIVE OF:	0-25.0
REMARKS :	Rhyolitic composition, sericitised. Any relict feldspar or quartz phenocrysts? An intrusive or possibly an ignimbrite.

SAMPLE NO:	383745
LOCATION :	MC-16/53.0m
REPRESENTATIVE OF:	Unaltered section (52.0-63.0) within 30.0-94.7.
REMARKS :	Feldsparphyric andesite or dacite lava of the Mount Read Volcanics Central Sequence.

SAMPLE NO:	383746
LOCATION :	MC-16/76.3
REPRESENTATIVE OF:	Intensive pink silica altered zone 63.0-94.7.
REMARKS :	Probably same lava as 383745, with strong pink silica alteration.

599557

557

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

18th November, 1986

REPORT CMS 86/11/9

YOUR REFERENCE:	Letter dated 7.11.1986
DATE RECEIVED:	11th November, 1986
SAMPLE NOS.:	383744 - 383746
SUBMITTED BY:	A.M. Hespe
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 86/11/9

Drillhole MC-16 Samples

Three samples were received for petrographic study; thin-sections were prepared and examined, and are described below. Offcuts were subjected to K-stain tests.

383744 (T.S. 56874)

This is a thoroughly silicified and sericitised volcanic rock, and no primary components have survived; textures, too, are indifferently preserved.

The rock now consists mainly of microcrystalline quartz, with irregular patches of fine sericite; the relict textures of some of the sericite are those of flow-banded glass, and it seems that the rock originally consisted of glassy lava fragments, and it was probably a flow-breccia of small glassy lava fragments, or possibly a welded tuff of that composition, and was relatively felsic.

383745 (T.S. 56875) K-stain test negative.

This is a devitrified and altered porphyritic glassy rhyolite, as far as can be determined.

The phenocrysts are small (mostly < 1 mm), occurring singly and in clusters, and consist mainly of albite which is microfractured and variably replaced by carbonate, with occasional small, corroded quartz phenocrysts, all randomly arranged in a groundmass of pale greenish devitrified glass. This shows a type of "birds-eye" texture, with small spheroids of chalcedony scattered through fibrous greenish sericite. There are small clusters of leucoxenised ?magnetite.

The classification is based on the nature of the phenocrysts and the alteration-products of the glassy groundmass, but since phenocrystal quartz is sparse, the rock may have been more in the nature of a trachyte with a glassy groundmass having the composition of an alkali glass.

383746 (T.S. 56876) K-stain test negative.

This is a silicified, brecciated lava, originally glassy with relatively conspicuous phenocrysts.

The fragments are brownish due to fine Fe pigmentation of the glass, and are cemented by fine quartz (lighter colour). The fragments consist of albite phenocrysts, often well-preserved (but in some fragments replaced by carbonate or quartz), set in a mass of devitrified glass; this now consists of small interlocking patches of pigmented albite riddled with small, thin, pipe-like bodies of chlorite which probably represent stretched vesicles. These features are still visible in completely silicified fragments.

Since the phenocrysts are albite, and the glass has devitrified to albite, the lava can be classified as a sodic trachyte; in its molten state, it was probably very mobile (Na-silicate glasses have a low softening point). The rock may be related to 383745.

H.W. Fander, M. Sc.

599560

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
560
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.03979

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
1446	

DATE RECEIVED	RESULTS REQUIRED
11/11/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	21/11/86	1	3

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	383744/46	CO	Prep: 009,016,013,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	383744/46	CO							Ba,Cr,Zr,Ti/401		
	383744/46	CO							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-16
PET. 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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561

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03979	21/11/86	1446	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	383744 14m	5	<5	15	<0.5	5	3	320	<5	480
2	383745 53m	<5	<5	30	<0.5	20	1	330	55	270
3	383746 76.3m	5	<5	20	<0.5	10	2	190	<5	180
4										
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	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03979	21/11/86	1446	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	383744	2300	0.032							
2	383745	1550	<0.008							
3	383746	1100	<0.008							
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: MT CHANTER

563

HOLE NO: MC-6

PAGE: 1 of 2

LOGGED: AMH

DATE: 23-7-87

DRILLED BY MINES DEPT – THEIR HOLE NO. "MT CHANTER D.H. 28" NO PETROLOGY SAMPLES TAKEN

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				No RECOVERY.								
2.6												
4			GREY SHALE.	GRIM TO BLACK SHALE. STRONGLY WEATHERED THROUGHOUT. VERY BITUMEN WITH STRONG TECTONIC FOLIATION DUE TO FAULTING.				STRONGLY BEDDED AND STRONGLY DEFORMED THROUGHOUT WITH A TECTONIC FOLIATION AT 10°-30° TO CORE AXIS.	OX4		HOLE STRONGLY WEATHERED. RED THROUGHOUT. EFFECT OF FAULT?	
6												
8												
10												
12												
14												
16												
18				CONTACT APPROX. - OBSCURED BY WEATHERING, BROKEN CORE								
20												
22			IND. MICA SANDSTONE, GREY SHALE.	PREDOMINANTLY SANDSTONE WITH IRREGULAR IBDS OF BLACK GRIM SHALE. MOST OF DRILL HOLE IS TAKEN UP BY SHALE.								
24												
26									26.0			
28												
30									OX3			
32												
34				10 mm OF WHITE SILICIFICATION ON CONTACT								
36.0								36.0	36.0			
38			CENTRAL SEDIMENTS VOLCANICS - ACID LAVA.	MASSIVE STRONGLY WEATHERED ACID LAVA. POSSIBLY FELDSPAR PORPHYRITIC (PHENOCRYSTS WEATHERED OUT).				PROBABLE FAULTED CONTACT BETWEEN SEDIMENTS AND CENTRAL SEDIMENTS VOLCANICS – MOST DEFORMATION OCCURRING IN SEDIMENTS	OX4			
40												
42												

5 6 9 5 6 3

PROJECT : HATFIELD

PROSPECT: MT CHARTER

564

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

HOLE NO: MC-18

PAGE: 2 of 2

LOGGED: AMH

DATE: 23-7-87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
				CONTAINS MINOR DISSEMINATED SERICITIC ASH VOLCANICLASTIC E.G. 44.6 - 44.9 ASH CONTACT WITH LAVA 30°CA				WITH ONLY MINOR FOLIATION IN THIN ASH BANDS IN CSV.	OXY			
			69.9 CSV - BASIC LAVA, DYKE? 74.0 EOH.	DARK GREEN MASSIVE LAVA. TOP METRE HAS INTERGRANULAR (QUENCH?) FABRIC TEXTURE. DISTINCTLY DIFFERENT BROWN ORANGE WEATHERING COLOUR					69.9 OXS			

59964

APPENDIX 27.

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT : MT CHARLES

586

HOLE NO : MC-19

PAGE : 1 of 11

LOGGED : AMH

DATE : MAY '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
2				TRILONE								
4												
6			6.3									
8			(FP?) ANDESITE LAVA. (FLOW BANDED)	GREY-GREEN/PINK DISTINCTLY FLOW BANDED ANDESITE LAVA. EVENLY SCATTERED <2mm (FELDSPAR?) PHENOCRYSTS ARE ALTERED TO YELLOWISH SERICITE/ ILLITE.	PINK FELDSPAR SILICA 3 ALTERATION IS CONTROLLED BY FLOW BANDING				OXU			
10												
12												
14									PATCHY OX-3			
16												
18												
20												
22												
24									24J			
26											SOME WEATHERING ON JOINTS AND FAULTS	
			27.0	HQ								
28				NQ								
30												
32												
34												
36												
38				FAULT CONTACT								
40			40.4		40.4							
42				SEE OVER	SEE OVER			† HOLE, SECTION 30° C.A SERICITIC SILICIFIED RUBBLE				

599566

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: MT CHANCERY

567

DIAMOND DRILL LOG

HOLE NO: MC-19
PAGE: 2 of 4
LOGGED: AMM
DATE: MAY '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
44			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA	TYPICAL OF MT CHANCERY AREA. FRAGMENTS: <0.5cm TO 5cm; DARK GREEN-BLACK (CHLORITIC); VERY ANGULAR; SUBJECT TO GHOSTING TO RECORDED OUTLINES; MATRIX: BUFF TO PINKISH, HAS CARBONATE CLAST. PHENOCRYSTS: FELDSPAR, TYPICALLY 2-3mm; PINK ALTERED AND OCCURS IN BOTH MATRIX AND FRAGMENTS. CLAST: MATRIX RATIO ABOUT 60: 40 EXCEPT FOR 45.4 – 56.0. IN THIS INTERVAL THE BRECCIA TEXTURE IS ONLY VARIOUSLY DEFINED FELDSPARS NOT PRESENT. MAY REPRESENT ORIGINAL ANDESITE TEXTURE BEFORE ENHANCEMENT BY FOLIATION.	Rare PINK FELS: 2 MIN. OF FELDSPAR PHENOCRYSTS ONLY							
46												
48												
50												
52												
54												
56					56.0 BUFF/PINK FELS MIN. 3 OF MATRIX AND FELDSPARS							
58								45.0 – 57.5 BROKEN ZONE; QX 2-3. CHLORITIC VEINLETS AND SOME PINK FELS ZONES				
60												
62												
64												
66												
68												
70												
72												
74												
76												
78												
80												
82												
84					3							

19967

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield 563

PROSPECT: Mt Chalmers

HOLE NO: MC-19

PAGE: 3 of 11

LOGGED: KDM

DATE: May '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
86					"	3								
88														
90					89.8									
92					PERVASIVE	4								
94					93.3									
96														
98														
100											100.0			
102														
104														
106														
108														
110														
112														
114										93.0 - 118.0 INTERMITTENT BROKEN ZONE WITH JOINT LEACHING AND OXIDATION				
116				FAULT CONTACT										
118.0					118.0									
120			(Pr?) ANDESITE LAVA.	SIMILAR TO 63-40.4 WITHOUT FLOW BANDING. LIGHT GREY-GREEN TO KHAKI; VERY FINE GRAINED TO GLASSY; SPARSE EVENLY DISTRIBUTED CHLORITISED/ SERICITISED FELDSPAR (?) PHENOCRYSTS; PREDOMINANTLY MASSIVE WITH A JIGSAW FIT (=HYALOCLASTITE?) BRECCIA ZONE (WITH GREEN CLAST MARGIN) 129.0 - 130.0	WEAK PERVASIVE PINK FELSIC ALT.	2				F 118.4; 50 mm; 40° C.A.; SMEARED ZEOLITE + PYR			MAJOR FAULT	99.68
122					"	2								
124														
126														

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HATFIELD

PROSPECT: MT CHAMBERS

569

HOLE NO: MC-19

PAGE: 4 of 11

LOGGED: AMH

DATE: May '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
128					"	2								
130														
132														
134														
136														
138														
140														
142														
144														
146														
148				(SHARP, SLIGHTLY IRREGULAR CONTACT)	"	2								
			149.2		149.2									
150			FELDSPAR PORPHYRIC ANDESITE LAVA BRECCIA	M FOR 40.4 - 118.0. LEAN MATRIX, CLASTS NOT AS WELL DEFINED	CONSPICUOUS PINK FS/Ch ALT. OF FELDSPAR PHENOCRYSTS, MINOR MATRIX ALT.	3								
152														
154				BRECCIA CONTACT OBSCURED BY PROBABLE SHEARING										
			155.7		155.7									
156			(?P?) ANDESITE LAVA	M FOR 118.0 - 149.2	PATCHY PERVASIVE PINK FS/Ch ALT.	3								
158														
160														
162														
164														
166														
168					"	3								

99999

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chamosin

570

HOLE NO: MC-19
PAGE: 5 of 11
LOGGED: MMH
DATE: May 87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
170					"	3	NOT LOGGED. WHITE QUARTZ CALCITE, PINK CHERTY CARBONATE ±Py ±Sph	1-7						
172														
174														
176														
178				GRADATIONAL CONTACT OVER 10cm						F? 179.0: 2.5m BROKEN, LEACHED				
180				179.7 FLOW BANDING.	"	2								
			181.5		181.5									
182			FELDSPAR PHYRIC ANDESITIC LAVA (NOT BRECCIATED)	DARK GREEN - BLACK, WEAKLY FLOW BANDED. DENSELY PACKED LARGE (>2mm) PINK ALTERED FELDSPAR PHENOCRYSTS.	PINK FAINT MS. OF FLD. PHENS; WEAK MATRIX MS.	2								
184														
			186.5		186.5									
186			BASALT?	GREEN - GREY MASSIVE LAVA. NON-PORPHYRITIC, NON-VESICULAR	NO ALS.								PET - BASALT.	
188														
			190.8	SHARP CONTACT NOT TO C.A	190.8									
190			FELDSPAR PHYRIC ANDESITE LAVA BRECCIA.	VERY DISTINCTIVE UNIT CLASTS: DARK GREEN - BLACK, VERY ANGULAR, JIGSAW FIT. MODERATELY TO EXTREMELY FELDSPAR PHYRIC. FELDSPARS ARE WHITE. NO RESORBED PHENOCRYST BOUNDARIES. MATRIX: LIGHT TO DARK GREEN FINE GRAINED CHERTY SEDIMENT (NOT SILICEOUS ALTERATION.) NO PHENOCRYSTS IN MATRIX. CLAST: MATRIX = 70:30 INTERPRETED TO BE A QUENCH BRECCIATED LAVA WITH SEDIMENT INFILL PILLOW FRAGMENTS?	RARE PATCHES OF PINK FAINT ALS	1								
192														
194														
196														
198														
200														
202					-	1								
204														
206														
208					208.3									
210														

59958.0

1. AIMS OF STUDY

The aim of this work has been to determine whether Pb in pyritic rocks from Cambrian rhyolitic volcanics in the Hellyer area is Cambrian or Devonian in origin.

2. SAMPLES

Two pyritic samples, containing 145 and 225ppm Pb, were analysed.

3 TARGET SIGNATURES

The target signatures used are that of the Hellyer mine, Devonian veins from throughout the west coast of Tasmania and pyritic rocks from the Lake Selina deposit. The target signature is defined by ellipses which represent the distribution of the target data (mean + 2xSD, or 95% confidence domains).

4. METHODS

Sample 271234 was received in a coarsely crushed form which was used for the initial analysis. Subsequently the sample was pulverised and analyses 2 and 3 are duplicates of this material. All samples were digested in a 7N nitric + 7N hydrochloric solution prior to ion exchange and electroplating onto Pt electrodes. The samples were analysed on an ISOMASS 54E solid source thermal ionization mass spectrometer in fully automated mode. Precision estimates representing 2 standard deviations about the mean of over 700 analyses of standards are shown in the top left hand corner of the figures presented below.

5. RESULTS

Sample 271234 was analysed in triplicate (points 1, 2 and 3 in Figures 1 and 2) and 271221 in duplicate (points 4 and 5, Figures 1 and 2) (Table 1). Pb in the pyrite pod sample 271234

plots within and adjacent to the Hellyer 95% confidence ellipse on the $^{208}Pb/^{204}Pb$ vs $^{206}Pb/^{204}Pb$ diagram (Figure 1) and adjacent to the ellipse on the $^{207}Pb/^{204}Pb$ vs $^{206}Pb/^{204}Pb$ diagram (Figure 2). On Figure 1 the variation between point 1 and points 2 and 3 is outside the analytical precision indicating possible sample inhomogeneity in the $^{208}Pb/^{204}Pb$ ratio. Pb in sample 271221 plots outside the target ellipse and has higher $^{206}Pb/^{204}Pb$ ratios.

6. DISCUSSION AND CONCLUSION

The isotopic compositions of both samples are consistent with a Cambrian origin but, because of the relatively low Pb contents, some uncertainty exists. The variation from the target signature, especially in sample 271221, can be accounted for if the samples contain about 2 to 3ppm U. The addition of radiogenic ^{206}Pb from the decay of ^{238}U over the past 500 Ma could have changed the isotopic composition from the target signature to their present values.

A comparison of the results with pyrite material from Lake Selina indicates some subtle differences exist between the two groups. On both Figures 3 and 4 most of the Lake Selina data plot on a linear array (also probably produced by the post Cambrian in situ decay of U and Th) which lies closer to the average global Pb evolution (growth) curve than does the data from this study. Such differences probably result from slight variations in the isotopic composition of the source rocks of Pb in the two sets of samples.

The results are also compared with a suite of Devonian veins from throughout the west coast of Tasmania. It is apparent that these veins have Pb isotopic compositions that plot in two clusters on both Figure 5 and 6. One cluster has lower

$^{204}Pb/^{204}Pb$ ratios than the Cambrian target and the other (including the majority of samples from the Queen Hill area) has higher ratios. Except for two low-Pb samples that fall within the Cambrian target, these Devonian data do not overlap the isotopic composition of the pyritic rocks of this study. However, because of the relative heterogeneity of the Devonian data, these two groups cannot be differentiated with any confidence on statistical grounds.

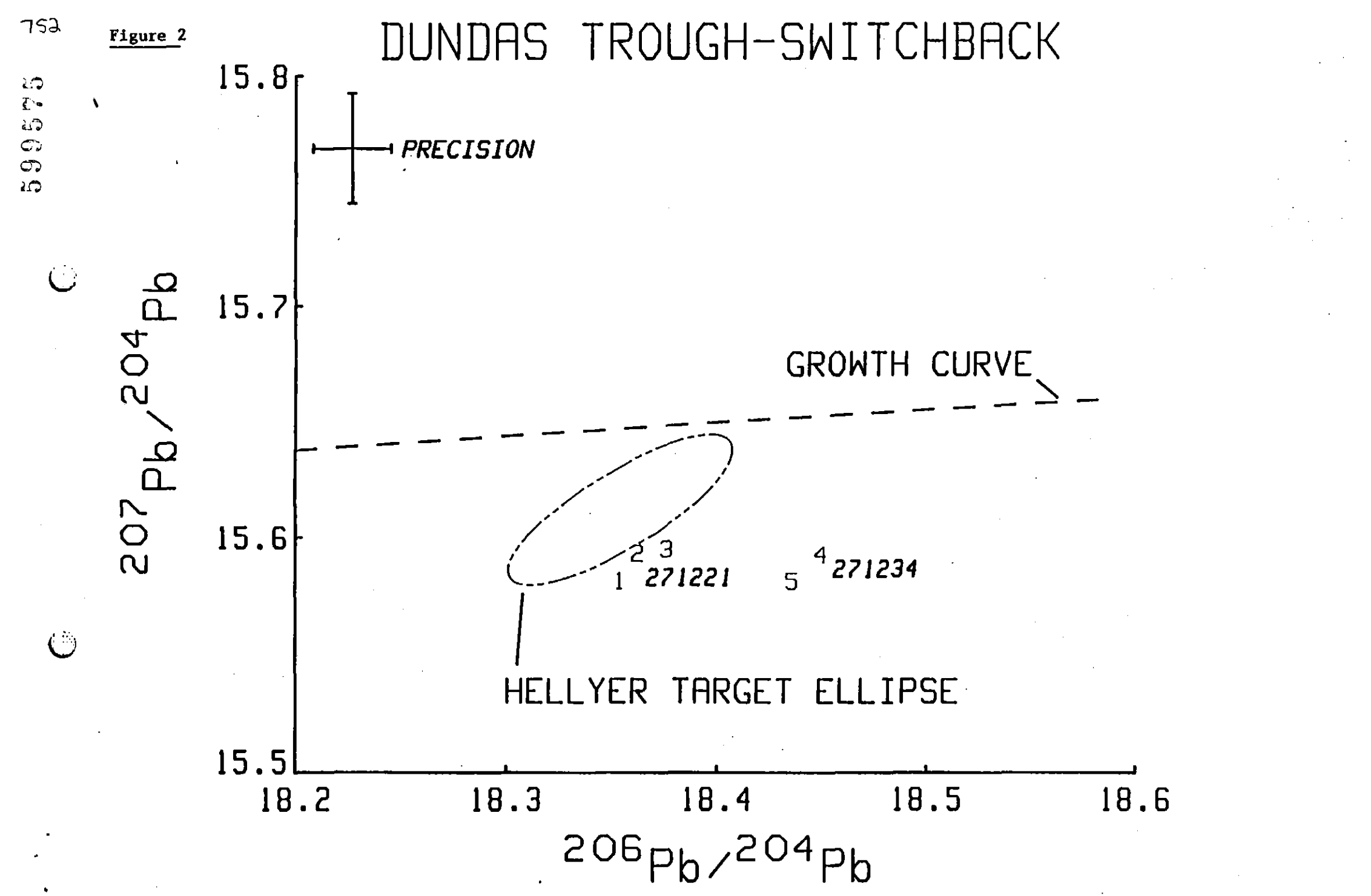
TABLE 1. Pb ISOTOPE COMPOSITIONS OF PYRITIC SAMPLES.

Sample	$\frac{208\ Pb}{206\ Pb}$	$\frac{207\ Pb}{206\ Pb}$	$\frac{206\ Pb}{204\ Pb}$	$\frac{207\ Pb}{204\ Pb}$	$\frac{208\ Pb}{204\ Pb}$	Pb(ppm)
271221	2.0811	0.8489	18.354	15.581	38.197	145
271221	2.0761	0.8492	18.363	15.593	38.122	145
271221	2.0757	0.8486	18.376	15.595	38.144	145
271234	2.0721	0.8451	18.450	15.593	38.231	225
271234	2.0719	0.8451	18.436	15.581	38.197	225

Boundary Prospect. @ 387800 E / 5390400N ± 400.

CSIRO

Figure 2


DUNDAS TROUGH-SWITCHBACK
15.8
15.7
15.6
15.5
PRECISION
GROWTH CURVE
1 271221
2 3
4 271234
5
HELLYER TARGET ELLIPSE
18.2
18.3
18.4
18.5
18.6
207Pb/204Pb
206Pb/204Pb

753 Figure 3

599576

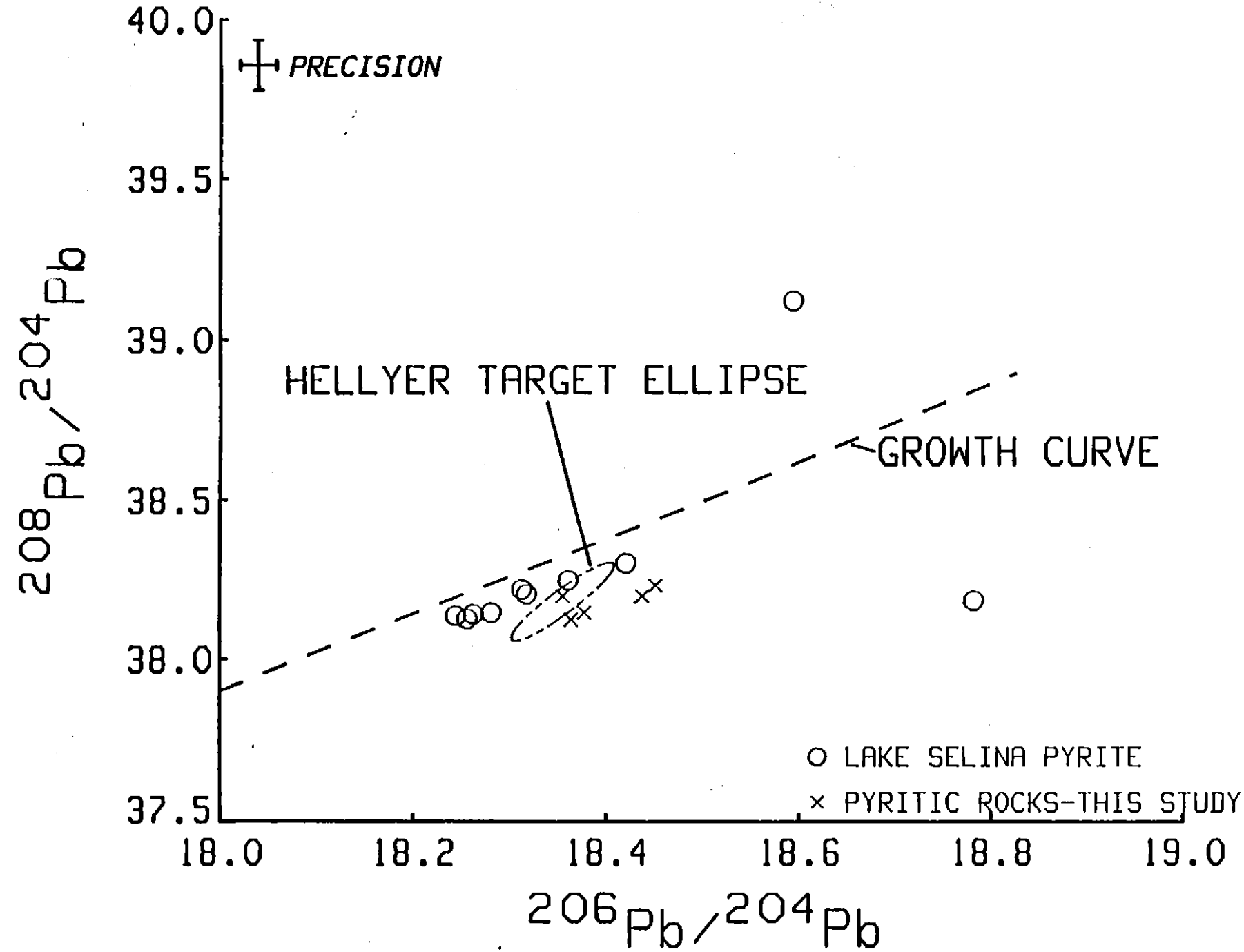


Figure 5

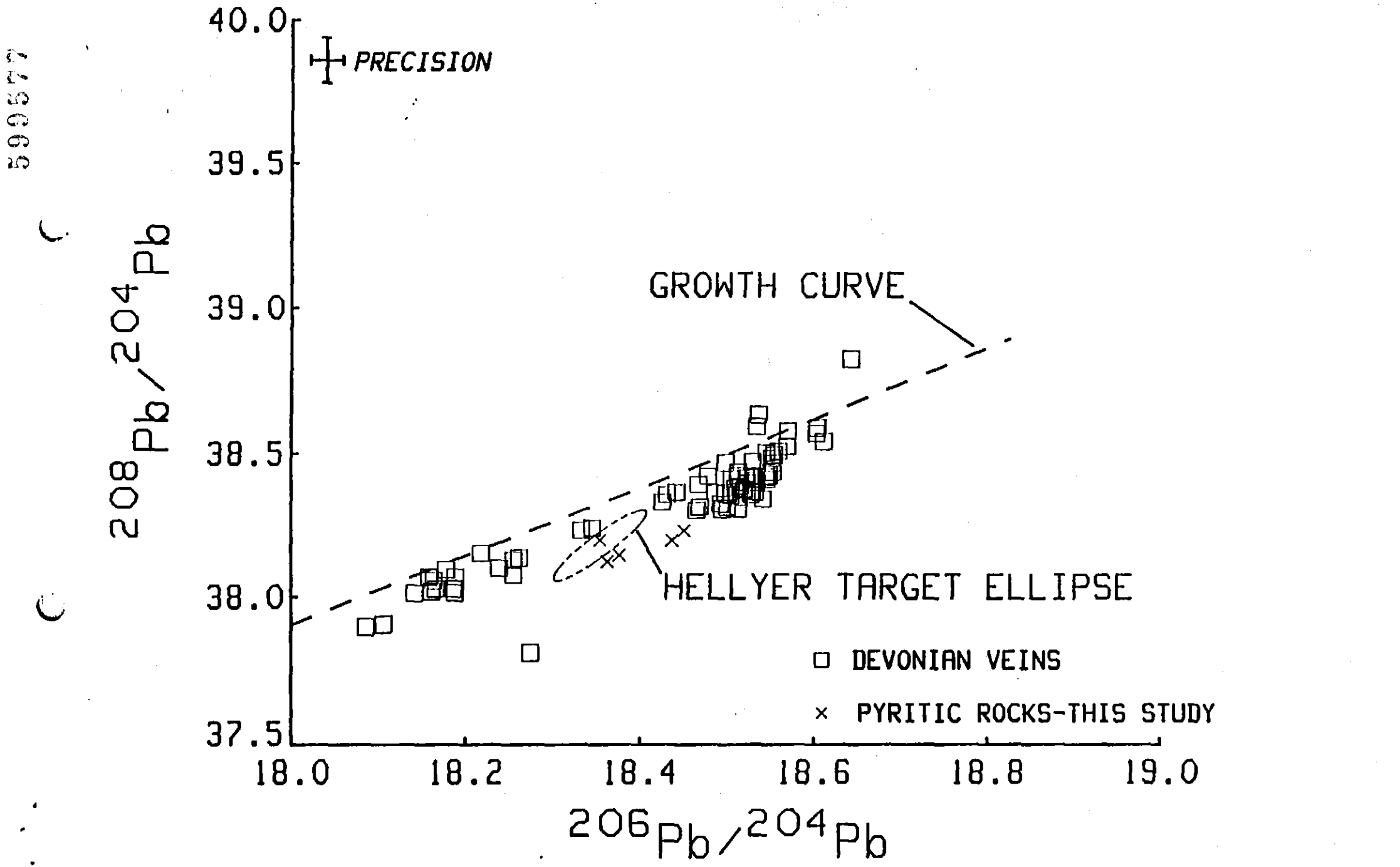
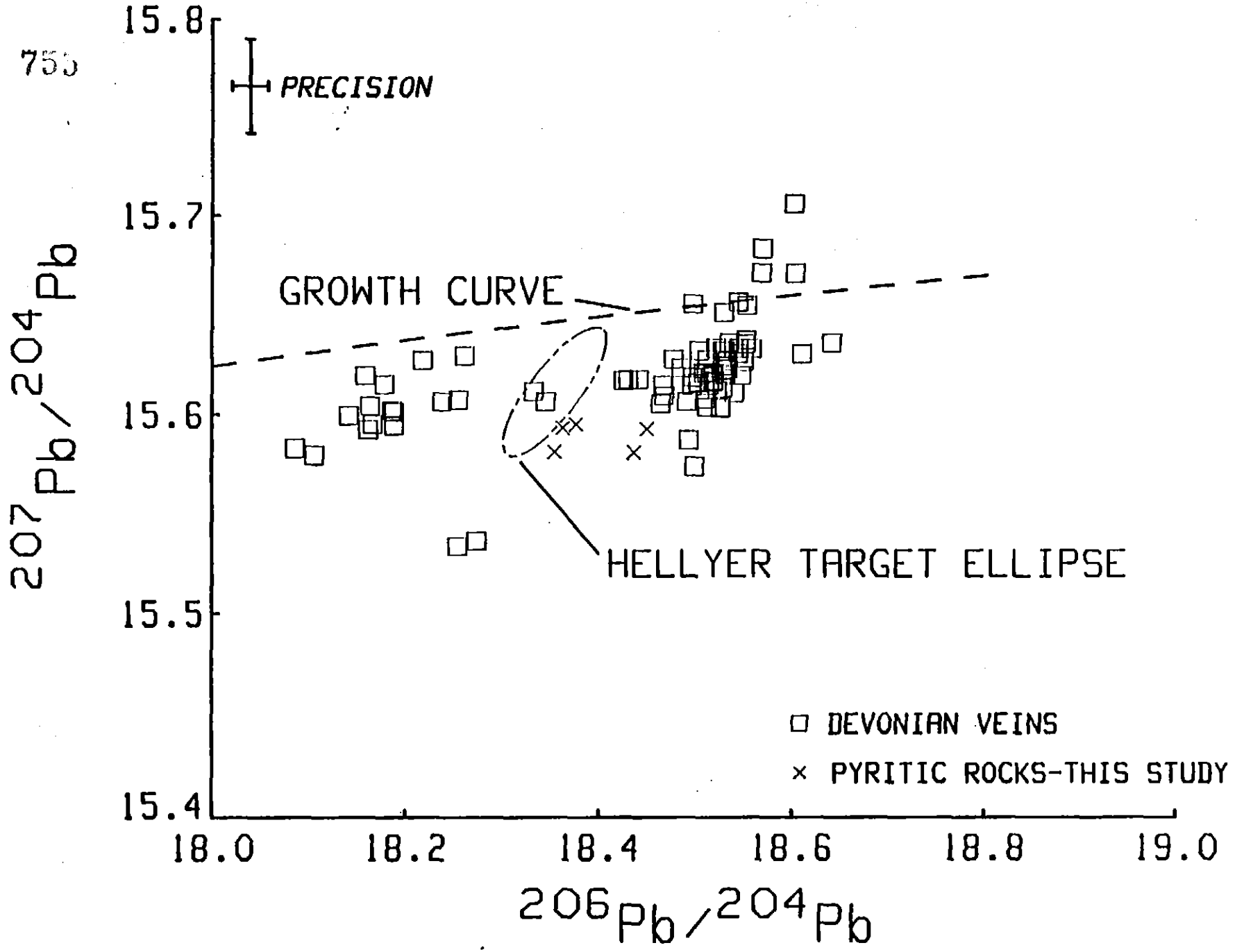

40.0
39.5
39.0
38.5
38.0
37.5
PRECISION
GROWTH CURVE
HELLYER TARGET ELLIPSE
DEVONIAN VEINS
PYRITIC ROCKS-THIS STUDY
18.0
18.2
18.4
18.6
18.8
19.0
208Pb/204Pb
206Pb/204Pb

Figure 6

899578

755



APPENDIX 28.

586

599722

PAGE / OF /

CORE GRIND SAMPLING - MACKINTOSH / HATFIELD

HOLE No. MC-19

DATE 12·5·87

No.	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST	SAMPLE NUMBER	INTERVAL	ELEMENTS REQUIRED	ST
1	396736	6·3 - 16·0			396768	290·0 - 300·0		
2	37	16·0 - 26·0			69	300·0 - 310·0		
3	38	26·0 - 40.4 ~~36·0~~			70	310·0 - 315·3		
4	39	40·4 - 50·0			71	315·3 - 325·0		
5	40	50·0 - 60·0			72		X STD 3	*
6	41	60·0 - 70·0			73	325·0 - 335·0		
7	42	70·0 - 80·0			74	335·0 - 345·0		
8	43	80·0 - 90·0			75	345·0 - 355·0		
9	44	90·0 - 100·0			76	355·0 - 364·6		
10	45	100·0 - 110·0			77	364·6 - 374·6		
11	46	110·0 - 118·0			78	374·6 - 382·6		
12	47	118·0 - 128·0			79	382·6 - 392·0		
13	48	128·0 - 138·0			80	392·0 - 402·0		
14	49	138·0 - 149·2			81	402·0 - 412·0		
15	50	149·2 - 155·7			82	412·0 - 422·0		
16	51	155·7 - 165·0			83	422·0 - 432·0		
17	52	165·0 - 175·0			396784	432·0 - 442·2		
18	53	175·0 - 181·5						
19	54		X STD 3	*				
20	* 55	181·5 - 186·5						
21	56	186·5 - 190·8						
22	57	190·8 - 200·0						
23	58	200·0 - 210·0						
24	59	210·0 - 220·0						
25	60	220·0 - 230·0						
26	61	230·0 - 236·2						
27	62	236·2 - 239·5						
28	63	239·5 - 250·0						
29	64	250·0 - 260·0						
30	65	260·0 - 270·0						
31	66	270·0 - 280·0						
32	67	280·0 - 290·0						

587

ANALABS

599723

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04544

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
2398	

DATE RECEIVED	RESULTS REQUIRED
11/06/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	24/06/87	1	49

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	396736/84	CG Prep: 013,016							Cu,Pb,Zn,Ag,Ni/101,As/114		
	396736/84	CG							Ba,Cr,Zr,Ti/401		
	396736/84	CG							Au/309		

RESULTS TO

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

RESULTS TO

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

REMARKS

MC-19
bore 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	Mo	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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599724

588

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04544	24/06/87	2398	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	63-160 396736	35	10	80	0.5	10	9	1200	<5	200
2	16.0-26.0 396737	5	10	50	0.5	10	15	1100	15	210
3	26-40.4 396738	10	10	45	<0.5	10	13	780	<5	210
4	40.4-50 396739	5	<5	85	<0.5	20	6	433	45	190
5	50-60 396740	10	<5	80	<0.5	15	3	500	<5	190
6	60-70 396741	5	<5	70	<0.5	15	6	620	<5	190
7	70-80 396742	5	<5	70	<0.5	15	3	630	<5	180
8	80-90 396743	5	5	60	<0.5	15	4	610	7	200
9	90-100 396744	10	5	55	<0.5	10	11	2250	<5	220
10	100-110 396745	5	10	70	<0.5	10	3	520	6	200
11	110-118 396746	5	5	60	<0.5	10	3	640	<5	200
12	118-128 396747	5	5	70	0.5	10	11	670	10	200
13	128-138 396748	15	10	60	<0.5	10	18	560	<5	170
14	138-149.2 396749	30	25	80	<0.5	10	37	1150	5	200
15	149.2-155.7 396750	15	10	105	<0.5	20	18	1250	20	180
16	155.7-165 396751	15	15	80	<0.5	15	30	1150	6	180
17	165-175 396752	20	15	85	<0.5	35	50	1200	100	160
18	175-184.5 396753	25	10	85	<0.5	20	15	910	10	170
19	396754 *STD 3	120	180	2250	<0.5	260	19	1100	890	80
20	184.5-186.5 396755	5	5	85	<0.5	15	11	1250	<5	230
21	186.5-190.8 396756	45	10	140	0.5	90	6	850	250	110
22	190.8-200 396757	45	20	125	<0.5	20	20	940	15	160
23	200-210 396758	30	125	450	<0.5	20	20	1150	15	170
24	210-220 396759	25	55	300	<0.5	10	22	1050	9	170
25	220-230 396760	25	20	100	<0.5	20	13	920	7	180

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
	23.3.08.04544	24/06/87	2398	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	230-236.2 396761	35	20	150	<0.5	50	22	960	160	140
2	236.2-239.5 396762	30	10	80	0.5	25	12	1200	9	150
3	239.5-250 396763	20	30	250	0.5	15	20	1150	9	170
4	250-260 396764	25	20	190	<0.5	15	16	1250	10	160
5	260-270 396765	30	20	240	<0.5	15	16	1100	6	160
6	270-280 396766	35	25	280	0.5	15	20	990	8	170
7	280-290 396767	20	15	130	0.5	20	25	940	10	170
8	290-300 396768	25	10	105	0.5	15	24	910	10	180
9	300-310 396769	5	5	65	0.5	15	8	1300	30	180
10	310-315.3 396770	15	15	70	<0.5	15	41	890	6	180
11	315.3-325 396771	25	15	80	<0.5	30	19	740	8	180
12	396772 *SD3	120	190	2300	<0.5	265	16	1100	860	90
13	325-335 396773	10	5	70	0.5	25	9	600	25	180
14	335-345 396774	5	10	85	<0.5	15	5	770	<5	190
15	345-355 396775	10	<5	65	<0.5	10	10	440	5	200
16	355-364.6 396776	35	5	90	<0.5	20	6	100	20	170
17	364.6-374.6 396777	5	5	70	0.5	15	5	990	15	160
18	374.6-382.6 396778	5	5	80	0.5	15	3	670	15	160
19	382.6-392 396779	5	<5	70	<0.5	20	2	640	10	160
20	392-402 396780	5	10	70	0.5	10	5	1100	<5	170
21	402-412 396781	5	5	80	0.5	15	4	620	<5	170
22	412-422 396782	5	10	70	0.5	15	4	980	7	150
23	422-432 396783	10	10	80	0.5	15	3	1200	<5	150
24	432-443.2 396784	20	10	90	0.5	20	5	1650	8	160
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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599726

590

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04544	24/06/87	2398	3 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
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	5	1	10	5	5
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
24	METHOD	101	101	101	101	101	114	401	401	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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599727

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04544	24/06/87	2398	4 OF 6

TUBE No.	SAMPLE No.	Ti	Au	Zr/Ti	
1	396736 6-3	1400	<0.008	0.143	2(
2	396737	1350	<0.008	0.155	15
3	396738 40-4	1300	<0.008	0.161	2(
4	396739 40-4	2450	<0.008	0.077	45
5	396740	2300	<0.008	0.083	25
6	396741	2200	<0.008	0.086	25
7	396742	2150	<0.008	0.084	25
8	396743	2200	<0.008	0.091	7
9	396744	2250	<0.008	0.098	25
10	396745	2100	<0.008	0.095	6
11	396746 118-0	2400	<0.008	0.083	25
12	396747 118-0	2050	<0.008	0.097	10
13	396748	1850	<0.008	0.092	25
14	396749 149-2	2100	<0.008	0.095	5
15	396750 149-2 153-7	2000	<0.008	0.09	2-
16	396751 153-7	2150	<0.008	0.084	6
17	396752	2050	<0.008	0.078	100
18	396753 181-5	2050	<0.008	0.083	10
19	396754	2350	<0.008	0.034	
20	396755	2550	<0.008	0.09	25
21	396756	2100	<0.008	0.052	250
22	396757	2700	<0.008	0.059	15
23	396758	2850	<0.008	0.06	15
24	396759	2850	<0.008	0.06	9
25	396760	2950	<0.008	0.061	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

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

599728

592

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04544	24/06/87	2398	5 OF 6

TUBE No	SAMPLE No	Ti	Au	Zr/Ti						
1	396761	2500	<0.008	0.056	16					
2	396762	3450	<0.008	0.043	9					
3	396763	2950	<0.008	0.058	9					
4	396764	2850	<0.008	0.056	10					
5	396765	2950	<0.008	0.054	6					
6	396766	2900	<0.008	0.059	8					
7	396767	2950	<0.008	0.058	10					
8	396768	3150	<0.008	0.057	10					
9	396769	2550	<0.008	0.07	30					
10	396770	2900	<0.008	0.062	6					
11	396771	2300	<0.008	0.078	8					
12	396772	2300	<0.008	0.039						
13	396773	2350	<0.008	0.077	25					
14	396774	2300	<0.008	0.083	<5					
15	396775	2400	<0.008	0.083	5					
16	396776	3000	<0.008	0.057	20					
17	396777	2750	<0.008	0.058	15					
18	396778	2950	<0.008	0.054	15					
19	396779	2950	<0.008	0.054	10					
20	396780	3000	<0.008	0.057	<5					
21	396781	2950	<0.008	0.058	<5					
22	396782	2700	<0.008	0.056	7					
23	396783	2700	<0.008	0.056	<5					
24	396784	2850	<0.008	0.056	8					
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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593

599729

ANALABS

A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04544	24/06/87	2398	6 OF 6

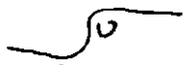
TUBE No.	SAMPLE No.	Ti	Au							
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	50	0.008							
23	UNITS	PPM	PPM							
24	METHOD	401	309							
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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APPENDIX 29.

595 599731

mple No	Location (see 1:10000 map)	Description	Trace element
11 05	Track to southern syncline S.W. Mt Chantes. Fp. A.1 — P.K. 'Felsic tuff'	Fp. A.1	yes
11 06	Track to southern syncline S.W. Mt Chantes	greywacke	no
11 902	HEC line 3rd knoll – top of straight heading to valley N of Mt Block. Central Belt core S.W. Mt Chantes.	Acid Feldspar phyric rocks of the Central Sequence.
11 03	Quarry 3 knolls S. Central Belt core S.W. Mt Chantes.	
71 04	 2nd knoll HEC line. Central Belt core S.W. Mt Chantes	
1905	 knoll HEC line SW Mt Chantes	
11 06	Basalt? on contact with Bsh Murchison Highway — close to SW dolerite sheet.	Basalt	yes

596

599732
14 MAY REC'D

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. D.J. Jack
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

12th May, 1986

REPORT CMS 86/5/4

YOUR REFERENCE:	Letter dated 1.5.1986
DATE RECEIVED:	2nd May, 1986
SAMPLE NOS.:	7 Samples
SUBMITTED BY:	D.J. Jack
WORK REQUESTED:	Petrology

for

H.W. Fender, M. Sc.

Copy to:
The Chief Geologist
Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 86/5/4

A suite of seven rock chip samples was received for routine petrological examination. Representative thin-sections were prepared and examined together with respective offcuts, with feldspar and carbonate stain tests performed as warranted.

Summary

Four rocks (271902 - 271905 inclusive) represent devitrified and altered rhyolitic volcanics. These are rather typical of the Central sequence of Mount Read Volcanics and may be contrasted with the dominantly basic to intermediate facies comprising the bulk of the "M.R.V." sequences.

Sample 271205 represents a rebrecciated and extensively silicified dacitic (trend rhyodacitic) breccia. Sample 271906 is a thoroughly quartz-chlorite-albite-altered chromiferous basalt. The sediment (271206) may be categorised as a carbonaceous pyritic micaceous siltstone.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
271205 (T.S. 55926)	Dacitic Breccia. Fine to microcrystalline quartz with subordinate to minor chlorite. Disseminated phenocrystal albite, subordinate quartz, minor albite-quartz-pseudomorphed K-feldspar.	Random submillimetric to centimetric, variably porphyritic, felsitic, flow-banded clasts. Corrosive/replacive quartz matrix.	Leucoxenised opaques. Minor clots, films of degraded/Mn-oxidised carbonate, traces oxidised pyrite.	Relict features consistent with a dacitic lava breccia. Reflects marked secondary "crackle" brecciation and fracture-controlled silicification.
271206	Micaceous Siltstone. Framework of silt- to fine sand-sized muscovite flakes, subordinate quartz grains. Matrix of semi-sericitic white mica, closely intergrown chlorite, semi-pervasive carbonaceous matter.	Weakly banded, mildly low-angle discordantly sheared, slightly fine sandy argillaceous siltstone/silty shale.	Thinly disseminated detrital zircons, leucoxenic semi-opaques. Minor oxidised ultra-fine syngenetic pyrite.	Carbonaceous, weakly (oxidised) pyritic, micaceous, quartzose siltstone, "grading" into a silty shale. Low-grade metapelite-derived; devoid of tuffaceous components.
271902	Felsite. Disseminated corroded quartz, minor sericitic albite, silicified K-feldspar phenocrysts in a groundmass of felsitic quartz with included sericitic feldspar microlites. Frequent veinlets of chalcedonic quartz.	Felsitic; variably porphyritic, weakly banded. Chalcedony-veined to brecciated/chalcedony-cemented.	Leucoxenised opaques, rare zircons.	Devitrified, quartz-sericite-altered rhyolitic obsidian. Chalcedonic quartz-healed fracturing appears devitrification-induced. Weakly sheared.
271903	Rhyolitic Tuff. Felsitic quartz and partly degraded (kaolinitic) K-feldspar with disseminated albite phenocrysts/phenocrystal clusters, minor corroded quartz phenocrysts. Frequent quartz veinlets, minor sericite.	Irregularly quartz-veined, felsitic. Lava-like, but vitric-crystal fragmental in detail.	Leucoxenised opaques. Semi-pervasive secondary Fe-pigmentation. Minor fine-scale vugs of barite.	Devitrified, extensively silicified rhyolitic fragmental. Fabric is heterogeneous, non-eutaxitic, but with microscale features consistent with a welded ignimbrite.
271904	Brecciated Rhyolite. Felsitic and disseminated phenocrystal K-feldspar with minor phenocrystal quartz, semi-pervasive chlorite, minor sericite. Irregular veins and replacements of quartz and chlorite.	Flow-banded to brecciated perlitic-felsitic. Irregular chloritic quartz aggregates.	Leucoxenised opaques. Sporadic clots of limonite.	Textural detail obscured by irregular zones of brecciation/chloritic silicification. Relict features consistent with a glassy clastic lava (tuff lava).
271905	Rhyolitic Tuff. Felsitic quartz and K-feldspar with disseminated sanidine, albite, minor quartz crystal fragments. Irregular poikilitic clots of calcite and chlorite. Minor sericite.	Contorted to brecciated, eutaxitic, with a felsitic devitrification overprint. Weakly stressed.	Leucoxenised opaques, rare zircons. Traces of adularia in secondary quartz aggregates.	Devitrified, quartz-calcite-chlorite (-adularia)-altered rhyolitic vitric-crystal tuff. Flow-brecciated/welded ignimbritic characteristics.
271906 (T.S. 55932)	Amygdaloidal Basalt. Frequent quartz pseudomorphed pyroxene phenocrysts, chlorite amygdales, in a groundmass of quartz-albite pseudomorphed plagioclase laths with a chlorite mesostasis. Frequent quartz veinlets.	Flow-structured, strongly porphyritic-amygdaloidal, basaltic. Weakly stressed veinlets.	Leucoxenised opaques, fine-grained chromite.	Thoroughly quartz-chlorite(-albite)-altered/irregularly quartz-veined and mildly stressed, chromiferous amygdaloidal basalt.

599734

RAB 599 MACK/HAT 599735

Aberfoyle Resources Limited

Incorporated in Victoria

EXPLORATION DIVISION

1st Floor
123 Camberwell Road
Hawthorn East
Victoria 3123
Australia
Telephone: (03) 82 2226
Facsimile: (03) 813 1086
Telex: AA38646

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION
39 RIVER ROAD WIVENHOE
(P.O. BOX 952 BURNIE)
TASMANIA 7320
PHONE (004) 31 6333

19th June, 1986

Mr. H. W. Fander,
Central Mineralogical Services,
39 Beulah Road,
NORWOOD. S.A. 5067

Dear Wally,

Please section and describe the following rocks :

Sample No.	Description	Locations
~~271231~~ 271232	Pyritised, silicified and brecciated volcanic. Silica, sphalerite veining. Red alteration.	Boundary Quarry.
271235	Pyritised, silicified and brecciated volcanic. Silica veins coarse black sphalerite.	
271236	White silica veined breccia-scree	
271237	Pink silicified Felsite - chert	Boundary Prospect Costean 2 W. of rd.
271238	Pink silicified Felsite	
271239	Pink siliceous rhyolite	
271240	Green volcanic, pink feldspar phenocrysts.	
271243	Grey siliceous chert - felsite breccia.	Base of round hill.
271244	Red and black coarsely crystallised rhyolitic, Intrusive? Silicified - K feldspar alteration? (similar to 271905).	Top of round hill.

600

19th June, 1986 2.

271250	Quartzite ridge	40m N of power pole E of round hill.
271256	Possible basalt	Quarry Que River access road.
271257	Green and white rhyolite volcanic	near pulp gate north of Longyear camp.
271258	Yellow orange altered rock.	1st grey power pole north of powerline Y junction.
271259	Sericite carbonate rock	Float at grey power pole at Y junction.

Please determine whether any chlorite in 271257, 271258, 271259 is Fe or Mg rich. Please also categorise any carbonate as calcite dolomite or ankerite.

Regards,

Doug Jack

Doug Jack,
Geologist.

599737

601

02 JUL RECD

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30th June, 1986

REPORT CMS 86/6/6

YOUR REFERENCE:	Letter dated 19.6.1986
DATE RECEIVED:	20th June, 1986
SAMPLE NOS.:	14 Samples
SUBMITTED BY:	D.J. Jack
WORK REQUESTED:	Petrology

for

H.W. Fander, M. Sc.

Copy to:
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602

REPORT CMS 86/6/6

Fourteen rock chip samples of variably weathered rocks were 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

This suite comprises entirely extensively altered intermediate to acid volcanics. Finer details of some rocks are obscured by alteration, mild shearing and weathering effects. On the basis of relict features, however, this suite is dominated by dacitic lavas and tuffs with subordinate andesitic types.

These rocks exhibit essentially pervasive sericite-quartz alteration assemblages, variably complexed by albite, chlorite, extensively degraded and ferruginised carbonate, and traces of partly oxidised sulphide. Dacitic rocks tend to be relatively quartz-veined and silicified, and include devitrification-induced and "tectonic" quartz-healed breccia facies.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
271232 (T.S. 56153)	Amygdaloidal Dacite. Sparse silicified feldspar, corroded quartz, ferruginised clay-pseudomorphed ferromagnesian phenocrysts, sporadic quartz amygdales in a matrix of ferruginised clay-stained quartz. Irregular sericitic-pyritic quartz vein.	Amygdaloidal, weakly porphyritic, flow-structured, felsitic. Mildly stressed.	Frequent microscale quartz veinlets. Leucoxenised opaques. Minor oxidised and supergene-altered chalcopyrite.	Thoroughly silicified(-sericitised) felsitic-devitrified amygdaloidal dacitic characteristics. Marked secondary ferruginisation of sericite Pyrite-chalcopyrite-bearing vein is stressed.
271235	Brecciated Dacite. Clasts of silicified/variably kaolinitic, variably pyritic lava (sim. to 271232) in a matrix of fine to microcrystalline and chalcedonic quartz, with interspersed clots of pyrite. Minor late quartz veinlets.	Random angular submillimetric to centimetric clasts; mildly stressed, semi-crustiform matrix.	Minor relics of sericite, traces sphalerite, supergene altered chalcopyrite. Leucoxenised opaques, rate chromite.	Close affinities with 271232, similarly altered and weathered; relatively fractured/quartz-veined and mineralised in comparison.
271236	Dacitic Breccia. Clasts of strongly silicified/weakly sericitic felsic lava in a matrix of fine to microcrystalline and chalcedonic quartz with minor semi-sericitic white mica, interspersed clots of kaolin.	Similar to 271235; relatively strongly quartz-amygdaloidal, subround clasts.	Leucoxenised opaques.	Interpreted as a devitrification-induced breccia. Matrix is cavity-filling rather than fracture-infill. Relatively siliceous, weakly sericitic, non-pyritic alteration.
271237	Amygdaloidal Dacite. Felsitic and sericite-stained secondary quartz with thinly disseminated albitised plagioclase and corroded quartz phenocrysts, sporadic kaolin-quartz amygdales, frequent sericite-quartz veinlets.	Porphyritic, amygdaloidal, weakly flow-structured felsitic; incipiently stressed.	Leucoxenised opaques, secondary Fe-stainings.	Affinities with 271235, 271236 and particularly 271232. Similarly altered, but unmineralised.
271238	Amygdaloidal Dacite. Variably sericite-stained quartz with thinly disseminated sericitic albitised plagioclase and corroded quartz phenocrysts; sporadic quartz amygdales, minor sericitic quartz veinlets.	Amygdaloidal, weakly flow-structured, porphyritic felsitic. Weakly stressed.	Leucoxenised opaques. Minor traces chlorite. Minor secondary Fe-stainings. Trace oxidised pyrite.	Close affinities with 271232 and 271237. Extensively silicified and sericite-quartz-veined; incipiently pyrite-mineralised.
271239	Amygdaloidal Dacite. Variably kaolin-stained microcrystalline-felsitic quartz with disseminated quartz amygdales, albitised/weakly sericite-stained plagioclase phenocrysts, minor corroded quartz microphenocrysts.	Flow-structured, porphyritic, amygdaloidal, microfelsitic. Locally brecciated/quartz-healed.	Leucoxenised opaques. Sporadic veinlets of quartz, ferruginised clay, degraded carbonate. Trace oxidised pyrite.	Relatively flow-structured felsitic-devitrified dacite with conspicuous flow-orientated quartz amygdales. Incipiently pyrite-mineralised.
271240	Dacitic Tuff. Clasts of extensively sericitised/montmorillonite-stained felsic lava, disseminated albitised plagioclase, minor corroded quartz grains in a sericitic/montmorillonite-stained microfelsitic matrix.	Flow-structured lithic-crystal fragmental; vaguely eutaxitic/flow-brecciated matrix.	Leucoxenised opaques, secondary Fe-stainings (partly after montmorillonite.	Interpreted as a welded ignimbritic lithic-vitric-crystal tuff on relict textural grounds. Greenish colouration reflects montmorillonitic clay.
271243	Pelitic Ash. Microcrystalline albite with minor intergrown quartz, minor sericite. Sporadic irregular clots of partly degraded/Fe-stained montmorillonite. Sporadic quartz veinlets.	Weakly banded, vaguely relict silty vitroclastic. Locally brecciated/cherty quartz-matrixed.	Fine silt-sized clastic leucoxenic semi-opaques. Minor fine sand-sized quartz, feldspar grains.	Devitrified/albitised pelitic vitric ash with very well-sorted distal characteristics and felsic-intermediate acid ("dacitic") affinities.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
271244	Dacitic Tuff. Variably sericitic/chlorite- and limonitic degraded carbonate-stained lava clasts, albitised plagioclase and minor corroded quartz grains in a similarly altered microcrystalline quartzofeldspathic matrix.	Analogous to 271240. Weakly stressed.	Leucoxenised opaques. Minor quartz(-albite) amygdales. Minor relics carbonate (Fe-calcite).	Close affinities with 271240; flow-structured/brecciated dacitic welded ignimbritic lithic-vitric-crystal tuffaceous characteristics.
271250	Felsite. Sparse quartz-pseudomorphed feldspar and minor corroded quartz phenocrysts in a groundmass of felsitic and sericite-stained feldspar-pseudomorphous quartz. Minor quartz veinlets.	Weakly porphyritic, crudely banded, felsitic. Weakly stressed.	Leucoxenised opaques. Traces oxidised carbonate. Minor clots, stringers of oxidised pyrite.	Devitrified/quartz-sericite-altered obsidian. Rhyolitic in comparison with 271232-244 dacites.
271256	Amygdaloidal Andesite. Sparse quartz-chlorite-pseudomorphed pyroxene, frequent albitised plagioclase phenocrysts, sporadic chlorite-quartz amygdales in a chloritic/weakly sericitic feldspar-microlitic groundmass.	Strongly porphyritic, weakly amygdaloidal, flow-structured (subtrachytic).	Leucoxenised opaques, rare chromite. Minor chloritic quartz veinlets.	Chlorite-quartz-sericite-albite-altered andesitic lava.
271257	"Breccia". Variably degraded/kaolinised sericite and microcrystalline quartz in varying proportions with minor clots and films of (Fe-)chlorite. Minor corroded phenocrystal quartz grains.	Lapilli-grade, moulded lithic fragmental; mildly sheared.	Conspicuous ultrafine leucoxenised opaques.	Finer detail obscured by weathering effects. Includes andesitic and subordinate dacitic clasts. Apparently a xenolithic flow breccia. Thoroughly altered.
271258	Dacitic Tuff. Sericite and microcrystalline quartz with disseminated partly leached sericite pseudomorphs after feldspar crystals/crystal fragments. Minor corroded quartz crystals.	Flow-structured, microfelsitic, variably lithoclastic, with sporadic fiamme. Incipiently sheared.	Leucoxenised opaques, traces of chromite. Secondary limonitic Fe-stainings.	Devitrified quartz-sericite-altered dacitic ignimbritic tuff; essentially a eutaxite (vitric tuff) with subordinate/variable lithic-crystal components.
271259 (T.S. 56166)	Amygdaloidal Andesite. Sericite with subordinate intergrown microcrystalline quartz. Disseminated sericite-pseudomorphed feldspar, subordinate quartz-pseudomorphed ferromagnesian phenocrysts, quartz-sericite amygdales.	Relatively sheared/phyllitic. Relict semi-felsitic amygdaloidal porphyritic ("andesitic").	Leucoxenised opaques, traces of chromite. Secondary Fe-stainings.	Thoroughly sericite-quartz-altered, relatively sheared lava with relict andesitic characteristics. Weakly intraclastic/cognate xenolithic (flow-brecciated).

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605

Boundary Prospect

Sample No.	Sheet No.	Co-ordinates	Description
271401 P	NN	3000N 2190E	bedded tuff-sediment
271402 P	NN	3000N 2270E	gy felsite
271403 P	NN	3235N 2280E	bedded tuff-sediment
271404 P	NN	2730N 2115E	Fg Fp R
271405 P	NN	2775N 2100E	gy felsite
271407 P	NN	2500N 2040E	wth or q por R
271408 P	NN	3205N 2050E	or bedded sediment
271409 P	NN	3135N 2040E	bleached grey tuff-sediment, ripple marks
271410 G, P	NN	2880N 1925E	black vtr tuff vug of Py (us?)
271411 P	PP	3940N 2670E	pk Fp t?
271412 P	PP	3830N 2583E	bedded tuff-sediment
271413 P	NN	3690N 2450E	gn vlc @ pk Fp
271414 P	NN	3650N 2400E	bd gy slt (Felsite)
271415 P	NN	3530N 2300E	fg rd + gn Ss - vlc
271416 P	NN	3460N 2235E	bk bd tuff-sediment
271417 P	NN	3000N 3100E	rd felsite
271418 P	MM	3000N 3425E	rd bk felsite
271419 G, P	MM	3000N 3900E	shd gy felsite
271420 G	MM	3000N 3950E	R/Fe
271421 P	MM	3000N 4620E	gy bk Mic Ss
271247 P	CC	3500N 4450E	fp gy l

HAT. 599742

606

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22nd December, 1986

REPORT CMS 86/11/12

YOUR REFERENCE:	Letter dated 10.11.1986
DATE RECEIVED:	14th November, 1986
SAMPLE NOS.:	20 Samples
SUBMITTED BY:	D.J. Jack
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

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BOUNDARY
PROSPECT
ROCK CHIPS.

607

REPORT CMS 86/11/12

Twenty rock chip samples from the Boundary Prospect of the Que-Hellyer area were received for routine petrological examination. Representative thin-sections were prepared and examined in transmitted and oblique incident light. Microscopic examinations were supplemented by stain tests, where warranted. Petrological data is summarised in the attached tabulated descriptions which include interpretative comments.

This suite is dominated by sedimentary rocks, particularly sub- to distal tuffaceous (typically vitric-ashy) types. These include non-volcanic components and grade into non-tuffaceous types which are relatively quartzose and micaceous.

Subordinate igneous rocks include andesitic and dacitic volcanics and a variety of felsitic-devetrified intermediate-acid phases considered as intrusive in part.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
271401 (T.S. 56945)	Pelitic Ash. Crypto-to microcrystalline albite with disseminated to conspicuous silt-sized clastic albite grains, muscovite flakes, minor quartz grains. Minor carbonaceous matter; thinly dispersed clots of calcite.	Fine silty clastic with pervasive ill-defined microshards, sub- to millimetric-scale banding.	Fine silt-sized clastic leucoxenic semi-opaques. Traces of chlorite, ultrafine pyrite, secondary limonite.	Fine silty clastic composite of detrital and distal vitric ash components (devitrified/albitised); evenly sized and probably subaerially transported/subaqueously deposited.
271402	Pelitic Ash. Fine silt-sized detrital white mica flakes, minor albite and quartz grains in a matrix of sericitic/chlorite-stained crypto- to microcrystalline albite. Pervasive clots of dolomite; minor late chloritic microfractures.	Analogous to 271401; relatively massive (poorly bedded) and incipiently sheared in comparison.	Conspicuous clastic leucoxenic semi-opaques, traces carbonaceous matter, rare ultrafine pyrite. Minor clots of calcite.	Close affinities with 271401, distinctly argillaceous-pelitic in comparison and partly sericitised/incipiently calcitised. Only incipiently carbonaceous and pyritic.
271403	Pelitic Ash. Silt-sized detrital white mica flakes, minor splintery quartz and albite grains in a matrix of partly argillised crypto- to microcrystalline albite. Minor degraded/ferruginised ?dolomite.	Very similar to 271401, relatively banded/incipiently shale-parted in comparison. Essentially unsheared.	Conspicuous leucoxenic semi-opaques, traces of carbonaceous matter, minor traces of chlorite.	Similar to 271401 and particularly 271402. Vitroclastic material largely obscured by argillic alteration. Traces only of degraded carbonate.
271404	Psammopelitic Ash. Silt- to (minor fine sand-sized splintery quartz grains, minor muscovite flakes in a matrix of partly degraded (kaolinitic) semi- to sericitic white mica, minor microcrystalline quartz.	Massive to faintly bedded, with a vague relict shardy-textured matrix. Unsheared.	Conspicuous clastic leucoxenic semi-opaques, minor carbonaceous matter, carbonaceous pelitic clasts. albite grains.	Close compositional affinities with 271402 and 271403, similarly argillised; coarser-grained in comparison and weakly lithoclastic.
271405	Psammopelitic Ash. Splintery to subround quartz grains, subordinate white mica flakes, partly argillised albite grains in a matrix of partly degraded (kaolinitic) sericite with minor relics of microcrystalline albite.	Very similar to 271404. Very incipiently sheared.	Conspicuous leucoxenic semi-opaques. Minor carbonaceous matter, pelite clasts, traces chlorite, degraded carbonate.	Very similar to 271404; relatively feldspathic in comparison and with some evidence of mild reworking.
271407	"Felsite". Sericitised feldspar phenocrysts, sporadic quartz amygdales in a groundmass of felsitic and sericitised feldspar microlaths. Semi-pervasive, sericite-replacive late secondary kaolin.	Porphyritic, amygdaloidal, weakly flow-structured. Semi-micrographic to locally spherulitic.	Leucoxenised opaques, rare very fine oxidised pyrite. Secondary Fe-stainings.	Exhibits granophyric characteristics consistant with a semi-chilled minor, high-level intrusive. Broadly dacitic; detail obscured by pervasive sericitic alteration.
271408	"Mica Siltstone". Abundant silt-sized detrital muscovite flakes, minor quartz and ill-defined kaolinised feldspar grains in a matrix of kaolinitic microcrystalline feldspar-replacive sericite, minor microcrystalline quartz.	Silty clastic, bedded on a sub- to fine millimetric scale.	Carbonaceous matter, minor carbonaceous pelite clasts. Pervasive ferruginised carbonate clots, clastic leucoxene.	Finer detail obscured by sericitic alteration, complexed by weathering effects. Similarities with 271401 etc. apparently tuffaceous; distinctly micaceous in comparison.
271409	"Mica-Quartz Siltstone". Partly degraded silt-sized white mica flakes, disseminated to conspicuous quartz grains, minor kaolinitic-degraded feldspar grains; kaolinitic, semi-sericitic white mica matrix.	Intricately banded micaceous siltstone/silty shale with quartzose siltstone partings. Incipiently crenulated.	Conspicuous clastic leucoxene. Carbonaceous matter, minor pelite clasts. Limonitic stainings, minor degraded carbonate.	Affinities with 271408, relatively pelitic/distinctly quartzose in comparison. Apparently weakly tuffaceous, detail obscured by alteration and weathering effects.

599744

Sample No.	Classification - Composition 609	Fabric	Accessories	Comments
271410	Volcanomict Sandstone. Silt- to medium sand-sized plagioclase, subordinate quartz grains, carbonaceous pelite and greenschist metapelite clasts, chlorite-albite-altered "andesitic" lava clasts. Chloritic microcrystalline albite	Poorly sorted, slumped, angular-subangular sandy clastic. matrix.	Clastic muscovite flakes, leucoxenic semi-opaques, shard fragments. Disseminated pyrite.	Slumped volcanomict/reworked tuffaceous sandstone with greenschist quartz-mica phyllite clasts; affinities with the Hellyer/Mt. Charter quartzose sandstone.
271411	Tuffaceous Sandstone. Sericitic/chloritic microcrystalline albitised lava, minor tuff clasts; albitised plagioclase, subordinate quartz grains, minor muscovite flakes, matrix of chloritic/sericitic crypto- to micro-crystalline albite, minor quartz.	Massive to weakly bedded, angular to subround, poorly sorted (silty fine to medium), sandy clastic.	Conspicuous clastic leucoxenic semi-opaques, minor carbonaceous pelite clasts, minor ?radiolaria.	Polymict sandstone with dominant, mildly reworked andesitic/leuco-andesitic tuffaceous components. Affinities with the relatively pelitic 271401 etc.
271412	Tuffaceous Siltstone. Crypto- to microcrystalline albite, minor quartz with varying proportions of silt- to fine sand-sized albite and quartz grains, muscovite flakes, sericitic pelite, carbonaceous pelite, minor chloritic-albitised lava clasts.	Laminated silty clastic with centimetric fine sandy siltstone/ fine sandstone interbeds; angular to rounded framework.	Minor/semi-pervasive chlorite, carbonaceous matter, leucoxenic, semi-opaques, radiolaria, ?sponge spicules.	Finer silty units are vaguely vitroclastic, with affinities to 271401 etc. Sand units are polymict, reworked-tuffaceous and microfossiliferous; similar to 271411, but relatively quartzose.
271413	Andesite. Albitised/weakly sericitic plagioclase-, relatively minor quartz- and chlorite-pseudomorphed ferromagnesian phenocrysts in a chlorite-sericite-stained microcrystalline, albite-altered felsic groundmass.	Strongly porphyritic/ trend glomeroporphyritic, with a semi-perlitic felsitic (devitrified) groundmass.	Leucoxenised opaques, minor discontinuous quartz-albite veinlets.	Devitrified/pervasively albite-quartz-chlorite-sericite-altered andesitic/ trend leuco-andesitic lava. Compositional affinities with volcanic components in 271410, 271411, 271412.
271414	Pelitic Ash. Microcrystalline feldspar-replacive sericite with pervasively intergrown chlorite; pervasively thinly disseminated silt-sized, splintery to subangular quartz grains, minor sericitic albite grains, sparse muscovite flakes.	Massive to faintly banded; pervasively vaguely relict vitroclastic on a microscale.	Leucoxenic semi-opaques, traces of carbonaceous matter, minor carbonaceous pelite clasts, oxidised carbonate clots.	Close affinities with 271401, 271402, 271403; relatively (altered) vitroclastic in comparison, but similarly impure, with non-volcanic clastic components.
271415	Tuffaceous Psammopelite. Silt- to fine sand-sized quartz grains, partly degraded/ferruginised muscovite flakes, minor albite grains, degraded biotite flakes, in a matrix of microcrystalline feldspar-replacive, partly kaolin	Massive to crudely banded, slumped, silty to fine sandy angular clastic. Vaguely silty vitroclastic matrix.	Clastic leucoxenic semi-opaques. Traces carbonaceous matter, minor pelite clasts, detrital zircons.	Affinities with 271409. Framework dominated by mica flakes, quartz grains; matrix apparently argillised-vitroclastic. Finer detail obscured.
271416	Tuffaceous Siltstone. Partly degraded (kaolinitic, chlorite-stained) microcrystalline albite with pervasive fine silt-sized white mica flakes, subordinate quartz grains, minor chloritised biotite flakes.	Well-sorted silty clastic; banded on a sub- to fine millimetric scale. Pervasive fragmented shardy microtextures.	Conspicuous clastic leucoxenic semi-opaques, minor carbonaceous matter.	Well-sorted, banded, but otherwise very homogeneous fine-grained siltstone interpreted as a reworked variant of 271401 etc.
271417	"Felsite". Albitised/variably sericitic plagioclase phenocrysts, quartz-chlorite-epidote amygdales in a groundmass of albitised/ sericite-stained feldspar microlaths with a quartz mesostasis.	Very similar to 271407.	Leucoxenised opaques, minor traces ultrafine hematite. Pervasive Fe-pigmentation in feldspar.	Close affinities with 271407. Main contrasts are presence of chlorite and cloudy microcrystalline epidote in amygdales, and relatively marked Fe-pigmentation of feldspars.

599745

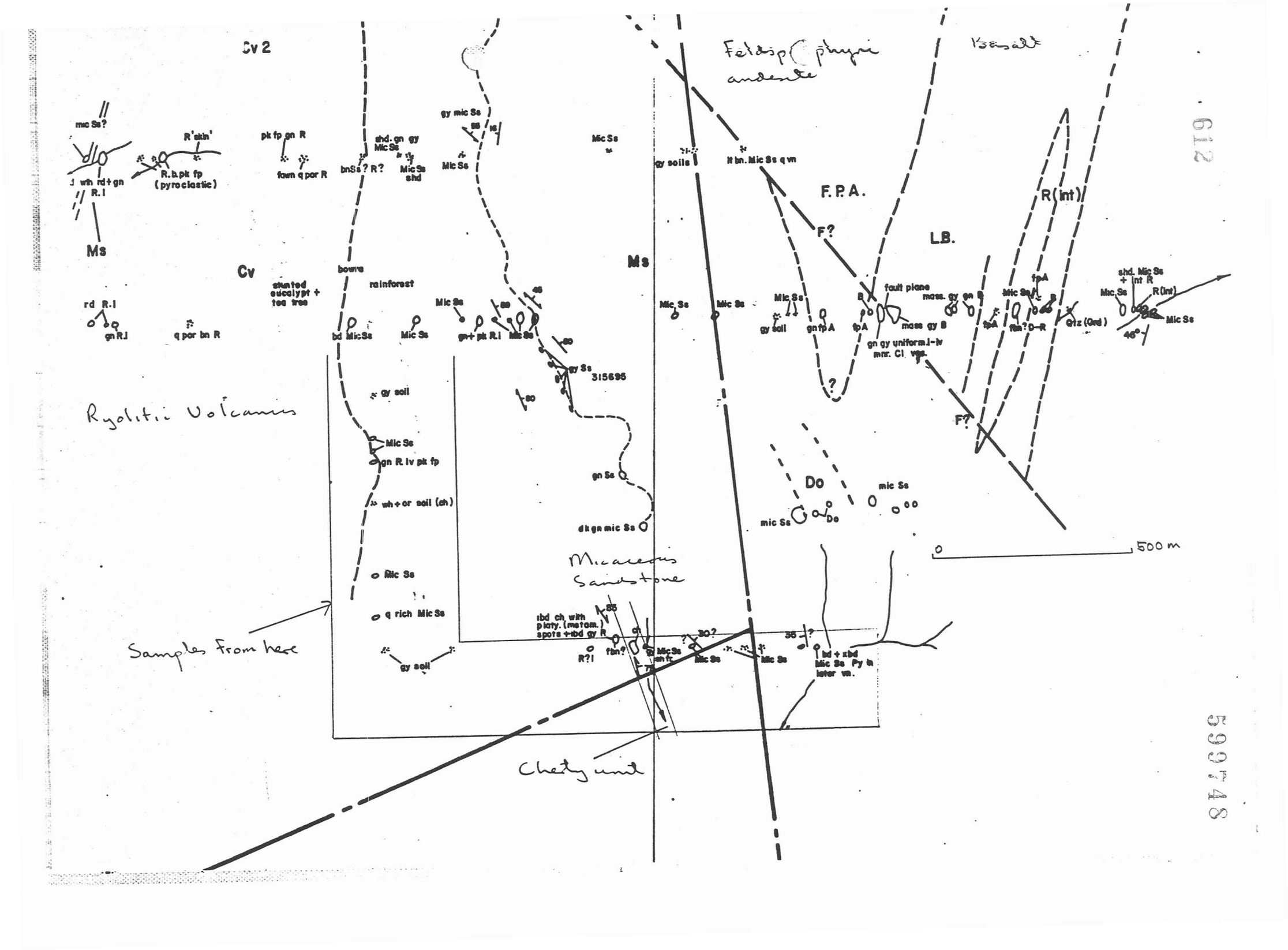
Sample No.	Classification - Composition	Fabric	Accessories	Comments
271418	Felsite. Albitised/variably saussurite-stained plagioclase, minor corroded quartz, epidotised ferromagnesian phenocrysts, sporadic xenoliths in a groundmass of albitised felsite with clots and films of sericite and chlorite, minor cloudy epidote.	Porphyritic/trend glomeroporphyritic, with corroded lava and tuff xenoliths. Felsitic (devitrified) groundmass.	Conspicuous leucoxenised opaques, traces of apatite.	Similarities with 271407, 271417, but relatively slightly basic and distinctly xenolithic in comparison (intrusive ?breccia). Phenocrystal quartz is possibly xenocrystal.
271419	Dacitic Tuff. Sericite and crypto- to microcrystalline quartz with disseminated albitised/ sericite-stained to sericite-pseudomorphed feldspar crystals, minor quartz crystal fragments. Sporadic quartz veinlets.	Lithic-crystal fragmental with a locally vaguely shardy matrix. Mildly sheared.	Leucoxenised opaques; minor clots of chlorite.	Interpreted as a lithic-vitric-crystal tuff on relict textural grounds. Dacitic characteristics; finer detail obscured by sericite-quartz alteration, mild shearing effects.
271421	"Quartz-Mica Siltstone". Silt- to fine sand-sized quartz grains, minor muscovite flakes, and sericitised feldspar grains, carbonaceous pelite clasts in a matrix of semi- to sericitic white mica/minor microcrystalline quartz.	Pelite-matrixed silty to fine sandy subangular clastic. Very incipiently sheared.	Minor oxidised/ leucoxenised clastic opaques. Minor clasts of greenschist metapelite (quartz-mica phyllite).	Affinities with 271409; relatively quartzose, coarser-grained and massive in comparison. No definite tuffaceous features.
271247 (T.S. 56964)	Dacitic Breccia. Albitised/sericite-stained plagioclase, relatively minor corroded quartz phenocrysts, frequent chlorite-sericite-stained xenoliths in a groundmass of weakly sericite-chlorite-stained microcrystalline quartz.	Lava-matrixed, flow-structured, psammite-grade, lithoclastic.	Leucoxenised opaques, rare magnetite, oxidised pyrite, traces degraded/ferruginised carbonate.	Essentially similar to 271418; relatively xenolithic, but distinctly homogeneous in comparison. Interpreted as a dacitic lava flow breccia.

599746

ATTACHMENT

South Hatfield Petrology Samples

379705	2200N 4600E	Mica Sandstone
379707	1910N 4300E	Mica Sandstone
379708	1580N 4300E	Mica Sandstone - R? weathered white
379710	1400N 4845E	Rhyolite?
379711	1420N 4900E	Cherty unit with spotted green platy mineral (metam?)
379712	1420N 4900E	Rhyolite interbedded with 379711
379713	1400N 4935E	Chert
379715	1400N 4965E	Chert
379716	1400N 4975E	Mica Sandstone close to chert.
379717	1400N 5400E	Well bedded mica sandstone - later pyrite vein.


Cv 2
Feldsp(C)phyric andesite
Basalt
mic Ss?
R'skin'
R.b.pk fp (pyroclastic)
pk fp gn R
fawn q por R
bnSis? R?
shd. gn gy Mic Ss
Mic Ss shd
gy mic Ss
Mic Ss
Mic Ss
gy soils
lt bn. Mic Ss q vn
F.P.A.
F?
L.B.
R(int)
Ms
Cv
stunted eucalypt + tea tree
bowrie
rainforest
Ms
rd R.I
gn R.I
q por bn R
bd Mic Ss
Mic Ss
Mic Ss
gn+pk R.I
Mic Ss
gy Ss
315695
gy soil
Rhyolitic Volcanics
Mic Ss
gn R.Iv pk fp
wh+or soil (ch)
Mic Ss
q rich Mic Ss
gy soil
Samples from here
gn Ss
dk gn mic Ss
Micaceous Sandstone
Mic Ss
Mic Ss
Mic Ss
gy soil
gn fp A
fp A
fault plane
mass. gy gn B
mass gy B
gn gy uniform l-lv mnr. Cl. vgs.
fp A
fp A
fan? D-R
Qtz (Ord)
shd. Mic Ss + int R
R(int)
Mic Ss
Mic Ss
46°
Do
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mic Ss
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500 m
lbd ch with platy. (metam.) spots + lbd gy R
R?!
fan?
Mic Ss sh ft
Mic Ss
Mic Ss
lbd + xbd Mic Ss Py in later vn.
Chert unit
84/6668
599548

599749

613

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13th March, 1987

REPORT CMS 87/2/14

YOUR REFERENCE:	Letter dated 19.2.1987
DATE RECEIVED:	20th February, 1987
SAMPLE NOS.:	379705 - 379717 (10)
SUBMITTED BY:	D.J. Jack
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

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Aberfoyle Resources Ltd.
Exploration Division
123, Camberwell Road
HAWTHORN EAST / VIC. 3123

REPORT CMS 87/2/14

Ten rock chip samples from the South Hatfield area were received for routine petrological description. Representative thin-sections were prepared and examined together with the offcuts, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

With the exception of sample 379712, which represents an intermediate (broadly andesitic, but unusually feldspathic) lava, this suite consists entirely of sedimentary rocks.

Sediments include typical quartz-mica sandstone and relatively micaceous siltstones. The majority, however, are (primary or mildly reworked) tuffaceous types, including tuffaceous sandstones, pelitic ashes and ashy or vitroclastic pelites.

These reflect sodic to sodi-potassic acid volcanism, apparently sub- to distal to the sediments, but clearly contemporaneous in part. Minor acid-volcanic-derived components appear within the quartz-mica psammopelite facies which, as elsewhere in the Que/Hellyer sequence, represent breaks in volcanism.

Pelitic ashes have been partly misidentified as cherts, no doubt due to cherty "field" characteristics. Observation of fracture pattern (brittle, as against conchoidal) may be useful in distinguishing these rocks from true cherts.

D. Cowan, B. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition 615 01	Fabric	Accessories	Comments
379705 (T.S. 57489)	Dolomitic Siltstone. Silt-sized subangular quartz grains, muscovite flakes, carbonaceous pelite clasts and sericitic-degraded, poorly determinate feldspar grains with a dolomitic sericite/cryptocrystalline quartz matrix.	Well-sorted, massive to very incipiently banded silty clastic.	Clastic leucoxene. Minor traces ultrafine syngenetic pyrite. Secondary Fe-stainings	Dolomitic, quartzose-micaceous siltstone, primarily feldspathic and possibly reworked-vitroclastic ("tuffaceous"). Detail obscured by sericitic alteration.
379707	"Tuffaceous" Sandstone. Framework of subangular K-feldspar, subordinate quartz and albite grains, minor muscovite flakes, sericitic/ degraded shard fragments. Weakly chloritic, cryptocrystalline quartz/illitised sericite matrix.	Loose, poorly sorted silty fine sandy framework. Featureless matrix. Incipiently banded.	Minor clasitc leucoxene, carbonaceous pelite, impure chert clasts. Traces degraded carbonate, pyrite.	Weakly micaceous arkosic silty sandstone with reworked tuffaceous characteristics. Includes sporadic secondary clots of chloritic quartz.
379708	"Tuffaceous" Sandstone. Loose framework of subangular feldspar, subordinate quartz grains, devitrified/partly degraded shard fragments, minor muscovite flakes. Weakly chloritic-sericitic microcrystalline feldspathic cement.	Very similar to 379707; slightly coarser-grained.	Carbonaceous pelite, impure chert clasts, clastic leucoxene. Traces oxidised carbonate, partly oxidised pyrite.	Close affinities with 379707; similarly interpreted. Distinctly arkosic reworked tuffaceous in comparison with the mica-quartz sandstone facies.
379710	Cherty Argillite. Sericite and sericitic microcrystalline quartz with thinly disseminated silt-sized clastic quartz grains, subordinate muscovite flakes. Sporadic cherty quartz veinlets.	Homogeneous, massive (unbanded), microcrystalline, with irregular discontinuous veinlets.	Semi-pervasive secondary Fe-stainings. Leucoxenic pigmentations. Minor traces carbonaceous matter.	Highly impure (argillaceous) chert/ cherty argillite; chemical sedimentary characteristics. Exhibits vague sub-hornfelsic induration features.
379711	"Spotted" Pelite. Partly degraded/illitised sericitic white mica with disseminated fine silt-sized detrital quartz grains, muscovite flakes. Thinly disseminated poikilitic clots of chlorite, kaolin.	Massive to weakly banded, weakly poikiloblastic ("spotted") slatey.	Ultrafine leucoxenic semi-opaques, minor traces carbonaceous matter. Secondary limonitic microfractures.	Quartzose-micaceous silty shale with vague polymetamorphic effects. Detail obscured by weathering effects. Mildly sheared marginal hornfelsic features.
379712	"Anglesite". Frequent albitised plagioclase phenocrysts, subordinate chloritised ferromagnesian microphenocrysts in a groundmass of albitised plagioclase microlaths with a chlorite-stained microcrystalline albite mesostasis.	Strongly porphyritic, flow-structured and flow-banded.	Leucoxenised opaques. Sporadic discontinuous ferruginised ?chlorite veinlets.	Albite-chlorite-altered, flow-banded intermediate lava. Compositional detail obscured, but reasonably classified as andesitic.
379713	Pelitic Ash. Weakly chlorite-stained microcrystalline albite with thinly disseminated fine silt-sized detrital quartz grains and muscovite flakes. Sporadic cherty quartz veinlets.	Massive to weakly banded fine silty clastic/vaguely relict vitroclastic.	Traces carbonaceous matter, clastic leucoxene, carbonaceous pelite clasts. Minor limonitic fractures.	Exhibits typical devitrified/albitised distal pelitic ash characteristics; impure, with accessory clastic quartz, mica flakes, pelite clasts.
379715	Pelitic Ash. Sericite with closely intergrown cryptocrystalline quartz, thinly disseminated fine silt-sized quartz grains and muscovite flakes, conspicuous leucoxenic/oxidised opaques.	Analogous to 379713 with a mild shearing (slaty) overprint.	Traces of carbonaceous matter, carbonaceous pelite clasts.	Relict features closely analogous to 379713; similarly interpreted. In contrast, this rock exhibits advanced sericitic alteration.

599751

CENTRAL MINERALOGICAL SERVICES

Sample No.	Classification - Composition	Fabric	Accessories	Comments
379716	Quartz-Mica Sandstone. Framework of angular-subangular quartz, subordinate sericitic feldspar grains, muscovite flakes, pelite/carbonaceous pelite clasts. Kaolinitic (degraded sericitic) argillaceous matrix/cement.	Poorly sorted (silty, medium sandy) fine sandstone. Incipiently stressed.	Impure chert, limestone, rare sericitic felsic lava clasts. Detrital leucoxene, rare apatite, chromite, zircon.	Relatively feldspathic/weakly acid-volcanomict, but otherwise typical quartz-mica sandstone. Includes minor low-grade metapelite clasts.
379717 (T.S. 57498)	Mica-Quartz Sandstone. Silt-sized muscovite flakes, subordinate subangular quartz, minor sericitic feldspar grains, with a partly degraded (illitic/kaolinitic) sericite matrix.	Well-sorted, silty clastic, massive to finely ganded; incipiently sheared.	Clastic leucoxene, carbonaceous matter, carbonaceous pelite clasts. Discontinuous spongy stringer of pyrite and chlorite.	Essentially a silty, relatively micaceous variant of 379716; only incipiently volcanomict in comparison. Pyritic stringer is a mildly sheared pyrite-chlorite veinlet.

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APPENDIX

Sample No.	Location	Description
427317	1000N 3445E	Rhyodacitic lava
427324	1800N 3375E	Rhyodacitic lava
427326	2000N 3510E	Rhyodacitic lava
427327	2200N 3430E	Ignimbrite with lava clasts
427328	2400N 3325E	Ignimbrite?
427330	2400N 3480E	Ignimbrite?
427334	2600N 3680E	Dacitic lava
427335	2600N 3760E	Ignimbrite?
427338	2800N 3465E	Dacitic lava
427343	3200N 2580E	Volcaniclastic
427344	3200N 3495E	Ignimbrite or lava?
427345	3200N 3515E	Ignimbrite or lava?
427352	8570N 6890E	Dacitic lava
427354	9000N 7140E	Spherulitic Rhyolitic intrusive
427355	9090N 7015E	?Volcaniclastic
427356	8990N 6980E	Fine sandstone - affinities with Que River Shale?

599754

613

Central Mineralogical Services

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Mr. A.W. McNeill
Geologist
Aberfoyle Resources Ltd.
Exploration Division
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BURNIE / TAS. 7320

24th February, 1988

REPORT CMS 88/1/18

YOUR REFERENCE:	Letter dated 22.1.1988
DATE RECEIVED:	27th January, 1988
SAMPLE NOS.:	16 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 88/1/18

A suite of sixteen rock chip samples 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. Attached descriptions summarise the microscopic data and include interpretative comments.

Summary

Twelve samples (427317 - 427345 non-inclusive) from the Boundary prospect area represent a sequence of altered felsic intermediate to acid volcanics. These range from andesitic or, strictly, quartz-trachyandesitic, through dacitic to rhyodacitic and rhyolitic in terms of composition, and include lavas, and possibly minor intrusives, in addition to lava breccias and (minor) pyroclastics.

Sample 427343 represents a strongly volcanomict/mildly reworked tuffaceous lithic sandstone with intraclasts of carbonaceous pelite. This rock provides a link with the previous suite of sediment-dominated Central Complex volcanics.

This group, as a whole, exhibits quartz-sericite $\pm$ chlorite and carbonate alteration assemblages, locally complexed by a little epidote, and exhibits strictly limited sulphide mineralisation.

Of the remaining four rocks, two represent devitrified and altered acid glassy volcanics (samples 427352, 427354). Sample 427355 represents an altered basic volcanic with a pronounced kaolinitic weathering overprint on the initial phyllosilicate-carbonate alteration assemblage. Sample 427356 represents a lithoclastic fine sandy siltstone with similarities to QRS facies, but with finer detail obscured by partial weathering effects.

D. Cowan, B. Sc.

SAMPLE NO.: 427317 (T.S. 59586) 1.

CLASSIFICATION/ COMPOSITION: Amygdaloidal Quartz-Trachyandesite. Albitised/weakly argillised plagioclase phenocrysts and phenocrystal clusters, subordinate chlorite-montmorillonite-epidote-pseudomorphed ferromagnesian phenocrysts, sporadic quartz-chlorite-epidote amygdales in a groundmass of alkali (K-)feldspar microlaths with a felsic to chloritic/locally siliceous mesostasis.

FABRIC: Amygdaloidal/semi-glomeroporphyritic with incipiently flow-orientated phenocrysts. Mesostasis is weakly felsitic ("snowflake-textured") where siliceous.

ACCESSORIES: Disseminated magnetite and leucoxenised opaques. Sparse corroded/ partly recrystallised phenocrystal quartz grains.

INTERPRETATION/ COMMENTS: Weakly flow-structured amygdaloidal lava with differentiated intermediate rather than strictly acid characteristics (hence quartz-trachyandesite). Reflects selective alteration of phenocrysts, particularly the ferromagnesian (amphibole and pyroxene).

SAMPLE NO.: 427324 (T.S. 59587)

CLASSIFICATION/ COMPOSITION: Altered "Porphyry". Frequent sericitised/albitised prismatic feldspar laths, subordinate chloritised ferromagnesian phenocrysts, sporadic quartz amygdales in a groundmass of quartz-mesostasised sericitic alkali feldspar microlaths with subordinate chloritised ?amphibole.

FABRIC: Strongly porphyritic, mildly amygdaloidal. Groundmass similar to that in 427317; relatively siliceous and slightly coarser-grained.

ACCESSORIES: Magnetite and leucoxenised opaques, traces of apatite and corroded phenocrystal quartz.

INTERPRETATION/ COMMENTS: Compositional affinities with 427324, but with finer detail obscured by advanced sericitic alteration. Fabric consistent with a minor intrusive or flow core zone.

SAMPLE NO.: 427326 (T.S. 59588) 2.

CLASSIFICATION/ COMPOSITION: Amygdaloidal Trachyandesite. Albitised plagioclase-, relatively minor chloritised ferromagnesian phenocrysts; sporadic quartz-muscovite-chlorite amygdales in a groundmass of albite microlaths with a K-feldspathic mesostasis. Sporadic quartz and crosscutting chloritic quartz-muscovite veinlets.

FABRIC: Porphyritic/trend glomeroporphyritic and relatively coarsely amygdaloidal. Strongly cognate-xenolithic/weakly flow-structured/ subtrachytic.

ACCESSORIES: Leucoxenised opaques.

INTERPRETATION/ COMMENTS: Amygdaloidal trachyandesitic clastic lava (tuff lava); quartz-sericite-chlorite-veined and -amygdaloidal. Lava clasts (mean 1 mm) are evenly sized, semi-orientated, texturally similar to the host lava.

SAMPLE NO.: 427327 (T.S. 59589)

CLASSIFICATION/ COMPOSITION: "Dacitic Tuff Lava". Semi- to sericitic, partly degraded (illitised to kaolinised/Fe-stained) white mica and very fine to microcrystalline quartz in varying proportions. Very thinly disseminated sericite-pseudomorphed phenocrystal feldspar.

FABRIC: Weakly flow-structured lithoclastic, with featureless to flow-structured and porphyritic clasts; similarly textured matrix.

ACCESSORIES: Sparse quartz phenocrysts, conspicuous leucoxenised opaques. Traces extensively oxidised pyrite. Minor discontinuous microcrystalline quartz veinlets.

INTERPRETATION/ COMMENTS: The semi-orientated, sub- to fine millimetric-scale clasts include minor pumiceous and vaguely vitric tuffaceous types. Much detail obscured by devitrification, sericite-quartz alteration, and weathering effects. Relict features consistent with a lava breccia (tuff lava) rather than a strictly pyroclastic facies.

SAMPLE NO.: 427328 (T.S. 59590) 3.

CLASSIFICATION/ COMPOSITION: "Rhyolitic Breccia. Weakly sericitic albite phenocrysts, clusters and crystal fragments, subordinate sericite-quartz-pseudomorphed ?sanidine, minor quartz crystals in a matrix of sericite and relatively minor fine granular to spherulitic and micro-crystalline quartz, minor clots of chlorite.

FABRIC: Flow-structured lithic-crystal fragmental. Semi-pervasive perlitic devitrification structures in the sericite-quartz-altered groundmass/matrix. Locally vaguely relict microshard-textured.

ACCESSORIES: Leucoxenised opaques, minor clots of chlorite, rare vugs of sideritic carbonate, traces of ultrafine hematite, traces of carbonaceous matter; rare apatite.

INTERPRETATION/ COMMENTS: Finer detail obscured by perlitic (to locally microspherulitic) devitrification and marked sericitic alteration. General features consistent with a welded and flow-brecciated sodi-potassic ignimbritic lithic-vitric-crystal tuff. Possibly strictly rhyodacitic.k

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SAMPLE NO.: 427330 (T.S. 59591)

CLASSIFICATION/ COMPOSITION: "Trachyandesitic" Breccia. Albitic/epidote-stained plagioclase crystals/clusters, minor silicified ferromags. in a matrix of fine to microcrystalline quartz and sericite, with relics of microcrystalline alkali (K-)feldspar.

FABRIC: Flow-structured, semi-moulded, lithoclastic. Weakly porphyritic, semi-selectively silicified felsitic matrix.

ACCESSORIES: Conspicuous oxidised/leucoxenised opaques. Minor traces of phenocrystal quartz. Minor clots of chlorite, traces of magnetite.

INTERPRETATION/ COMMENTS: This rock lacks strictly pyroclastic features and is best interpreted as a quartz-trachyandesitic lava breccia. Relatively siliceous alteration in comparison with 427328.

SAMPLE NO.: 427334 (T.S. 59592) 4.

CLASSIFICATION/ COMPOSITION: Quartz-Trachyandesite. Phenocrysts of albitised/variably sericitic plagioclase, subordinate sericitised-chloritised ferromags. (amphibole) and minor microphenocrystal quartz grains in a matrix (altered groundmass) of sericitised plagioclase microlaths with a K-feldspathic mesostasis and minor quartz.

FABRIC: Semi-glomeroporphyritic, flow-banded, semi-pervasively perlitic on a fine scale; pervasively mildly stressed, microfractured.

ACCESSORIES: Leucoxenised opaques, secondary limonitic Fe- and Mn-oxide stainings. Minor traces of Cu-sulphide(?).

INTERPRETATION/ COMMENTS: Primarily a subvitric felsic intermediate lava, quartz-trachyandesitic rather than strictly acid, with affinities to 427317, 427324 and 427326. Moderately sericite-chlorite-altered, stressed, and microfractured.

SAMPLE NO.: 427335 (T.S. 59593)

CLASSIFICATION/ COMPOSITION: "Rhyodacitic Breccia". Clasts of variably sericite/microcrystalline quartz-altered albite- and weakly quartz-porphyritic K-feldspathic groundmassed lava, minor clasts of relatively sericitised microgabbro. Matrix of selectively cherty-silicified felsic glass with sporadic feldspar crystal fragments.

FABRIC: Loose to semi-compact framework of lapilli-grade angular litho-clasts. Featureless to vaguely relict microshardy-textured matrix with a semi-pervasive contorted microscale flow-banding.

ACCESSORIES: Leucoxenised opaques, minor clots, films of chlorite in clasts and matrix. Sporadic quartz veinlets. Semi-pervasive irregular network of quartz-muscovite veinlets. Limonitic Fe-stainings.

INTERPRETATION/ COMMENTS: Pelitic vitric ash-matrixed breccia, apparently a distal vitric ash flow with lapilli-grade intraclasts of rhyodacitic lava and relatively altered microgabbroic xenoliths. Reflects semi-differential sericitic alteration of clasts, silicification of matrix. The late quartz-muscovite veinlets are of marginal granitic character.

624

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SAMPLE NO.: 427338 (T.S. 59594) 5.

CLASSIFICATION/ COMPOSITION: **Amygdaloidal Dacite**. Weakly sericite-calcite-stained albite-, minor corroded quartz and chlorite-quartz-pseudomorphed amphibole phenocrysts, sporadic variably chalcedonic quartz amygdales in a pervasively sericitic/variably silicified felsic groundmass.

FABRIC: Flow-structured, weakly banded, mildly amygdaloidal, semi-glomeroporphyritic, perlitic-devitrified.

ACCESSORIES: Minor chlorite. Leucoxenised opaques, rare magnetite.

INTERPRETATION/ COMMENTS: Devitrified, sericite-quartz(-chlorite-calcite)-altered/quartz-amygdaloidal dacitic lava. Exhibits very incipient shearing, stress, and microfracturing effects.

SAMPLE NO.: 427343 (T.S. 59595)

CLASSIFICATION/ COMPOSITION: **Volcanomict Lithic Sandstone**. Framework of fine to medium sand-sized, subangular quartz-chlorite-altered felsic intermediate lava clasts, subordinate sericite-chlorite-stained/albitised plagioclase grains, minor quartz and sparse K-feldspar grains. Chloritic microcrystalline quartz matrix/cement with pervasive microscopic cloudy clots of zoisitic epidote.

FABRIC: Poorly sorted (silty fine to medium) sandy clastic, essentially massive (unbanded), and only incipiently bedded.

ACCESSORIES: Clasts of chloritic vitric and vitric-crystal tuff, carbonaceous shale; detrital muscovite flakes, leucoxene, rare monazite, tourmaline and zircon. Minor traces of pyrite, rare microscopic blebs of (dark red) sphalerite.

INTERPRETATION/ COMMENTS: Clastic debris almost entirely felsic intermediate-acid volcanic-derived and is mildly reworked or slumped tuffaceous in part. No apparent basement-derived components (e.g. metapelite clasts), but finer detail is obscured by chloritic alteration effects.

SAMPLE NO.: 427344 (T.S. 59596) 6.

CLASSIFICATION/ COMPOSITION: **Altered Felsite.** Aggregates of sericite and variably sericite-stained anhedral quartz with disseminated variably sericitic quartz pseudomorphs after feldspar phenocrysts, thinly disseminated corroded quartz phenocrysts. Sporadic films of sericite, semi-pervasive network of microcrystalline quartz veinlets.

FABRIC: Porphyritic/weakly flow-structured, felsitic (devitrified felsic glass).

ACCESSORIES: Sparse leucoxene- and Fe-oxide stained quartz pseudomorphs after phenocrystal amphibole. Leucoxenised opaques.

INTERPRETATION/ COMMENTS: Devitrified/pervasively sericite-quartz altered dacitic(?) pitchstone. Primarily a lava, or conceivably a semi-chilled minor intrusive, dependent on field relationships.

SAMPLE NO.: 427345 (T.S. 59597)

CLASSIFICATION/ COMPOSITION: **Dacitic Breccia.** Variably sericitic albite-, minor quartz-chlorite-pseudomorphed ferromagnesian-, sparse corroded quartz phenocrysts and sporadic quartz amygdales in a variously extensively sericitised felsitic to cherty-silicified microcrystalline groundmass. Interspersed zones of cherty quartz matrix. Sporadic quartz veinlets.

FABRIC: Random angular, millimetric to centimetric clasts; corrosive/ replacive crypto- to microcrystalline quartz matrix (cement).

ACCESSORIES: Leucoxenised opaques. Disseminated to conspicuous ferruginised carbonate (?siderite) rhombs, clusters, concentrated in sericitic zones. Minor cavities after carbonate in quartz veinlets.

INTERPRETATION/ COMMENTS: Poorly diagnostic in terms of mode of origin, although general features are consistent with a subproximal subaerial lithic tuff ("lapilli tuff"). Alternately, a flow-marginal breccia. No tangible ignimbritic features.

SAMPLE NO.: 427352 (T.S. 59598) 7.

CLASSIFICATION/ COMPOSITION: **Altered Felsite**. Variably sericite-stained fine anhedral and semi-fibrous quartz with pervasive interstitial clots and films of sericite, semi-pervasive spongy clots of limonite, thinly disseminated sericite-pseudomorphed feldspar phenocrysts.

FABRIC: Semi-banded, weakly flow-structured and weakly intraclastic felsitic with disseminated to conspicuous quartz microspherulites.

ACCESSORIES: Traces oxidised very fine pyrite. Fine leucoxenised opaques.

INTERPRETATION/ COMMENTS: Spongy limonite clots are apparently carbonate-derived, accessory to the pervasive sericite-quartz alteration assemblage. Primarily a weakly feldspar-porphyritic obsidian; probably dacitic, weakly flow-structured, -banded, and -brecciated.

SAMPLE NO.: 427354 (T.S. 59599)

CLASSIFICATION/ COMPOSITION: **Altered Felsite**. Quartz and sericite in near-equant proportions with sporadic quartz-fringed sericite amygdales. Minor limonitic Fe-stainings.

FABRIC: Analogous to 427352; slightly coarser felsitic and spherulitic structures and with flow-orientated amygdales.

ACCESSORIES: Leucoxenised opaques. Very minor traces of oxidised pyrite, traces of degraded/ferruginised carbonate.

INTERPRETATION/ COMMENTS: Close affinities with 427352 and similarly altered, although relatively devoid of oxidised pyrite and carbonate. Primarily a weakly flow-banded, weakly amygdaloidal obsidian.

SAMPLE NO.: 427355 (T.S. 59600) 8.

CLASSIFICATION/ COMPOSITION: **Altered, Weathered "Andesite"**. Abundant kaolin-cryptocrystalline silica-pseudomorphed feldspar-, subordinate similarly altered and weathered pyroxene and amphibole phenocrysts, sporadic kaolin-chalcedony amygdales in a groundmass of argillised/kaolinised feldspar microlaths with a leucoxene-stained degraded chloritic mesostasis.

FABRIC: Strongly porphyritic, amygdaloidal, flow-structured, with a "basaltic" (semi-felted microlathic) microtextured groundmass.

ACCESSORIES: Rare corroded quartz phenocrysts. Relics of semi-sericitic white mica. Kaolin-silica pseudomorphs after fine sparry carbonate. Fine relict primary "chromite". Secondary Fe-, minor Mn-stainings.

INTERPRETATION/ COMMENTS: Primarily a porphyritic, amygdaloidal basalt or "basaltic andesite" with sparse corroded ?xenocrystal quartz, distinctive accessory chrome spinel. Reflects pervasive sericite-chlorite-carbonate alteration, complexed/partly obscured by weathering-induced kaolinisation.

SAMPLE NO.: 427356 (T.S. 59601)

CLASSIFICATION/ COMPOSITION: **Carbonaceous Pelite**. Partly degraded (illitic to kaolinised) semi-sericitic white mica aggregates with pervasively disseminated silt- to fine sand-sized carbonaceous shale clasts, subordinate quartz grains, minor muscovite flakes.

FABRIC: Massive to weakly banded fine sandy argillaceous siltstone with a weak but penetrative slaty cleavage medium-angle discordant to bedding.

ACCESSORIES: Degraded/ferruginised microscopic carbonate rhombs. Silt-sized detrital leucoxene, rare zircons and tourmaline. Traces oxidised very fine pyrite.

INTERPRETATION/ COMMENTS: Carbonaceous lithoclastic siltstone, primarily weakly dolomitic and pyritic. No tangible volcanic or tuffaceous features, but finer detail is obscured by weathering effects. Broad similarities with Q.R.S.

APPENDIX 30.

629

599765 (12)

ject South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba, Cr, Ni, Zr, Ti

Ordinate	Sample No.	Depth	Colour
800N			
2550E	378641	no sample	
75	42	20c	GY/BR/OR
2600E	43	20c	OR/BR
25	44	80c	GY/BR/OR
50	45	60c	YW/OR
75	46	90c	GY
2700E	47	40c	OR/BR
25	48	60c	GY/BR
50	49	40c	OR/BR/GY
75	378650	70c	LGT-BR
2800E	51	90c	OR/BR
25	52	80c	LGT-BR
50	53	50c	BR/GY
75	54	40c	LGT-BR
2900E	55	no sample *STD.	5
25	56	70c	LGT-BR
50	57	50c	OR/BR/GY
75	58	70c	GY/BR
3000E	59	no sample	
25	378660	70c	GY/BR
50	61	60c	GY/WH
75	62	80c	GY/BR
3100E	63	SAMPLE TAKEN ✓	✓
25	64	60c	BR
50	65	NO SAMPLE	
75	66	no sample	
3200E	67	no sample	
25	68	20c	OR/BR
50	69	50c	OR/BR
75	378670	70c	BL
3300E	71	40c	GY

Ordinate	Sample No.	Depth	Colour
3800N			
3325E	378672	70c	GY/BR
50	73	40c	GY/BR
75	74	70c	GY
3400E	75	no sample	
25	76	80c	BR/GY
50	77	40c	BR/GY
75	78	80c	BR/GY
3500E	79	40c	OR/BR/GY
25	378680	20c	GY/OR/BR
50	81	40c	OR/BR/GY
75	82	60c	GY/OR/BR
3600E	83	60c	GY
25	84	70c	OR/BR
50	85	50c	GY
75	86	no sample *STD	5
3700E	87	80c	OR/BR
25	88	80c	OR/GY
50	89	70c	YW/OR
75	378690	80c	OR/BR
3800E	91	60c	OR/BR
25	92	90c	OR/BR
50	93	60c	OR/BR/GY
75	94	80c	LGT-BR
3900E	378695	60c	OR/BR
	49		

630 HAT. SOUTH HATFIELD SOILS. 599766 (12)

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NATA REGISTERED No. 1526

28 JUL REC'D

OUR REF.: COM861034

YOUR REF.: 925

N.B. see repeat assays attached. unless otherwise stated repeat values supersede values in this report

Mr. A. M. Hespe
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE

TAS 7320

July 25, 1986

Dear Sir

RE: JOB COM861034

Enclosed are the assays for the samples delivered to our laboratory on July 2, 1986

Yours Sincerely,
COMLABS PTY LTD

per :

P R Harvey

Report Length 4 pages

· 631

COMLABS SERVICES PTY. LTD.

599767

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ANALYTICAL REPORT

JOB COM861034
O/N : 925

SAMPLE	Cu	Pb	Zn	Ag	Ni	Cr	Ti
378642	2	10	24	<1	12	28	0.38
378643	8	12	44	<1	24	40	0.52
378644	<2	<4	10	1	12	18	0.29
378645	2	6	16	1	16	16	0.20
378646	<2	<4	9	<1	10	18	0.26
378647	<2	<4	12	<1	10	14	0.27
378648	<2	4	4	<1	8	40	0.32
378649	<2	<4	9	<1	12	20	0.24
378650	<2	4	14	<1	10	18	0.21
378651	<2	<4	14	<1	8	22	0.26
378652	<2	<4	7	<1	10	24	0.31
378653	<2	<4	9	<1	10	30	0.31
378654	<2	<4	2	<1	6	60	0.21
378655	20	140	95	<1	26	42	0.32 * STD 5
378656	<2	8	14	<1	6	40	0.22
378657	<2	<4	3	<1	10	22	0.23
378658	<2	<4	5	<1	6	24	0.20
378660	<2	<4	3	<1	10	28	0.22
378661	<2	<4	6	<1	12	26	0.20
378662	<2	<4	4	<1	10	20	0.26
378663	<2	<4	4	1	6	28	0.18
378664	<2	<4	4	<1	6	38	0.23
378668	<2	14	8	<1	10	24	0.23
378669	2	6	7	1	10	30	0.20
378670	<2	4	9	<1	12	32	0.12
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	%
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS1B	AAS1B	COL4

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ANALYTICAL REPORT

JOB COM861034
O/N : 925

SAMPLE	Cu	Pb	Zn	Ag	Ni	Cr	Ti
378671	<2	<4	7	<1	12	22	0.18
378672	<2	<4	6	<1	8	32	0.14
378673	<2	<4	3	<1	12	20	0.23
378674	<2	<4	5	<1	6	30	0.19
378676	<2	<4	5	<1	6	18	0.28
378677	<2	<4	7	<1	10	26	0.26
378678	<2	<4	5	<1	10	30	0.28
378679	<2	4	12	<1	10	26	0.23
378680	<2	4	18	<1	10	30	0.27
378681	<2	4	12	<1	6	20	0.30
378682	<2	14	20	<1	8	26	0.30
378683	<2	4	6	<1	6	22	0.27
378684	<2	<4	5	<1	8	30	0.31
378685	<2	<4	5	<1	4	26	0.22
378686	20	150	100	<1	26	32	0.30 * STD. 5
378687	5	8	18	<1	22	145	0.28
378688	14	8	18	<1	70	270	0.27
378689	6	4	18	<1	42	155	0.21
378690	5	<4	10	<1	46	160	0.24
378691	6	<4	8	<1	42	170	0.24
378692	7	4	10	<1	40	135	0.09
378693	3	4	4	<1	36	130	0.26
378694	<2	4	4	<1	16	95	0.09
378695	8	<4	6	<1	46	195	0.16
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	%
SCHEME	AAS1	AAS1	AAS1	AAS3	AAS1B	AAS1B	COL4

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ANALYTICAL REPORT

JOB COM861034
O/N : 925

SAMPLE	As	Ba	Zr
378642	6	135	200
378643	16	200	175
378644	7	115	270
378645	2	350	240
378646	8	240	280
378647	4	360	250
378648	6	270	240
378649	3	440	210
378650	6	330	200
378651	7	370	210
378652	5	240	250
378653	3	300	250
378654	4	240	280
378655	80	330	190
378656	7	330	230
378657	4	165	310
378658	3	130	280
378660	6	155	290
378661	2	80	280
378662	<2	145	310
378663	2	140	230
378664	2	90	270
378668	16	350	210
378669	12	230	200
378670	8	185	200
UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1

* STD 5

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ANALYTICAL REPORT

JOB COM861034
O/N : 925

SAMPLE	As	Ba	Zr
378671	<2	220	240
378672	6	160	230
378673	2	170	270
378674	<2	130	270
378676	5	140	280
378677	9	200	270
378678	<2	115	310
378679	10	460	320
378680	4	100	280
378681	7	180	280
378682	8	130	320
378683	7	115	290
378684	5	165	165
378685	9	110	180
378686	85	370	195 * STD. 5
378687	28	85	195
378688	28	130	170
378689	14	105	190
378690	22	100	195
378691	28	110	195
378692	32	95	190
378693	14	70	195
378694	9	45	175
378695	30	95	175
UNITS	ppm	ppm	ppm
SCHEME	XRF1	XRF1	XRF1

633 REPORTS

(12)

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ANALYTICAL REPORT

JOB COMA861034 O/N : Repeat Assays

Results in ppm

	SAMPLE	Ba	%Ti	Ni
	378642	170	0.45	<4
	378643	220	0.55	<4
	378644	155	0.31	<4
	378645	500	0.29	<4
	378646	300	0.30	<4
	378647	420	0.29	<4
	378648	400	0.36	<4
	378649	570	0.33	<4
	378650	450	0.29	<4
	378651	530	0.28	<4
	378652	280	0.34	<4
	378653	390	0.30	<4
	378654	310	0.31	<4
*	378655	470	0.38	8
	378656	490	0.30	<4
	378657	230	0.29	<4
	378658	190	0.27	<4
	378660	260	0.25	<4
	378661	105	0.24	<4
	378663	175	0.21	<4
	378664	115	0.26	<4
	378668	520	0.25	<4
	378669	330	0.25	<4
	378670	260	0.17	<4
	378671	300	0.21	<4

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599772

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ANALYTICAL REPORT

JOB COMA861034 O/N : Repeat Assays

Results in ppm

	SAMPLE	Ba	%Ti	Ni
	378672	150	0.22	<4
	378673	230	0.25	<4
	378674	180	0.28	<4
	378676	220	0.27	<4
	378677	280	0.23	<4
	378678	145	0.30	<4
	378679	600	0.30	<4
	378680	140	0.30	<4
	378681	290	0.27	<4
	378682	190	0.32	<4
	378683	165	0.28	<4
	378684	220	0.36	<4
	378685	150	0.25	<4
*	378686	500	0.38	10
	378687	120	0.36	26
	378688	185	0.41	75
	378689	150	0.34	50
	378690	115	0.35	50
	378691	130	0.35	46
	378692	115	0.36	46
	378693	85	0.34	42
	378694	60	0.29	20
	378695	120	0.31	50

Method of Analysis : Ba Ti : XRF1
Ni : AAS1

Project South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Ordinate	Sample No.	Depth	Colour
3400N			
2200E	378696	NO Sample *	
25	97	NO Sample * STD	(5)
50	98	50	Lgt/OR/BR
75	99	60	OR
2300E	378700	40	Lgt/BR
25	01	30	OR
50	02	40	Lgt/OR/BR
75	03	40	Gy/BR
2400E	04	30	Lgt/OR/BR
25	05	70	OR
50	06	50	OR/BR
75	07	70	OR/BR
2500E	08	40	OR/BR
25	09	90	OR/BR
50	378710	40	OR/BR
75	11	90	OR/GR
2600E	12	40	OR
25	13	80	OR
50	14	50	Lgt/BR
75	15	70	OR/Gy
2700E	16	40	OR/BR
25	17	80	OR/BR
50	18	40	Lgt/BR
75	19	70	Lgt/BR
2800E	378720	50	Lgt/BR
25	21	80	Gy/BR
50	22	90	Lgt/BR/DK/Gy
75	23	60	Gy/BR
2900E	24	30	Lgt/BR
25	25	70	BL/BR
50	378726	60	Lgt/BR

Co Ordinate	Sample No.	Depth	Colour
3400N			
2975	378727	70	BR
3000E	28	70	OR/BR/Gy
25	29	NO Sample * STD	(5)
50	378730	NO Sample *	
75	31	40	Lgt/BR
3100E	32	50	OR/BR
25	33	70	OR/BR
50	34	NO Sample	
75	35	90	BR/BL
3200E	36	50	YL/OR
25	37	70	OR/Gy/BR
50	38	50	Gy/BR
75	39	90	OR/BR
3300E	378740	60	YL/BR
25	41	60	YL/Gy
50	42	50	Lgt/BR
75	43	50	Gy
3400E	44	30	DK/BR/Gy
25	45	40	Gy
50	46	40	Lgt/BR
75	47	80	OR/BR
3500E	48	50	BR/Gy
25	49	80	OR/BR
50	378750	50	OR/BR/Gy
75	51	70	YL/BR
3600E	52	40	BR/Gy
25	53	60	OR/BR/Gy
50	54	50	OR/BR/Gy
75	55	90	OR/BR
3700E	56	60	OR/BR
25	378757	1.00	DK/BR

638

599774 (14)

Project Gerrard Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Ordinate	Sample No.	Depth	Colour
3400N			
3750E	378758	70	GY/BR
75	59	60	GY/BL
3800E	378760	60	GY/BR
25	61	70	GY/BL
50	62	50	GY/BR
75	63	70	GY
3900E	64	50	GY/BR
25	65		
50	66		
75	67		
4000E	68		
25	69		
4050E	378770		

Ordinate	Sample No.	Depth	Colour

ANALABS

5997.5 (14)

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Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

639

ANALYTICAL REPORT No. 23.3.08.03843

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
0982	

DATE RECEIVED	RESULTS REQUIRED
28/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	15/09/86	1	66

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
	Various	SO	Prep: 017,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	Various	PU							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

South Hatfield
Soil Samples.
3400N

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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640

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03843	15/09/86	0982	1 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378697 *STD	35	170	160	<0.5	45	68	600	15	240
2	378698	15	35	95	<0.5	55	13	390	90	320
3	378699	15	35	40	0.5	35	6	400	35	280
4	378700	10	35	45	0.5	35	5	380	40	260
5	378701	15	40	65	<0.5	30	5	520	30	280
6	378702	5	35	30	<0.5	20	2	500	25	260
7	378703	5	10	10	<0.5	15	<1	480	40	340
8	378704	10	15	35	<0.5	30	6	460	45	290
9	378705	10	20	40	<0.5	30	3	330	40	330
10	378706	10	60	35	0.5	35	3	250	60	310
11	378707	5	30	50	<0.5	45	8	180	80	390
12	378708	5	10	50	<0.5	40	5	180	65	340
13	378709	5	15	25	<0.5	20	1	210	8	300
14	378710	5	15	30	<0.5	15	<1	65	10	250
15	378711	5	20	170	<0.5	30	8	310	10	350
16	378712	5	20	60	<0.5	20	3	690	15	270
17	378713	<5	20	25	<0.5	15	3	120	<5	220
18	378714	5	10	25	<0.5	20	<1	150	20	220
19	378715	5	20	25	<0.5	15	9	300	<5	320
20	378716	5	30	100	0.5	70	20	860	9	250
21	378717	5	10	20	<0.5	15	7	460	15	240
22	378718	5	5	15	<0.5	15	<1	240	8	300
23	378719	5	5	25	<0.5	20	<1	340	35	310
24	378720	5	5	30	<0.5	15	<1	410	<5	320
25	378721	10	5	15	<0.5	15	<1	360	7	340

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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641

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.09.03843	15/09/86	0982	2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378722	5	5	10	<0.5	15	<1	420	25	330
2	378723	5	5	15	0.5	10	<1	550	<5	380
3	378724	5	<5	<5	<0.5	10	2	460	<5	420
4	378725	5	<5	30	<0.5	10	2	690	20	370
5	378726	10	<5	15	<0.5	15	4	450	5	360
6	378727	5	<5	20	<0.5	15	6	450	<5	340
7	378728	5	<5	30	<0.5	20	3	380	25	340
8	378729 *570.5	35	165	170	<0.5	30	69	600	15	230
9	378731	5	5	25	<0.5	10	6	360	25	400
10	378732	<5	<5	40	<0.5	15	3	510	<5	410
11	378733	5	20	50	<0.5	20	8	540	20	420
12	378735	<5	10	45	0.5	20	6	570	9	300
13	378736	5	<5	30	0.5	20	3	560	20	310
14	378737	10	10	25	0.5	15	2	650	<5	300
15	378738	5	10	20	<0.5	15	3	540	<5	310
16	378739	<5	<5	20	<0.5	10	8	430	<5	320
17	378740	5	<5	15	0.5	10	2	810	<5	310
18	378741	5	<5	20	<0.5	15	3	820	8	300
19	378742	5	<5	15	<0.5	10	5	400	10	330
20	378743	5	<5	10	<0.5	10	1	320	<5	380
21	378744	5	5	15	<0.5	10	4	310	5	310
22	378745	5	<5	10	<0.5	10	4	320	15	400
23	378746	5	<5	25	<0.5	15	7	450	<5	350
24	378747	5	<5	30	<0.5	20	1	390	25	340
25	378748	5	<5	35	0.5	20	7	460	8	330

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
	23.3.08.03843	15/09/86	0982	3 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378749	5	<5	25	<0.5	15	11	320	<5	340
2	378750	<5	<5	25	<0.5	15	4	490	7	330
3	378751	5	<5	20	<0.5	30	<1	160	55	340
4	378752	5	5	45	<0.5	40	9	360	5	400
5	378753	5	<5	20	0.5	40	9	270	35	340
6	378754	5	<5	15	<0.5	15	5	270	<5	280
7	378755	5	<5	35	<0.5	15	9	440	<5	300
8	378756	5	10	25	<0.5	20	4	370	15	310
9	378757	10	30	45	<0.5	20	10	370	35	180
10	378758	5	<5	25	<0.5	20	5	280	75	280
11	378759	5	<5	15	<0.5	20	<1	210	90	230
12	378760	5	15	15	<0.5	20	<1	320	55	240
13	378761	<5	<5	15	<0.5	15	<1	270	45	210
14	378762	10	<5	20	<0.5	35	3	320	90	300
15	378763	5	<5	10	<0.5	20	<1	170	70	230
	378764	<5	<5	10	<0.5	20	4	270	120	220
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03843	15/09/86	0982	4 OF 6

TUBE No.	SAMPLE No.	Ti									
1	378697	3200									
2	378698	3650									
3	378699	3700									
4	378700	4550									
5	378701	3550									
6	378702	3750									
7	378703	3750									
8	378704	3400									
9	378705	4400									
10	378706	4200									
11	378707	4550									
12	378708	3100									
13	378709	3850									
14	378710	4150									
15	378711	2750									
16	378712	2700									
17	378713	6250									
18	378714	3000									
19	378715	4950									
20	378716	4350									
21	378717	2250									
22	378718	2300									
23	378719	2200									
24	378720	2250									
25	378721	3400									

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
	23.3.08.03843	15/09/86	0982	5 OF 6

TUBE No.	SAMPLE No.	Ti									
1	378722	2800									
2	378723	3650									
3	378724	3300									
4	378725	2550									
5	378726	2500									
6	378727	3250									
7	378728	2550									
8	378729 *STD.5	3200									
9	378731	3250									
10	378732	2650									
11	378733	3200									
12	378735	2450									
13	378736	2500									
14	378737	2600									
15	378738	2550									
16	378739	2750									
17	378740	2500									
18	378741	2750									
19	378742	2300									
20	378743	2950									
21	378744	2250									
22	378745	3500									
23	378746	2950									
24	378747	2550									
25	378748	2000									

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
	23.3.08.03843	15/09/86	0982	6 OF 6

TUBE No.	SAMPLE No.	Ti
1	378749	2500
2	378750	2050
3	378751	2900
4	378752	3200
5	378753	2500
6	378754	2050
7	378755	2450
8	378756	2300
9	378757	1700
10	378758	2600
11	378759	2500
12	378760	2550
13	378761	2450
14	378762	2650
15	378763	2550
16	378764	3200
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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599782 (15)

Project Sound Hatfield Analyses For Cu, Pb, Zn, Ag, As, Ba

Coordinate	Sample No.	Depth	Colour
3000N			
2200E	378771	no sample * STD. (5)	
25	72	70c	BR
50	73	50c	Lgt BR
75	74	80c	Lgt BR
3000E	75	20c	BR/Gy
25	76	60c	OR
50	77	30c	OR/BR
75	78	70c	OR/BR
2400E	79	60c	BR
25	378780	90c	OR/BR
50	81	50c	OR/BR
75	82	70c	OR/BR
2500E	83	40c	OR/BR
25	84	50c	OR/BR
50	85	30c	OR/BR
75	86	70c	OR/BR
2600E	87	20c	OR/BR/Gy
75	88	90c	OR
2700E	89	50c	OR/BR
75	378790	90c	OR
2700E	91	50c	OR/BR
25	92	60c	OR
50	93	40c	OR/BR
75	94	70c	OR/BR
2800E	95	40c	OR/BR
25	96	70c	Gy/BR/BL/OR
50	97	no sample * STD. (5)	
75	98		*
2900E	99	40c	OR/BR
25	378800	60c	OR/BR
50	01	50c	BR

Coordinate	Sample No.	Depth	Colour
3000N			
75	378802	40c	Gy/BR
3000E	03	70c	BR/Gy
25	04	70c	BL/BR
50	05	80c	BR/Gy
75	06	80c	Gy
3100E	07	30c	OR/BR
25	08	60c	OR/BR
50	09	30c	OR/BR
75	378810	50c	Gy/BR
3200E	11	20c	BR
25	12	60c	BR/OR
50	13	50c	BR
75	14	60c	OR/Gy
3300E	15	50c	OR/BR/Gy
25	16	70c	Gy/BR
50	17	40c	WH
75	18	40c	Gy/OR
3400E	19	50c	BR
25	378820	50c	Gy/BR
50	21	60c	BR
75	22	70c	Gy/WH
3500E	23	70c	BR
25	24	60c	OR/BR
50	25	80c	BR/OR
75	26	60c	Gy/OR
3600E	27	60c	BR/Gy
25	28	60c	BL/BR
50	29	60c	Gy
75	378830	50c	OR/Gy
3700E	31	50c	BR
25	378832	20c	OR/BR

599783 (15)

Project 8617 South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Coordinate	Sample No.	Depth	Colour
3000N			
3750E	378833	50c	OR/BR/GY
75	34	50c	OR/BR
3800E	35	30c	GY
25	36	60c	BR
50	37	40c	GY
75	38	70c	OR/BR
3900E	39	30c	BR/GY
25	378840	70c	OR/BR
"	41	80c	BR
75	42	80c	GY/BR
4000E	43	50c	YW/BR
25	44	40c	OR/BR
50	45	50c	BR
75	46	40c	OR/BR
4100E	47	60c	BR
25	48	60c	GY
50	44	50c	GY
75	378850	60c	OR/BR
4200E	51	50c	GY
25	52	80c	BR/GY
50	53	50c	Lgt BR/GY
75	54	60c	GY/WH/BR
4300E	55	60c	GY
25	56	30c	GY/WH/BR
50	57	50c	OR/BR
75	58	80c	BL/GR
4400E	54	40c	GY/OR/BR
25	378860	60c	OR/BR
50	61	70c	OR/BR
75	62	50c	OR/BR
4500E	63	60c	OR/BR

Coordinate	Sample No.	Depth	Colour
3100N			
4525E	378864	50c	GY
50	65	50c	BR
75	66	80c	OR/BR
4600E	67	40c	BR/GY
25	68	30c	BL/BR
50	69	40c	OR/BR
75	378870	70c	OR/BR
4700E	71	50c	OR/BR
25	72	30c	OR/BR
50	73	60c	OR/BR
75	74	70c	OR
4800E	75	90c	OR/BR
25	76	60c	OR/BR
50	77	50c	OR/BR
75	78	60c	OR/BR
4900E	378879	50c	OR/BR

648

599784 (15)

15 SEP REC'D

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
Phone (09) 458 7999
Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 23.3.08.03844

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
0983	

DATE RECEIVED	RESULTS REQUIRED
28/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
10	12/09/86	1	108

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
	378771/797,378799/879	SO	Prep: 017,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	378771/378797,378799/879	PU							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

South Hatfield
Soil Samps.
3000 N

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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649

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599785

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	1 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378771 *STD 5	40	170	160	<0.5	25	78	640	15	240
2	378772	35	5	45	<0.5	25	11	390	80	270
3	378773	10	10	20	<0.5	15	14	490	20	180
4	378774	5	<5	15	<0.5	10	3	460	30	220
5	378775	5	15	35	<0.5	10	3	440	25	250
6	378776	10	5	40	<0.5	15	5	610	20	240
7	378777	5	<5	25	<0.5	15	6	750	30	280
8	378778	5	5	30	<0.5	10	3	750	15	260
9	378779	5	<5	20	<0.5	10	2	770	35	260
10	378780	5	<5	20	<0.5	10	1	570	8	270
11	378781	5	<5	40	<0.5	20	2	380	25	270
12	378782	5	<5	25	<0.5	10	6	650	15	290
13	378783	5	10	25	<0.5	10	1	920	15	280
14	378784	5	<5	20	<0.5	10	3	1000	25	280
15	378785	5	5	30	<0.5	15	2	860	15	290
16	378786	5	<5	40	<0.5	10	3	800	5	350
17	378787	5	10	15	<0.5	10	3	690	30	300
18	378788	5	<5	95	<0.5	15	8	840	10	270
19	378789	5	<5	90	0.5	15	6	910	25	240
20	378790	5	<5	35	<0.5	10	2	630	6	310
21	378791	10	<5	50	0.5	10	2	670	7	270
22	378792	15	5	55	0.5	15	2	460	30	250
23	378793	10	<5	65	<0.5	15	2	790	10	260
24	378794	10	5	65	<0.5	15	1	540	30	270
25	378795	10	<5	55	<0.5	10	7	270	<5	390

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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599786

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	2 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378796	10	<5	85	<0.5	20	12	450	20	340
2	378797 *STD 5	40	170	170	<0.5	30	79	650	10	250
3	378799	5	<5	40	<0.5	15	2	460	20	370
4	378800	5	<5	35	<0.5	10	<1	780	<5	390
5	378801	5	<5	30	0.5	15	<1	630	<5	390
6	378802	5	<5	30	0.5	20	<1	350	35	410
7	378803	5	<5	25	0.5	15	1	670	10	370
8	378804	5	<5	40	<0.5	15	1	570	9	310
9	378805	5	<5	40	<0.5	15	1	830	25	290
10	378806	5	<5	25	<0.5	15	3	670	7	280
11	378807	5	<5	30	<0.5	15	4	650	25	320
12	378808	5	<5	40	<0.5	15	5	660	10	290
13	378809	5	<5	40	<0.5	15	3	750	45	270
14	378810	5	<5	20	<0.5	15	1	720	<5	330
15	378811	5	<5	20	<0.5	10	2	450	<5	390
16	378812	5	10	35	0.5	15	1	440	30	370
17	378813	5	<5	60	<0.5	10	6	380	<5	380
18	378814	10	<5	30	<0.5	15	3	420	6	390
19	378815	5	10	30	<0.5	15	5	460	25	410
20	378816	10	<5	45	<0.5	15	4	510	5	390
21	378817	10	15	35	0.5	15	<1	1500	6	380
22	378818	10	20	30	0.5	15	1	410	30	390
23	378819	5	20	25	0.5	15	3	600	<5	440
24	378820	5	25	25	0.5	15	1	330	7	390
25	378821	5	20	25	0.5	15	2	300	25	360

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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599787

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	3 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378822	5	15	30	0.5	10	3	450	<5	370
2	378823	5	15	25	<0.5	10	<1	680	5	270
3	378824	5	15	35	<0.5	15	4	500	30	370
4	378825	<5	20	30	<0.5	15	3	440	5	380
5	378826	<5	20	25	0.5	10	3	480	8	330
6	378827	<5	15	20	0.5	15	<1	450	25	320
7	378828	<5	<5	20	0.5	10	1	510	5	300
8	378829	<5	15	25	0.5	10	7	320	5	360
9	378830	<5	30	30	0.5	20	5	290	40	390
10	378831	<5	15	30	<0.5	15	<1	290	<5	390
11	378832	<5	<5	35	<0.5	20	3	280	30	360
12	378833	<5	20	20	0.5	15	<1	220	<5	370
13	378834	<5	10	20	0.5	10	3	460	5	340
14	378835	<5	15	15	<0.5	15	<1	370	25	340
15	378836	5	25	20	<0.5	15	2	490	<5	330
16	378837	5	20	20	0.5	15	1	370	9	330
17	378838	10	<5	40	<0.5	20	<1	340	20	230
18	378839	5	5	20	0.5	20	<1	400	7	280
19	378840	5	25	30	0.5	15	4	440	9	300
20	378841	10	55	85	0.5	45	8	340	260	260
21	378842	10	20	50	0.5	35	<1	420	70	350
22	378843	10	25	45	0.5	35	8	780	35	370
23	378844	10	30	35	<0.5	45	2	300	75	240
24	378845	5	15	25	0.5	35	7	290	100	310
25	378846	5	<5	25	<0.5	45	6	240	240	250

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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652

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599788

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.05.03844	12/09/86	0983	4 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378847	5	5	20	<0.5	35	4	310	260	240
2	378848	<5	15	20	<0.5	25	2	250	180	250
3	378849	<5	20	20	<0.5	25	1	230	160	340
4	378850	<5	15	20	<0.5	20	<1	240	120	310
5	378851	<5	10	15	<0.5	20	<1	150	140	270
6	378852	5	<5	10	0.5	10	3	140	160	350
7	378853	5	5	10	<0.5	15	2	140	130	280
8	378854	<5	<5	10	<0.5	15	3	230	150	260
9	378855	<5	<5	10	<0.5	15	5	200	230	280
10	378856	5	<5	35	<0.5	30	4	75	270	270
11	378857	<5	<5	20	<0.5	30	4	230	170	260
12	378858	5	10	30	<0.5	60	8	270	280	240
13	378859	<5	10	15	0.5	35	5	240	250	260
14	378860	<5	10	25	<0.5	45	8	250	320	230
15	378061	<5	<5	20	<0.5	55	11	260	380	220
16	378862	<5	10	15	<0.5	55	18	220	360	240
17	378863	<5	5	15	<0.5	55	20	170	230	220
18	378864	5	5	15	<0.5	30	8	85	240	290
19	378865	10	<5	15	<0.5	45	10	170	310	250
20	378866	10	5	20	<0.5	65	25	270	220	250
21	378867	5	5	10	<0.5	45	19	130	270	260
22	378868	5	10	15	<0.5	40	10	120	270	260
23	378869	10	5	40	<0.5	75	22	210	260	230
24	378870	10	20	20	0.5	65	18	200	310	200
25	378871	15	10	30	<0.5	100	23	220	370	190

Results in ppm unless otherwise specified
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653

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

599789

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	5 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378872	10	15	25	0.5	75	20	190	280	200
2	378873	20	20	30	0.5	100	27	290	340	180
3	378874	15	5	20	0.5	70	22	250	300	210
4	378875	20	10	30	0.5	55	15	310	100	230
5	378876	15	<5	35	<0.5	40	12	300	45	230
6	378877	10	10	35	<0.5	60	15	320	210	240
7	378878	10	5	35	0.5	40	18	300	35	220
8	378879	10	5	20	<0.5	35	10	350	25	210
9										
10										
11										
12										
13										
14										
15										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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654

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599790

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	6 OF 10

TUBE No.	SAMPLE No.	Ti
1	378771 X STD	3350
2	378772	2850
3	378773	2900
4	378774	4100
5	378775	3950
6	378776	3100
7	378777	3500
8	378778	3500
9	378779	3400
10	378780	3800
11	378781	2900
12	378782	3750
13	378783	3300
14	378784	3100
15	378785	3400
16	378786	3600
17	378787	3250
18	378788	3150
19	378789	2850
20	378790	3650
21	378791	3500
22	378792	3300
23	378793	3000
24	378794	3050
25	378795	2850

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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655

ANALABS

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

599791

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	7 OF 10

TUBE No.	SAMPLE No.	Ti
1	378796	2850
2	378797 STD S	3350
3	378799	2500
4	378800	2400
5	378801	2900
6	378802	3100
7	378803	2650
8	378804	2200
9	378805	2450
10	378806	2350
11	378807	3000
12	378808	2700
13	378809	2600
14	378810	3100
15	378811	3000
16	378812	2550
17	378813	2350
18	378814	2800
19	378815	3000
20	378816	3100
21	378817	2500
22	378818	3000
23	378819	3400
24	378820	2850
25	378821	2750

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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656

ANALABS

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

599792

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.03.03844	12/09/96	0983	8 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378822	2600									
2	378823	2200									
3	378824	3050									
4	378825	2950									
5	378826	2400									
6	378827	2400									
7	378828	2550									
8	378829	2450									
9	378830	2950									
10	378831	2900									
11	378832	2800									
12	378833	2750									
13	378834	2900									
14	378835	2850									
15	378836	2550									
16	378837	2600									
17	378838	2400									
18	378839	2450									
19	378840	2950									
20	378841	4200									
21	378842	4050									
22	378843	4700									
23	378844	3750									
24	378845	3100									
25	378846	3600									

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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657

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

599793

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	9 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378847	3750									
2	378848	3700									
3	378849	3750									
4	378850	3150									
5	378851	3850									
6	378852	3800									
7	378853	4300									
8	378854	3300									
9	378855	3250									
10	378856	3500									
11	378857	4300									
12	378858	2900									
13	378859	3150									
14	378860	3500									
15	378861	3250									
	378862	3500									
17	378863	2850									
18	378864	3700									
19	378865	3850									
20	378866	3200									
21	378867	3600									
22	378868	3600									
23	378869	3400									
24	378870	3300									
25	378871	3250									

Results in ppm unless otherwise specified
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X = element concentration is below detection limit
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658

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

599794

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03844	12/09/86	0983	10 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378872	3900									
2	378873	3000									
3	378874	3900									
4	378875	3200									
5	378876	2900									
6	378877	3050									
7	378878	2700									
8	378879	3350									
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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659 599795 (16)

Project South Hatfield Analyse for Cu, Pb, Zn, Ag, As, Ba

Co-ordinate	Sample No.	Depth	Colour
2600N			
2400E	378880	no sample * STD 5	
25	81	60c	BL/BR
50	82	30c	GY
75	83	40c	BL/BR
2500E	84	20c	GY/BR
25	85	40c	OR/BR
50	86	15c	GY/BR
75	87	10c	OR/BR
2600E	88	50c	OR/BR/GY
25	89	80c	OR/BR
50	378890	40c	OR/BR/GY
75	91	60c	OR/BR
2700E	92	no sample *	
25	93	no sample *	
50	94	no sample *	
75	95	no sample *	
2800E	96	no sample *	
25	97	60c	BL/BR
50	98	40c	BR/GY
75	378899	60c	BL/BR
2900E	378900	50c	BR/GY
25	01	60c	BL/BR
50	02	30c	BR
75	03	60c	BR
3000E	04	40c	YW/OR
25	05	70c	OR/BR
50	06	50c	GY/BR
75	07	60c	BL/OR
3100E	08	40c	GY/BR
25	09	80c	BL/BR
3150E	378910	80c	GY

Co-ordinate	Sample No.	Depth	Colour
2600N			
3175E	378911	60c	BL/BR
3200E	12	70c	BK/WH/BR
25	13	70c	BL/BR
50	14	60c	BK/BR
75	15	70c	BK
3300E	16	40c	WH
25	17	no sample * STD 5	
50	18	50c	BR/GY
75	19	50c	BL/BR/OR
3400E	378920	50c	BR/GY
25	21	70c	BL/BR
50	22	40c	GY
75	23	70c	OR/BR
3500E	24	50c	YW/BR
25	25	60c	OR/BR
50	26	50c	OR/BR
75	27	50c	OR/BR
3600E	28	80c	BR
25	29	50c	OR/BR
50	378930	60c	BR
75	31	70c	GR/OR/BR
3700E	32	40c	GY/BR
25	33	90c	OR/BR
50	34	40c	GY/BR
75	35	60c	OR/BR
3800E	36	50c	GY
25	37	40c	OR/BR
50	38	no sample *	
75	39	80c	GR/BR
3900E	378940	50c	GY/BR
25	378941	40c	OR/WH/BR

660

599796

(16)

Project South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Ordinate	Sample No.	Depth	Colour
2600N			
3950E	378942	30c	GY/BR
75	43	60c	BR
4000E	44	40c	GY/BR
25	45	40c	OR/WH/BR
50	46	40c	GY
75	47	50c	WH/BR
4100E	48	30c	GY/BR
25	49	50c	OR/BR
50	378950	30c	BR/GY
75	51	50c	OR/BR
4200E	52	50c	GY/BR
25	53	70c	OR/BR
50	54	50c	BR/GY
75	55	70c	OR/BR/GY
4300E	56	60c	GY
25	57	70c	OR/BR
50	58	100c	GY
75	59	70c	OR/BR
4400E	378960	50c	GY
25	61	60c	OR/BR
50	62	50c	OR/BR/GY
75	63	60c	OR/BR
4500E	64	40c	GY
25	65	60c	GY/BL/BR
50	66	40c	BL/GY
75	67	no sample * STD	5
4600E	68	50c	BR
25	69	70c	OR/OR
50	378970	50c	OR/BR/GY
75	71	60c	OR/BR
4700E	378972	70c	OR/BR

Ordinate	Sample No.	Depth	Colour
2600N			
4725E	378973	60c	OR/BR
50	74	80c	OR/BR
75	75	50c	OR/BR
4800E	76	50c	OR/BR
25	77	70c	OR/BR
50	78	60c	OR/BR
75	79	60c	OR/BR
4900E	378980	40c	OR/BR
25	81	50c	OR/BR
50	82	50c	OR/BR
75	83	50c	OR/BR
5000E	84	50c	BR
25	85	60c	BR/BR/BR
50	86	50c	GY/BR
75	87	60c	GY/BR
5100E	88	50c	GY
25	89	60c	OR/BR
50	378990	60c	OR/BR
75	91	80c	BR/GY/BR
5200E	92	70c	GY/OR/BR
25	93	60c	GY/WH
50	94	60c	OR/BR
75	95	70c	OR/BR
5300E	378996	60c	OR/BR

661

599797 (16)

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
Telex AA92560
TLX: AA 59224

ANALYTICAL REPORT No. 23.3.08.03845

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
0984	

DATE RECEIVED	RESULTS REQUIRED
28/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
			111

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
	Various	SO	Prep: 017,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	Various	PU							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

South Hatfield
Soil samples
2600N

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
wh[illegible]le 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
ro[illegible]	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
so[illegible]	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pu[illegible]	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
he[illegible]y mineral	HM					inductively coupled plasma	ICP

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662

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599798

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	1 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378880	* STD. 5 40	150	165	1.0	25	86	660	20	250
2	378881	10	<5	20	<0.5	20	7	290	60	340
3	378882	10	<5	15	<0.5	15	6	610	15	350
4	378883	5	<5	15	<0.5	15	6	480	50	350
5	378884	5	<5	15	<0.5	15	7	380	20	400
6	378885	5	10	15	<0.5	20	5	350	25	390
7	378886	10	<5	20	<0.5	20	5	190	55	490
8	378887	10	5	40	<0.5	10	5	880	<5	370
9	378888	15	20	75	0.5	15	13	450	10	350
10	378889	10	15	130	0.5	15	9	470	15	350
11	378890	10	15	50	<0.5	10	9	430	10	430
12	378891	10	<5	35	0.5	15	11	490	25	420
13	378897	10	5	20	<0.5	15	5	340	10	360
14	378898	10	10	55	0.5	10	7	460	<5	360
15	378899	10	<5	65	1.0	15	8	390	55	280
16	378900	10	15	30	0.5	20	7	690	20	270
17	378901	10	<5	25	1.0	10	8	550	10	340
18	378902	25	5	45	1.0	15	8	960	25	250
19	378903	10	25	20	<0.5	10	6	290	15	270
20	378904	10	<5	45	1.0	10	5	580	<5	240
21	378905	10	10	40	<0.5	10	5	680	<5	240
22	378906	10	<5	10	<0.5	15	6	310	35	260
23	378907	5	<5	10	1.0	10	5	220	15	220
24	378908	5	<5	20	<0.5	15	4	380	35	250
25	378909	10	5	20	0.5	15	8	620	15	250

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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663

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599799

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	2 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378910	10	<5	45	<0.5	15	9	590	15	270
2	378911	10	30	15	<0.5	15	9	800	40	240
3	378912	5	<5	15	<0.5	10	6	640	<5	260
4	378913	5	<5	15	<0.5	15	7	440	15	260
5	378914	5	15	15	<0.5	20	7	420	55	240
6	378915	5	<5	15	<0.5	15	4	390	20	270
7	378916	5	10	10	0.5	15	3	300	10	280
8	378917 *STD.	35	150	165	1.0	25	71	630	20	240
9	378918	5	<5	15	<0.5	15	6	430	15	280
10	378919	5	20	20	<0.5	15	13	410	8	340
11	378920	5	<5	30	<0.5	15	5	480	25	340
12	378921	5	<5	40	<0.5	15	7	480	5	340
13	378922	5	10	25	<0.5	15	7	280	8	330
14	378923	5	5	25	1.0	15	7	380	15	350
15	378924	5	<5	20	0.5	10	7	450	10	350
16	378925	10	<5	15	<0.5	45	2	340	20	330
17	378926	5	<5	30	<0.5	15	5	570	20	300
18	378927	5	<5	25	<0.5	10	2	610	15	260
19	378928	5	<5	40	1.0	15	6	910	10	220
20	378929	5	10	35	<0.5	15	8	720	25	260
21	378930	5	15	30	<0.5	25	6	580	8	290
22	378931	5	10	25	<0.5	25	7	600	20	310
23	378932	5	<5	25	0.5	15	6	450	<5	300
24	378933	5	<5	10	<0.5	10	3	410	10	390
25	378934	10	5	20	<0.5	20	8	430	100	330

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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664

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599800

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	3 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378935	5	10	15	<0.5	30	2	380	20	340
2	378936	10	5	25	0.5	30	2	460	55	330
3	378937	10	20	40	<0.5	35	5	300	230	240
4	378939	5	<5	10	<0.5	15	2	150	35	350
5	378940	5	<5	10	<0.5	15	2	250	35	330
6	378941	5	<5	15	<0.5	20	2	250	45	270
7	378942	5	5	20	<0.5	25	1	350	50	290
8	378943	5	<5	15	<0.5	15	2	460	25	300
9	378944	5	<5	25	<0.5	15	3	400	30	370
10	378945	5	<5	20	<0.5	15	2	450	45	310
11	378946	5	<5	40	<0.5	15	9	670	5	260
12	378947	10	15	30	<0.5	25	2	610	75	260
13	378948	5	<5	20	<0.5	15	1	540	6	290
14	378949	5	<5	25	<0.5	15	2	670	7	310
15	378950	5	<5	25	<0.5	10	<1	340	20	250
16	378951	5	<5	20	<0.5	20	2	460	<5	252
17	378952	10	<5	50	0.5	20	10	340	10	300
18	378953	10	<5	40	<0.5	25	18	610	50	400
19	378954	10	10	35	<0.5	25	7	830	30	290
20	378955	10	<5	15	1.0	25	6	250	85	280
21	378956	10	<5	20	<0.5	30	6	280	55	290
22	378957	10	<5	15	<0.5	25	10	310	140	280
23	378958	10	<5	20	0.5	35	11	310	170	260
24	378959	10	10	20	0.5	40	19	460	180	220
25	378960	10	10	25	1.5	55	12	300	230	220

Results in ppm unless otherwise specified
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665

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599801

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	4 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378961	10	20	15	1.5	35	16	310	190	200
2	378962	10	<5	15	<0.5	30	11	280	200	260
3	378963	10	<5	10	<0.5	30	12	320	160	240
4	378964	10	<5	15	<0.5	25	9	300	150	250
5	378965	10	<5	10	<0.5	10	8	190	150	260
6	378966	5	<5	10	<0.5	15	3	240	90	240
7	378967 *STD.5	40	160	165	<0.5	25	68	670	30	240
8	378968	15	<5	15	<0.5	40	7	330	240	220
9	378969	10	<5	10	<0.5	20	3	310	140	210
10	378970	10	<5	10	<0.5	30	4	250	300	220
11	378971	10	<5	10	0.5	25	8	340	260	220
12	378972	10	15	10	<0.5	40	4	280	270	220
13	378973	10	<5	10	<0.5	50	6	290	300	220
14	378974	10	<5	10	<0.5	55	4	270	350	200
15	378975	10	<5	10	<0.5	55	3	280	290	220
16	378976	10	<5	15	<0.5	60	5	240	360	220
17	378977	10	<5	20	<0.5	55	2	150	430	180
18	378978	10	<5	15	<0.5	50	4	150	410	200
19	378979	10	5	10	0.5	60	4	180	290	220
20	378980	10	5	15	<0.5	60	4	190	400	220
21	378981	10	<5	10	<0.5	50	4	140	370	210
22	378982	15	<5	30	<0.5	80	5	160	350	200
23	378983	10	<5	15	1.0	60	3	150	310	200
24	378984	10	<5	10	0.5	45	1	140	400	230
25	378985	10	15	15	0.5	35	4	150	340	310

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

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665

ANALABS

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

599802

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	5 OF 10

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378986	10	<5	25	<0.5	40	1	230	260	240
2	378987	5	<5	5	0.5	15	<1	85	190	230
3	378988	5	<5	10	1.5	40	<1	100	270	290
4	378989	20	<5	40	2.0	60	9	340	150	230
5	378990	20	<5	55	<0.5	60	4	150	240	180
6	378991	10	25	15	0.5	20	3	120	110	240
7	378992	10	15	15	0.5	20	<1	110	120	270
8	378993	5	<5	5	<0.5	20	<1	15	100	210
9	378994	10	<5	50	0.5	25	2	220	90	250
10	378995	10	15	80	<0.5	30	1	180	65	220
11	378996	20	15	90	<0.5	25	4	360	40	250
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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667

ANALABS

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

599803

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	6 OF 10

TUBE No.	SAMPLE No.	Ti
1	378880	3350
2	378881	2750
3	378882	2700
4	378883	2750
5	378884	3550
6	378885	3550
7	378886	4550
8	378887	2700
9	378888	2400
10	378889	3000
11	378890	3600
12	378891	3100
13	378897	2850
14	378898	2450
15	378899	2150
	378900	1750
17	378901	3750
18	378902	2500
19	378903	4850
20	378904	2300
21	378905	2900
22	378906	2450
23	378907	2350
24	378908	2250
25	378909	2700

* 5 STD.

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

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

599804

666

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.06.03845	15/09/86	0984	7 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378910	2300									
2	378911	2100									
3	378912	2500									
4	378913	3100									
5	378914	2750									
6	378915	3000									
7	378916	2200									
8	378917 AST'D. 5	3250									
9	378918	2300									
10	378919	2850									
11	378920	2450									
12	378921	3500									
13	378922	2550									
14	378923	2650									
15	378924	2750									
	378925	2500									
17	378926	2050									
18	378927	2150									
19	378928	1800									
20	378929	2100									
21	378930	2050									
22	378931	2300									
23	378932	2500									
24	378933	3350									
25	378934	2900									

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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669

ANALABS

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

599805

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/86	0984	8 OF 10

TUBE No.	SAMPLE No.	Ti
1	378935	3100
2	378936	2750
3	378937	2600
4	378939	3100
5	378940	3400
6	378941	2700
7	378942	3000
8	378943	2900
9	378944	3200
10	378945	2550
11	378946	2250
12	378947	2300
13	378948	2300
14	378949	2350
15	378950	2200
16	378951	2000
17	378952	4250
18	378953	5050
19	378954	2950
20	378955	2850
21	378956	2400
22	378957	2750
23	378958	2750
24	378959	1950
25	378960	2600

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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670

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

599806

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.09.03845	15/09/86	0784	9 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378961	3250									
2	378962	3500									
3	378963	3600									
4	378964	4000									
5	378965	3400									
6	378966	2900									
7	378967 X STD.	5 3400									
8	378968	3900									
9	378969	4050									
10	378970	3450									
11	378971	4250									
12	378972	3650									
13	378973	3600									
14	378974	3350									
15	378975	3650									
16	378976	3350									
17	378977	3050									
18	378978	3350									
19	378979	3150									
20	378980	3550									
21	378981	3300									
22	378982	4150									
23	378983	3550									
24	378984	3250									
25	378985	3500									

Results in ppm unless otherwise specified
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X = element concentration is below detection limit
— = element not determined

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599807

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03845	15/09/66	0984	10 OF 10

TUBE No.	SAMPLE No.	Ti									
1	378986	3100									
2	378987	3200									
3	378988	3150									
4	378989	4800									
5	378990	4400									
6	378991	4900									
7	378992	3500									
8	378993	2700									
9	378994	5650									
10	378995	5250									
11	378996	4850									
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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599808 (17)

ject Boundary Prospect Analyses For

Ordinate	Sample No.	Depth	Colour
050N			
2600E	379534	60 c	OR/OR
25	35	50 c	OR/BR
50	36	60 c	OR/OR
75	37	40 c	OR/BR
2700E	38	40 c	GY
12.5	39	60 c	OR/OR/GY/BL
25	379540	60 c	OR/OR
37.5	41	40 c	OR/BR
50	42	60 c	OR/OR
62.5	43	90 c	OR
75	44	70 c	OR/OR
87.5	45	40 c	OR
2800E	46	no sample	
12.5	47	no sample	
25	48	90 c	BL
37.5	49	80 c	GY
50	379550	no sample	
62.5	51	no sample	
75	52	no sample	
87.5	53	no sample	
2900E	54	40 c	OR/BR
12.5	55	60 c	BR/GY
25	56	40 c	BL/BR
37.5	57	50 c	BR/GY
50	58	70 c	BL
62.5	59	40 c	BR/GY
75	379560	50 c	GY/BR
87.5	61	40 c	BR/GY
3000E	62	50 c	GY/BR
12.5	63	50 c	GY/BR
50	379564	70 c	GY/BR

Ordinate	Sample No.	Depth	Colour
3050N			
3075E	379565	60 c	BR/GY
3100E	379566	50 c	GY/BR

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599809 (17)

ject Boundary Prospect Analyses for

dinate	Sample No.	Depth	Colour
3000N			
2712.5E	379567	40c	OR/BR
37.5	68	50c	OR/BR
62.5	69	40c	BR
87.5	379570	40c	GY
2812.5E	[illegible]	30c	GY
37.5	72	30c	OR/BR
62.5E	73	no sample	
87.5	74	no sample	
2937.5E	75	60c	OR/BR
37.5	76	40c	YW/BR
62.5	77	30c	GY
2987.5E	379578	70c	YW/BR

o Ordinate	Sample No.	Depth	Colour

Project Boundary Prospect Analyses For

Ordinate	Sample No.	Depth	Colour
2950N			
2600E	379587	60c	OR
25	88	40c	OR/BR
50	89	70c	OR
75	379590	70c	BR/GY
2700E	91	70c	OR/BR
12.5	92	40c	GY/BR/OR
25	93	50c	BR
37.5	94	70c	GY/BR
50	95	60c	WH/BR
62.5	96	60c	GY/BR/OR
75	97	70c	GY/OR
87.5	98	40c	BR/GY
2800E	99	80c	GY/OR
12.5	379600	30c	OR/BR/GY
25	01	no sample * STD.	
37.5	02	no sample	
50	03	50c	OR
62.5	04	70c	OR/BR/GY
75	05	60c	BR/OR
87.5	06	40c	OR/BR
2900E	07	60c	BR
12.5	08	60c	GY/BR
25	09	80c	GR
37.5	379610	50c	OR/BR/GY
50	11	40c	GY/OR
62.5	12	40c	OR
75	13	60c	OR/BR
87.5	14	50c	OR/BR/GY
3000E	15	60c	BL/BR
25	16	50c	GY/OR
50	379617	40c	BR

Ordinate	Sample No.	Depth	Colour
2950N			
3075E	379618	60c	BR/GY
3100E	379619	50c	BR

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599811 (17)

Project Boundary Prospect Analyses For

Ordinate	Sample No.	Depth	Colour
2900N			
2600E	379620	60c	OR
25	21	40c	OR/BR
50	22	60c	OR/BR
75	23	50c	OR/BR
2900E	24	70c	BR
12.5	25	no sample	
25	26	no sample STD. 7	
37.5	27	no sample	
50	28	40c	BR
62.5	29	40c	OR/BR
75	379630	no sample	
87.5	31	no sample	
2800E	32	no sample	
12.5	33	no sample	
25	34	no sample	
37.5	35	60c	OR/BR
50	36	20c	GY/BR
62.5	37	60c	GY/BR
75	38	70c	OR/BR
87.5	39	60c	GY/BR
2900E	379640	60c	BL/BR
12.5	41	50c	OR/BR
25	42	70c	OR/BR
37.5	43	50c	BR/GY
50	44	60c	BR
62.5	45	50c	OR/BR
75	46	70c	OR/BR
87.5	47	60c	GY
3000E	48	no sample	
25	49	60c	GY/BR
50	379650	60c	BR

Ordinate	Sample No.	Depth	Colour
2900N			
3075E	379651	60c	GY/BR
3100E	379652	60c	GY/BR

Project Boundary Prospect Analysis for

Ordinate	Sample No.	Depth	Colour
3100N			
2600E	379501	40 c	OR/GR
25	02	60 c	OR/BR
50	03	50 c	OR
75	04	50 c	OR/GR
2700E	05	50 c	OR/BR
12.5	06	50 c	OR/BR
25	07	30 c	OR
37.5	08	50 c	OR/BR
50	09	60 c	OR
62.5	10	60 c	OR
75	11	60 c	OR
87.5	12	60 c	OR/BR
2800E	13	60 c	OR
12.5	14	50 c	OR/BR
25	15	60 c	GY/GR
37.5	16	50 c	GY/BR
50	17	70 c	BR/OR/GR
12.5	18	40 c	BR/GR
75	19	no sample * STD	
87.5	20	no sample	
2900E	21	no sample	
12.5	22	no sample	
25	23	no sample	
37.5	24	40 c	BR
50	25	40 c	OR/BR
62.5	26	40 c	OR/BR
75	27	40 c	OR/BR
87.5	28	50 c	OR/BR
3000E	29	60 c	OR/BR
25	30	40 c	BR/GY
50	31	70 c	BR

Ordinate	Sample No.	Depth	Colour
3100N			
3075E	32	50 c	BR/GY
3100E	33	40 c	BL/BR

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
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52 Murray Road, Welshpool, W.A. 6106
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Telex AA92560

17 599813
25 NOV REC'D

677

ANALYTICAL REPORT No. 23.3.08.03967

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
1440	

DATE RECEIVED	RESULTS REQUIRED
05/11/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
12	24/11/86	1	123

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	Various	SO Prep: 018							Cu,Pb,Zn,Ag,Ni/101,As/114		
	Various	SO							Ba,Cr,Zr,Ti/401		
	Various	SO							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

HAT.

Boundary Prospect
Soil Samples
2900, 2950, 3000,
3050, 3100N.

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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599814

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	1 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379501	<5	25	120	<0.5	15	13	210	15	280
2	379502	<5	5	40	<0.5	10	4	310	10	220
3	379503	10	5	40	<0.5	10	4	200	<5	210
4	379504	10	10	60	<0.5	10	4	240	10	210
5	379505	<5	5	25	<0.5	10	3	380	<5	220
6	379506	<5	10	40	<0.5	10	3	660	20	240
	379507	<5	5	40	<0.5	10	4	700	15	240
8	379508	<5	15	40	<0.5	10	2	720	25	250
9	379509	<5	10	65	<0.5	10	2	780	9	270
10	379510	<5	5	60	<0.5	10	8	650	10	230
11	379511	<5	5	40	<0.5	10	4	640	5	280
12	379512	<5	5	35	0.5	10	3	730	15	230
13	379513	<5	5	20	<0.5	10	2	930	<5	250
14	379514	<5	10	25	<0.5	10	2	290	10	260
15	379515	<5	5	40	<0.5	10	2	920	6	240
16	379516	<5	20	75	<0.5	10	2	540	15	260
	379517	<5	<5	25	<0.5	10	2	470	<5	280
18	379518	<5	10	35	<0.5	10	2	550	25	270
19	379519 * STD. 7	35	180	175	<0.5	20	61	680	20	220
20	379524	<5	5	25	<0.5	10	3	220	<5	350
21	379525	<5	5	20	<0.5	10	1	310	25	340
22	379526	<5	5	30	<0.5	10	2	290	15	380
23	379527	<5	5	30	<0.5	10	2	390	<5	370
24	379528	5	10	40	<0.5	10	2	500	25	360
25	379529	<5	5	30	<0.5	5	3	470	7	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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599815

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	2 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379530	<5	<5	25	<0.5	10	1	740	35	330
2	379531	<5	20	155	<0.5	10	2	430	<5	350
3	379532	<5	10	35	<0.5	10	1	480	15	270
4	379533	<5	<5	10	<0.5	10	1	540	7	310
5	379534	5	5	100	<0.5	15	1	930	15	220
6	379535	<5	5	30	<0.5	10	1	280	20	240
7	379536	<5	10	55	<0.5	10	1	660	10	240
8	379537	<5	5	40	<0.5	10	2	870	<5	260
9	379538	<5	5	15	<0.5	10	<1	700	40	270
10	379539	<5	5	35	<0.5	10	2	980	7	240
11	379540	<5	5	10	<0.5	5	<1	590	<5	240
12	379541	<5	<5	35	<0.5	5	1	940	10	250
13	379542	5	5	45	<0.5	10	3	850	7	210
14	379543	<5	5	65	<0.5	15	2	680	15	220
15	379544	<5	5	25	<0.5	10	1	570	5	240
16	379545	5	25	60	<0.5	10	6	660	20	240
17	379548	5	10	30	<0.5	10	5	530	5	270
18	379549	<5	5	25	<0.5	10	5	420	15	310
19	379554	<5	5	25	<0.5	10	4	710	<5	340
20	379555	<5	5	20	<0.5	10	3	420	<5	280
21	379556	<5	5	15	<0.5	5	3	350	25	370
22	379557	<5	10	40	<0.5	5	5	730	<5	340
23	379558	<5	<5	20	<0.5	10	3	780	20	370
24	379559	<5	10	25	<0.5	5	4	710	<5	350
25	379560	<5	5	20	<0.5	5	4	380	<5	360

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
	23.3.08.03967	24/11/86	1440	3 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379561	<5	15	45	<0.5	10	6	600	20	340
2	379562	<5	<5	25	<0.5	5	3	570	<5	370
3	379563	<5	5	35	<0.5	5	1	690	<5	330
4	379564	<5	10	50	<0.5	10	2	590	15	310
5	379565	<5	5	15	<0.5	5	5	420	<5	300
6	379566	<5	5	20	<0.5	5	2	600	<5	290
7	379567	<5	15	40	<0.5	10	3	600	35	240
8	379568	<5	10	65	<0.5	10	2	550	<5	260
9	379569	<5	15	35	<0.5	10	2	920	25	250
10	379570	5	<5	60	<0.5	10	8	410	5	280
11	379571	<5	20	30	<0.5	5	4	740	290	280
12	379572	10	15	110	<0.5	10	16	490	90	290
13	379575	<5	5	40	<0.5	10	3	350	20	360
14	379576	<5	<5	15	<0.5	10	<1	530	30	350
15	379577	<5	<5	15	<0.5	10	<1	380	25	380
16	379578	<5	5	25	<0.5	10	5	390	15	330
17	379587	5	20	75	<0.5	20	4	790	55	220
18	379588	<5	20	50	<0.5	15	1	910	20	220
19	379589	5	5	40	<0.5	15	2	880	30	230
20	379590	<5	10	50	<0.5	10	3	530	15	290
21	379591	<5	5	30	<0.5	10	2	280	30	300
22	379592	<5	<5	25	<0.5	15	1	440	10	320
23	379593	<5	10	20	<0.5	5	<1	470	<5	310
24	379594	<5	<5	35	<0.5	10	2	260	15	330
25	379595	<5	5	10	<0.5	15	2	90	110	190

Results in ppm unless otherwise specified
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ANALABS

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	4 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379596	<5	<5	35	<0.5	10	2	300	7	350
2	379597	<5	5	30	<0.5	5	3	200	30	350
3	379598	<5	<5	55	<0.5	10	2	330	15	330
4	379599	<5	5	25	<0.5	10	2	580	35	310
5	379600	<5	5	55	<0.5	5	5	600	15	340
6	379601 *STD.	35	150	160	<0.5	25	88	650	30	220
7	379603	5	5	140	<0.5	10	4	300	9	350
8	379604	5	5	105	<0.5	10	5	370	15	300
9	379605	5	<5	35	<0.5	10	1	310	20	360
10	379606	5	<5	25	<0.5	10	1	790	10	320
11	379607	5	<5	25	<0.5	10	1	580	10	320
12	379608	10	<5	30	<0.5	10	1	370	20	310
13	379609	10	<5	35	<0.5	15	1	540	10	350
14	379610	10	<5	30	<0.5	15	1	600	10	330
15	379611	5	5	25	<0.5	10	1	510	<5	340
16	379612	10	<5	60	<0.5	15	12	630	9	210
17	379613	10	<5	40	<0.5	15	3	570	10	220
18	379614	5	<5	20	<0.5	10	<1	380	<5	370
19	379615	5	<5	10	<0.5	10	<1	530	55	340
20	379616	5	<5	25	<0.5	10	<1	760	<5	230
21	379617	10	<5	25	<0.5	10	<1	640	35	260
22	379618	10	<5	35	<0.5	10	<1	750	9	310
23	379619	5	<5	35	<0.5	10	<1	670	20	270
24	379620	<5	<5	30	<0.5	10	<1	830	<5	220
25	379621	5	<5	35	<0.5	15	1	810	35	220

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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599818

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	5 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379622	15	<5	50	<0.5	10	1	500	25	270
2	379623	15	<5	40	<0.5	10	<1	410	<5	310
3	379624	<5	<5	25	<0.5	5	<1	420	15	350
4	379626 *STD	35	160	165	<0.5	25	83	660	15	220
5	379628	10	<5	20	<0.5	10	<1	200	40	300
6	379629	<5	<5	40	<0.5	10	2	420	20	290
7	379635	5	<5	60	<0.5	10	<1	570	5	300
8	379636	5	<5	20	<0.5	5	1	210	<5	310
9	379637	<5	<5	25	<0.5	5	<1	620	5	300
10	379638	5	<5	60	<0.5	10	3	870	5	220
11	379639	5	<5	60	<0.5	10	1	560	10	280
12	379640	5	<5	25	0.5	10	1	620	10	310
13	379641	5	<5	30	<0.5	15	2	470	5	310
14	379642	5	<5	25	<0.5	10	3	460	20	300
15	379643	10	<5	20	0.5	10	6	610	15	290
16	379644	5	<5	25	<0.5	10	4	430	10	310
17	379645	10	<5	50	<0.5	15	5	390	20	200
18	379646	5	<5	45	<0.5	15	11	660	15	260
19	379647	20	<5	25	<0.5	15	2	690	15	290
20	379649	5	<5	30	<0.5	5	2	980	15	250
21	379650	<5	<5	25	0.5	10	1	630	<5	270
22	379651	<5	<5	40	0.5	5	<1	570	15	290
23	379652	<5	<5	20	<0.5	10	<1	630	35	290
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

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599819

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	6 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
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	5	1	10	5	5
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
24	METHOD	101	101	101	101	101	114	401	401	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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ANALABS

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

599820

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	7 OF 12

TUBE No.	SAMPLE No.	Ti	Au
1	379501	2250	<0.008
2	379502	2950	0.008
3	379503	5350	0.067
4	379504	2650	<0.008
5	379505	3850	<0.008
6	379506	4150	0.008
7	379507	3550	<0.008
8	379508	3600	<0.008
9	379509	3750	0.025
10	379510	3400	<0.008
11	379511	3800	<0.008
12	379512	3500	<0.008
13	379513	3450	0.008
14	379514	2950	0.008
15	379515	2950	<0.008
16	379516	2850	<0.008
17	379517	2600	<0.008
18	379518	2700	0.008
19	379519 STD.	3550	0.008
20	379524	2950	0.050
21	379525	3000	0.017
22	379526	3050	<0.008
23	379527	3400	<0.008
24	379528	3350	<0.008
25	379529	2950	0.017

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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685

ANALABS

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

599821

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	8 OF 12

TUBE No.	SAMPLE No.	Ti	Au							
1	379530	3100	0.008							
2	379531	3200	<0.008							
3	379532	4650	<0.008							
4	379533	3250	<0.008							
5	379534	3050	<0.008							
6	379535	3350	<0.008							
7	379536	3250	<0.008							
8	379537	3400	<0.008							
9	379538	3900	<0.008							
10	379539	3400	<0.008							
11	379540	4000	<0.008							
12	379541	3100	<0.008							
13	379542	3050	<0.008							
14	379543	2850	<0.008							
15	379544	4000	<0.008							
16	379545	3550	<0.008							
17	379548	2550	<0.008							
18	379549	3250	<0.008							
19	379554	2650	<0.008							
20	379555	2300	<0.008							
21	379556	3450	<0.008							
22	379557	2950	<0.008							
23	379558	3600	<0.008							
24	379559	3550	0.017							
25	379560	3750	<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

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686

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599822

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	9 OF 12

TUBE No.	SAMPLE No.	Ti	Au							
1	379561	2900	<0.008							
2	379562	3550	<0.008							
3	379563	2850	<0.008							
4	379564	3450	0.017							
5	379565	2950	0.017							
6	379566	3200	<0.008							
	379567	4200	<0.008							
8	379568	3250	<0.008							
9	379569	3350	<0.008							
10	379570	3050	0.017							
11	379571	2500	<0.008							
12	379572	2900	<0.008							
13	379575	3100	<0.008							
14	379576	2800	<0.008							
15	379577	3450	<0.008							
16	379578	2650	<0.008							
17	379587	2850	<0.008							
18	379588	2700	<0.008							
19	379589	3050	<0.008							
20	379590	2800	<0.008							
21	379591	3000	<0.008							
22	379592	3100	<0.008							
23	379593	3100	<0.008							
24	379594	2650	<0.008							
25	379595	1800	0.017							

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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687

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

599823

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	10 OF 12

TUBE No.	SAMPLE No.	Ti	Au							
1	379596	2900	<0.008							
2	379597	2950	<0.008							
3	379598	2350	<0.008							
4	379599	2700	<0.008							
5	379600	2650	<0.008							
6	379601 X STD. 7	3500	0.008							
7	379603	2450	<0.008							
8	379604	2750	0.017							
9	379605	3150	<0.008							
10	379606	2900	0.017							
11	379607	2650	<0.008							
12	379608	2700	<0.008							
13	379609	3100	<0.008							
14	379610	2950	<0.008							
15	379611	3750	<0.008							
16	379612	3800	<0.008							
17	379613	3850	<0.008							
18	379614	3900	<0.008							
19	379615	3800	<0.008							
20	379616	1750	0.032							
21	379617	2650	<0.008							
22	379618	2700	<0.008							
23	379619	2450	<0.008							
24	379620	3150	0.008							
25	379621	3000	<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

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688

ANALABS

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599824

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	11 OF 12

TUBE No.	SAMPLE No.	Ti	Au								
1	379622	2600	<0.008								
2	379623	2500	<0.008								
3	379624	3400	<0.008								
4	379626 *STD. 7	3450	0.017								
5	379628	2800	<0.008								
6	379629	2700	<0.008								
7	379635	1800	<0.008								
8	379636	3000	<0.008								
9	379637	2750	<0.008								
10	379638	3450	<0.008								
11	379639	2300	<0.008								
12	379640	2650	<0.008								
13	379641	3200	<0.008								
14	379642	3300	<0.008								
15	379643	3400	<0.008								
16	379644	3850	<0.008								
17	379645	3750	<0.008								
18	379646	3500	<0.008								
19	379647	3650	<0.008								
20	379649	2200	<0.008								
21	379650	2400	0.017								
22	379651	2700	0.017								
23	379652	2900	<0.008								
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

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[redacted] 689

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599825

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03967	24/11/86	1440	12 OF 12

TUBE No.	SAMPLE No.	Ti	Au							
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	50	0.008							
23	UNITS	PPM	PPM							
24	METHOD	401	309							
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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ject South Hatfield 69N Analyses for Cu, Pb, Zn, Ag, As, Ba

Grid	Sample No.	Depth	Colour
00N			
1600E	378997.	70c	OR/BR
25	98.	20	gy/br
50	378999.	60c	BK/OR
75	379 000.	50	gy
00E	379001.	60c	BK/OR
25	02.	60	gy/br
50	03.	70c	Gy
75	04.	bl/gy	50
800E	05.	70c	Gy
	06.	50	or/br/gy
50	07.	70c	OR/BR
75	08.	50	or/br
900E	09.	50c	OR/BR
25	379010.	60	or/br
50	11.	50c	BR
75	12.	50	or/br
000E	13.	50c	OR
25	14.	40	or/br
50	15.	70c	BR/wh/gy/BR
75	16.	50	gy/or/br
100E	17.	70c	OR/BR
25	18.	80	gy/wh
50	19.	100c	OR/BR
75	379020.	50	or/br
200E	21.	70c	OR/BR
25	22.	50	gy/br
50	23.	80c	OR/BR/GR
75	24.	50	br/gy
300E	25.	70c	BR
25	26.	60	wh/gy
50	379027.	60c	Gy/WH

Co Ordinate	Sample No.	Depth	Colour
2200N			
75	379028.	50	gy/br
3400E	29.	80c	BR
25	379030	70	br
50	31.	80c	OR
75	32.	20	br
3500E	33.	40c	OR/BR
25	34	40	gy/br
50	35.	60c	Gy/BR
75	36.	50	gy/br
3600E	37.	70c	OR
25	38.	70	br
50	39.	50c	OR/BR
75	379040.	40	gy/br
3700E	41.	30c	Gy/BR
25	42.	40	gy/br/wh
50	43.	70c	BR
75	44	30	wh/gy
3800E	45.	50c	OR
25	46.	50	gy/br
50	47.	70c	BR
75	48.	40	gy
3900E	49.	60c	BR
25	379050	20	gy
50	51.	50c	BR
75	52	50	gy/br
4000E	53	70c	GR/BR
25	54.	50	gy
50	55.	50c	BR
75	56.	50	gy
4100E	57	60c	BR
25	379058.	50	gy/br

691 599827 (18)

Project Dhoon Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Coordinate	Sample No.	Depth	Colour
200N			
4700E	379059	60c	BR
75	379060	60	gy
4800E	61	70c	BR
25	62	20	gy/br/wh
50	63	60c	GY/OR/BR
75	64.	60	br
4900E	65.	50c	BR/OR
25	66.	70	or/br
50	67.	70c	OR
75	68.	80	or/br
4400E	69.	70c	OR/BR
25	379070.	40	or/br
50	71.	70c	OR/BR
75	72.	50	or/br
4500E	73.	70c	GR/OR
25	74.	50	or/br
50	75.	60c	OR/BR
75	76.	50	or/br
4600E	77.	60c	OR/BR
25	78.	40	or/br
50	79.	70c	OR/BR
75	379080.	50	gy/br
4700E	81	50c	GR
25	82	60	gy/br
50	83	60c	OR/BR
75	84	50	or/br
4800E	85	80c	OR/BR
25	86	50	or/br
50	87	70c	OR/BR
75	88	50	or/br
4900E	379089	100c	OR/brR

Coordinate	Sample No.	Depth	Colour
1200N			
4925E	379090	70	br
50	91	50c	GR/BR
75	92	70	or/br
5000E	93	70c	GR/BR
25	94	80.	or/br
50	95	70c	GR/OR
75	96	50	gy/br
5100E	97	60c	GR/BR
25	98	50	gy/br
50	379099	70c	OR/BR
75	379100	50	gy
5200E	01	50c	GR
25	02	40	gy
50	03	70c	GR/BR
75	04	50	gy/br
5300E	379105	60c	GR/BR

692 599828 (18)

ject South Idefield Analysis for Cu, Pb, Zn, Ag, As, Ba

dinate	Sample No.	Depth	Colour
800N			
800E	379106	70	OR/BR
25	07	50	OR/BR
50	08	50	OR/BR/RD
75	09	50	OR/BR
900	379110	60	DBR/OR
25	11	70	OR/BR/Gy
50	12	60	OR/BR
75	13	70	Gy/BR/OR
1000	14	70	OR
25	15	70	OR/BR
50	16	70	OR
75	17	60	Gy/BR/OR
3100	18	100	BR
25	19	50	LGy/BR
50	379120	60	LBR
75	21	40	LOR/BR
200	22	70	OR
25	23	70	LOR/BR
50	24	70	OR
75	25	60	Gy/BR
3300	26	80	LBR
25	27	80	OR/BR
50	28	70	BR
75	29	NO Sample ~~STD~~ 6	
3400	379130	80	OR
25	31	40	OR/BR
50	32	70	OR
75	33	80	LOR/BR
3500	34	70	Gy/OR
25	35	50	OR/BR/Gy
50	379136	80	Gy/OR/BR

Co Ordinate	Sample No.	Depth	Colour
1800N			
75	379137	50	Gy/OR/BR
3600	38	50	Gy/OR/BR
25	39	50	Gy
50	379140	70	LBR
75	41	30	OR/BR
3700	42	90	OR
25	43	60	LOR/BR
50	44	60	BR
75	45	20	Gy/wh
3800	46	60	LBR/OR
25	47	50	Gy/wh
50	48	40	LBR/OR
75	49	50	Gy/wh
3900	379150	70	LBR/OR
25	51	40	Gy/wh
50	52	60	LBR/OR
75	53	60	Gy/OR/BR
4000	54	60	LBR/OR
25	55	50	Gy/BR
50	56	60	LBR/OR
75	57	50	OR/BR
4100	58	60	wh/OR
25	59	50	Gy/wh
50	379160	70	wh/OR
75	61	50	Gy/wh
4200	62	60	wh/OR
25	63	20	Gy/wh
50	64	50	Gy
75	65	20	Gy/BR/OR
4300	379166	70	OR/BR

599829

(18)

Project South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Ordinate	Sample No.	Depth	Colour
1400 N			
3000 E	379167	30	OR/BR/Gy
25	68	60	Wh
50	69	50	Gy/BR
75	3791 70	60	OR/BR
3100 E	71	40	OR/BR
25	72	40	OR/BR
50	73	60	OR/BR
75	74	60	OR/BR
3200 E	75	50	OR/BR
25	76	50	OR/BR
50	77	50	OR/BR
75	78	60	OR/BR
3300 E	79	40	OR/BR
25	3791 80	70	OR/BR
50	81	80	BR
75	82	70	OR/BR
3400 E	83	60	yw/OR
25	84	70	OR/BR
50	85	50	Gy/BR
75	86	50	OR/BR
3500 E	87	40	OR/BR
25	88	60	OR/BR
50	89	50	OR/BR
75	3791 90	70	OR/BR
3600 E	91	40	Gy/BR
25	92	50	Lg/BR/OR
50	93	90	Gy/BR
75	94	60	Lg/OR/BR
3700 E	95	50	Gy
25	96	70	OR/BR
50	97	50	OR/BR

Ordinate	Sample No.	Depth	Colour
1400 N			
3775 E	3791 98	[illegible]	[illegible]
3800 E	3791 99	40	OR/BR
25	3792 00	60	OR
50	01	60	OR/BR
75	02	60	Gy
3900 E	03	60	BR
25	04	20	Wh/BR
50	05	50	Gy/BR
75	06	60	OR/BR
4000 E	07	40	yw/BR
25	08	40	BR
50	09	50	BR/Gy
75	379210	70	OR/Wh
4100 E	11	40	BR/Gy
25	12	40	BR/Wh
50	13	40	BR/Gy
75	14	80	Wh/GR
4200 E	15	60	Gy
25	16	70	Wh
50	17	50	Gy/Wh
75	18	70	Wh
4300 E	19	50	Gy/Wh
25	3792 20	70	Wh/OR
50	21	60	Gy/Wh
75	22	70	Wh
4400 E	23	70	Gy/Wh
25	24	80	Lg/OR/BR
50	25	70	Gy/Wh
75	26	90	Lg/BR
4500 E	27	50	Gy/Wh
25	3792 28	60	Lg/BR/Gy

694 599830 (18)

Project South Hatfield Analyses for Cu, Pb, Zn, Ag, As, Ba

Coordinate	Sample No.	Depth	Colour	Coordinate	Sample No.	Depth	Colour
400N							
45 50E	379229	50	Gy				
75	379230	40	Wh				
4600	31	60	Gy				
25	32	60	OR/Wh				
50	33	70	Gy				
75	34	90	Wh				
4700	35	70	OR/BR				
25	36	60	OR				
50	37	40	OR/BR				
75	38	50	BR				
4800	39	40	Gy				
25	379240	70	Wh				
50	41	40	Gy				
75	42	60	OR/BR				
4900	43	60	BR				
25	44	70	OR/BR				
50	45	60	BR				
75	46	70	BR				
5000	47	70	BR				
25	48	70	BR				
50	49	80	OR/BR				
75	379250	70	Lg/BR				
5100	51	90	OR/BR				
~~25~~	~~52~~						
~~50~~	~~53~~						
~~75~~	~~54~~						
~~5200~~	~~379255~~						

695

ANALABS

599831

(18)

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

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

TLX: AA 59224

Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04016

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
1455	

DATE RECEIVED	RESULTS REQUIRED
27/11/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
22	16/12/86	1	255

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
	378997/379251	SO Prep: 017,013							Cu,Pb,Zn,Ag,Ni/101,As/114		
	378997/379251	SO							Ba,Cr,Zr,Ti/401		

RESULTS TO

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

RESULTS TO

REMARKS

HAT.

South Hatfield Soils
1400N, 1800N, 2200N

STATE OF SAMPLES		ANALYSIS — PREPARATION				ANALYSIS — METHOD	
hole 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
il	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
ulp	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
eavy mineral	HM					inductively coupled plasma	ICP

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696

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599832

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	1 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378997	<5	10	30	<0.5	10	5	690	10	260
2	378998	<5	10	45	<0.5	10	4	590	<5	300
3	378999	<5	5	10	<0.5	5	3	160	15	310
4	379000	<5	5	20	<0.5	5	4	410	<5	290
5	379001	<5	5	10	<0.5	5	4	390	10	310
6	379002	<5	<5	30	<0.5	10	5	590	<5	330
7	379003	<5	5	20	<0.5	10	5	440	30	260
8	379004	<5	5	10	<0.5	5	3	260	20	340
9	379005	<5	10	20	<0.5	<5	4	490	<5	310
10	379006	<5	10	35	<0.5	10	7	270	15	270
11	379007	15	10	75	<0.5	15	7	210	<5	210
12	379008	<5	10	35	<0.5	10	6	390	<5	330
13	379009	<5	10	65	<0.5	10	15	630	6	170
14	379010	<5	10	50	<0.5	15	4	690	25	200
15	379011	<5	10	25	<0.5	10	4	590	7	220
16	379012	<5	10	40	<0.5	15	6	330	10	210
17	379013	<5	5	35	0.5	10	5	400	25	200
18	379014	<5	10	30	<0.5	10	5	320	5	250
19	379015	<5	5	30	<0.5	5	4	690	15	320
20	379016	<5	10	20	<0.5	10	4	390	<5	300
21	379017	<5	5	25	<0.5	5	5	350	10	300
22	379018	15	15	45	<0.5	20	5	850	230	190
23	379019	<5	10	30	<0.5	10	7	660	25	180
24	379020	5	<5	35	<0.5	<5	1	750	<5	220
25	379021	<5	10	25	<0.5	10	4	930	15	240

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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697

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

599833

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	2 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379022	<5	10	20	<0.5	5	5	700	9	250
2	379023	<5	5	15	<0.5	5	5	620	15	270
3	379024	<5	5	20	<0.5	10	4	580	15	230
4	379025	<5	5	10	<0.5	<5	4	80	<5	310
5	379026	<5	10	10	<0.5	<5	4	550	<5	320
6	379027	<5	10	15	<0.5	5	4	440	55	320
7	379028	<5	5	35	<0.5	5	6	960	<5	310
8	379029	<5	5	50	<0.5	10	9	700	20	280
9	379030	<5	10	40	<0.5	5	6	530	7	280
10	379031	15	10	50	<0.5	15	12	520	20	220
11	379032	5	15	25	<0.5	15	9	360	10	250
12	379033	<5	5	10	<0.5	5	6	730	35	250
13	379034	<5	10	15	<0.5	5	7	610	6	240
14	379035	<5	5	15	<0.5	<5	5	460	30	340
15	379036	<5	15	10	<0.5	5	5	700	<5	220
16	379037	10	20	35	<0.5	15	7	570	7	190
17	379038	<5	10	20	<0.5	10	1	540	20	240
18	379039	<5	15	20	<0.5	10	3	580	6	240
19	379040	<5	10	20	<0.5	10	2	480	15	250
20	379041	<5	5	10	<0.5	5	2	400	<5	280
21	379042	<5	10	15	<0.5	10	2	770	<5	240
22	379043	<5	10	10	<0.5	10	2	820	25	220
23	379044	<5	5	15	<0.5	10	3	800	<5	250
24	379045	<5	5	10	<0.5	10	1	580	<5	240
25	379046	<5	<5	20	<0.5	10	1	370	25	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

AUTHORISED OFFICER

698

ANALABS

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

599834

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	3 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379047	<5	5	15	<0.5	10	2	320	<5	270
2	379048	<5	5	20	<0.5	10	1	410	<5	290
3	379049	<5	5	20	<0.5	10	1	420	25	290
4	379050	<5	<5	10	<0.5	10	1	390	<5	300
5	379051	<5	5	15	<0.5	10	1	340	<5	280
6	379052	<5	10	30	<0.5	15	1	580	30	280
7	379053	<5	<5	35	<0.5	10	1	410	<5	300
8	379054	<5	<5	30	<0.5	5	1	350	<5	240
9	379055	<5	5	15	<0.5	5	1	560	10	290
10	379056	<5	<5	15	<0.5	5	1	710	<5	310
11	379057	<5	5	15	<0.5	5	1	510	<5	320
12	379058	5	<5	65	<0.5	20	3	440	25	200
13	379059	<5	<5	20	<0.5	10	1	440	<5	280
14	379060	<5	5	15	0.5	5	1	290	6	240
15	379061	<5	5	15	<0.5	10	2	230	25	240
16	379062	<5	30	20	<0.5	5	9	370	8	210
17	379063	<5	10	25	<0.5	10	23	240	10	210
18	379064	10	20	75	<0.5	25	11	650	100	400
19	379065	<5	20	20	<0.5	5	8	300	20	190
20	379066	15	60	155	<0.5	30	27	350	35	300
21	379067	15	45	60	<0.5	20	20	460	60	290
22	379068	10	15	30	0.5	30	11	660	75	240
23	379069	5	10	20	0.5	20	4	500	85	230
24	379070	<5	15	20	0.5	30	12	380	210	210
25	379071	<5	10	20	0.5	30	9	370	210	220

Results in ppm unless otherwise specified
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699

ANALABS

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

599835

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	4 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379072	10	10	25	0.5	25	7	340	180	240
2	379073	10	15	35	0.5	40	7	420	190	200
3	379074	10	25	30	0.5	30	7	400	190	190
4	379075	<5	5	15	0.5	10	4	290	140	210
5	379076	20	25	50	0.5	35	18	440	200	170
6	379077	10	15	35	0.5	40	6	420	210	210
7	379078	5	15	25	0.5	35	5	410	270	220
8	379079	5	15	20	0.5	30	7	440	250	210
9	379080	5	15	15	0.5	10	2	310	260	240
10	379081	5	10	10	0.5	10	1	230	220	260
11	379082	<5	10	10	0.5	15	1	340	85	210
12	379083	5	15	15	<0.5	15	3	420	120	280
13	379084	5	5	15	<0.5	25	3	400	140	260
14	379085	5	15	15	<0.5	30	5	450	120	200
15	379086	10	5	20	<0.5	60	4	330	270	220
16	379087	5	5	10	<0.5	30	4	330	180	240
17	379088	5	5	15	<0.5	35	8	260	250	240
18	379089	5	5	20	<0.5	35	7	140	360	220
19	379090	10	15	30	<0.5	105	7	280	380	200
20	379091	5	10	20	0.5	50	2	170	460	210
21	379092	5	10	25	<0.5	55	6	220	400	250
22	379093	<5	<5	15	<0.5	20	4	80	230	250
23	379094	5	5	15	<0.5	30	4	210	270	240
24	379095	5	5	15	<0.5	35	3	180	290	250
25	379096	<5	10	15	0.5	30	1	190	180	280

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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AUTHORISED OFFICER

700

ANALABS

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

599836

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	5 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379097	<5	5	10	<0.5	20	2	110	250	210
2	379098	5	5	20	<0.5	30	4	140	390	210
3	379099	5	<5	10	<0.5	15	1	70	310	230
4	379100	<5	5	10	0.5	20	1	100	310	210
5	379101	<5	5	10	<0.5	10	1	50	250	220
6	379102	<5	<5	5	<0.5	10	1	150	170	230
	379103	5	5	20	<0.5	40	3	160	320	230
8	379104	<5	5	5	<0.5	15	1	50	180	200
9	379105	5	<5	10	<0.5	5	1	45	120	380
10	379106	<5	5	15	<0.5	5	2	500	6	320
11	379107	<5	15	35	<0.5	20	3	480	20	240
12	379108	20	10	25	0.5	10	3	510	<5	290
13	379109	5	15	30	<0.5	10	5	510	6	190
14	379110	<5	15	25	<0.5	10	2	400	30	210
15	379111	<5	10	25	<0.5	10	1	400	<5	200
16	379112	5	10	30	<0.5	20	2	350	40	200
17	379113	<5	10	20	<0.5	5	1	590	<5	240
18	379114	<5	10	25	<0.5	10	2	380	9	230
19	379115	10	15	50	<0.5	15	2	410	20	190
20	379116	<5	10	35	<0.5	10	2	880	<5	200
21	379117	<5	<5	20	<0.5	10	2	350	<5	290
22	379118	<5	<5	10	0.5	10	2	220	55	310
23	379119	<5	<5	15	<0.5	5	3	480	5	380
24	379120	<5	<5	10	<0.5	5	2	260	<5	330
25	379121	<5	<5	35	<0.5	10	3	350	15	320

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

.701

ANALABS

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

599837

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	6 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379122	25	<5	75	<0.5	5	7	450	120	280
2	379123	15	<5	50	<0.5	20	4	460	65	260
3	379124	5	<5	45	<0.5	15	4	370	40	290
4	379125	<5	<5	20	<0.5	10	2	470	25	340
5	379126	<5	<5	20	<0.5	5	3	670	25	270
6	379127	<5	<5	25	<0.5	15	5	600	30	200
7	379128	<5	5	20	<0.5	15	4	540	15	170
8	379129 *STD.	30	170	165	<0.5	20	88	640	30	230
9	379130	10	<5	45	<0.5	20	5	480	40	200
10	379131	10	<5	25	<0.5	15	4	310	30	180
11	379132	5	<5	50	<0.5	20	6	500	40	190
12	379133	<5	<5	20	<0.5	15	4	560	5	240
13	379134	<5	<5	10	<0.5	10	2	460	9	240
14	379135	<5	<5	10	<0.5	10	1	490	<5	220
15	379136	<5	<5	15	<0.5	15	1	370	15	230
16	379137	<5	<5	10	<0.5	10	2	550	10	260
17	379138	<5	<5	20	<0.5	10	7	630	<5	230
18	379139	<5	<5	10	<0.5	10	2	470	15	230
19	379140	<5	<5	10	<0.5	10	2	340	<5	280
20	379141	<5	<5	25	<0.5	10	3	440	20	250
21	379142	5	<5	45	<0.5	15	50	270	10	190
22	379143	<5	<5	20	0.5	10	7	380	9	300
23	379144	5	<5	30	<0.5	10	15	290	<5	260
24	379145	<5	<5	20	<0.5	10	15	360	15	270
25	379146	<5	<5	25	<0.5	15	14	390	<5	260

Results in ppm unless otherwise specified
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ANALABS

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

702

599838

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	7 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379147	<5	5	10	<0.5	5	9	310	<5	300
2	379148	<5	<5	15	<0.5	10	3	270	50	280
3	379149	<5	<5	15	<0.5	10	5	960	5	240
4	379150	<5	<5	15	<0.5	10	1	270	35	320
5	379151	<5	<5	20	<0.5	10	5	350	<5	330
6	379152	<5	<5	15	<0.5	10	1	260	<5	330
7	379153	<5	<5	20	<0.5	10	1	350	25	370
8	379154	<5	<5	10	<0.5	10	2	280	<5	370
9	379155	<5	<5	15	<0.5	10	7	160	40	320
10	379156	<5	<5	15	<0.5	10	4	250	15	300
11	379157	<5	<5	10	<0.5	15	4	360	40	290
12	379158	<5	<5	10	<0.5	10	2	400	20	280
13	379159	<5	<5	15	<0.5	10	5	300	30	240
14	379160	<5	<5	10	<0.5	10	4	460	5	230
15	379161	<5	<5	20	<0.5	10	5	520	10	200
16	379162	<5	<5	25	<0.5	10	7	300	5	300
17	379163	<5	<5	20	<0.5	10	6	220	30	250
18	379164	<5	5	20	<0.5	15	22	380	6	190
19	379165	<5	10	50	<0.5	10	34	340	20	290
20	379166	5	20	120	<0.5	30	51	640	110	350
21	379167	<5	<5	25	<0.5	10	3	360	<5	360
22	379168	<5	<5	5	<0.5	10	1	70	20	340
23	379169	<5	<5	15	<0.5	10	1	230	<5	380
24	379170	<5	<5	20	<0.5	10	1	210	35	270
25	379171	<5	10	50	<0.5	20	4	270	20	230

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AUTHORISED OFFICER

703

599839

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	8 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379172	<5	5	30	<0.5	20	3	320	60	260
2	379173	5	10	35	<0.5	20	5	320	25	250
3	379174	<5	10	35	<0.5	20	4	330	35	220
4	379175	5	5	50	<0.5	15	8	460	15	180
5	379176	<5	<5	50	<0.5	15	3	520	10	180
6	379177	<5	15	30	<0.5	10	3	420	10	200
	379178	<5	5	20	<0.5	15	5	390	30	220
8	379179	<5	10	25	<0.5	10	5	500	15	200
9	379180	<5	10	25	<0.5	15	3	410	6	240
10	379181	<5	10	30	<0.5	15	3	520	20	280
11	379182	<5	5	25	<0.5	10	3	390	<5	290
12	379183	<5	5	20	<0.5	10	2	590	<5	280
13	379184	<5	10	30	<0.5	10	4	510	10	290
14	379185	<5	<5	10	<0.5	10	1	570	15	300
15	379186	35	20	80	<0.5	25	8	770	15	250
16	379187	<5	5	45	<0.5	15	5	560	25	200
17	379188	<5	5	50	<0.5	10	3	820	10	260
18	379189	<5	5	25	<0.5	15	2	640	25	220
19	379190	<5	<5	35	<0.5	10	3	820	7	230
20	379191	<5	<5	20	<0.5	10	1	700	<5	250
21	379192	<5	<5	20	<0.5	15	1	720	30	240
22	379193	<5	<5	15	<0.5	5	1	850	<5	290
23	379194	<5	<5	15	<0.5	10	2	750	7	270
24	379195	<5	<5	15	<0.5	10	<1	250	<5	320
25	379196	<5	<5	20	<0.5	10	3	680	10	300

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

704

ANALABS

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

599840

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	9 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379197	<5	<5	20	<0.5	10	3	570	<5	270
2	379198	<5	5	20	<0.5	10	3	700	6	260
3	379199	<5	5	20	0.5	10	2	810	<5	250
4	379200	<5	5	25	<0.5	10	6	770	25	230
5	379201	<5	<5	25	<0.5	10	5	600	15	230
6	379202	<5	5	45	<0.5	15	13	560	15	210
7	379203	<5	<5	20	<0.5	10	15	640	25	210
8	379204	<5	<5	10	<0.5	10	1	620	<5	250
9	379205	<5	<5	15	<0.5	10	2	750	15	250
10	379206	<5	5	10	<0.5	5	<1	630	<5	250
11	379207	<5	5	30	<0.5	5	3	640	30	220
12	379208	<5	<5	25	<0.5	10	4	560	8	240
13	379209	<5	5	25	0.5	10	6	440	15	280
14	379210	5	<5	10	<0.5	5	2	390	15	300
15	379211	<5	<5	20	<0.5	5	5	640	<5	260
16	379212	<5	<5	15	<0.5	15	3	270	120	180
17	379213	<5	<5	20	<0.5	10	2	450	10	260
18	379214	<5	5	30	<0.5	15	1	460	30	310
19	379215	<5	<5	15	<0.5	10	1	480	25	270
20	379216	<5	<5	15	<0.5	10	<1	370	15	270
21	379217	<5	<5	10	<0.5	5	<1	390	<5	310
22	379218	<5	<5	15	<0.5	10	<1	330	15	240
23	379219	<5	5	15	<0.5	15	<1	180	110	260
24	379220	<5	<5	15	<0.5	10	4	320	50	320
25	379221	<5	<5	5	<0.5	5	<1	150	15	310

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

703

ANALABS

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

599841

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	10 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379222	<5	<5	10	0.5	10	1	240	70	280
2	379223	<5	<5	10	<0.5	5	2	190	10	360
3	379224	<5	<5	20	0.5	10	2	260	25	400
4	379225	<5	<5	15	0.5	15	3	280	40	320
5	379226	<5	5	10	<0.5	10	1	210	40	530
6	379227	<5	<5	10	0.5	10	<1	260	35	550
	379228	<5	<5	10	0.5	15	<1	370	120	420
8	379229	<5	<5	10	0.5	10	<1	410	45	280
9	379230	<5	<5	5	0.5	10	<1	230	55	270
10	379231	<5	<5	10	0.5	10	2	360	20	180
11	379232	<5	5	20	0.5	20	1	400	85	240
12	379233	<5	<5	20	<0.5	15	1	430	85	280
13	379234	15	5	20	<0.5	25	3	310	190	250
14	379235	5	<5	20	<0.5	35	7	180	250	190
15	379236	<5	5	15	<0.5	30	7	160	250	220
16	379237	10	<5	30	<0.5	55	9	270	280	200
17	379238	10	<5	25	<0.5	50	8	170	340	180
18	379239	<5	<5	20	<0.5	20	3	160	230	210
19	379240	<5	<5	10	<0.5	10	<1	220	45	270
20	379241	<5	<5	10	<0.5	10	1	220	9	180
21	379242	5	<5	20	<0.5	20	5	280	120	260
22	379243	25	<5	50	<0.5	225	8	400	200	220
23	379244	25	<5	35	<0.5	40	9	370	190	290
24	379245	35	15	65	0.5	30	8	320	190	240
25	379246	35	<5	65	<0.5	40	8	280	220	190

Results in ppm unless otherwise specified
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AUTHORISED OFFICER

706

ANALABS

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

599842

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	11 OF 22

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379247	10	<5	35	<0.5	30	8	360	280	220
2	379248	20	<5	135	<0.5	90	11	370	370	170
3	379249	20	20	115	<0.5	80	11	500	280	180
4	379250	15	25	60	<0.5	65	10	270	240	130
5	379251	20	<5	50	<0.5	100	11	390	360	190
6										
8										
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10										
11										
12										
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14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	114	401	401	401

Results in ppm unless otherwise specified
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— = element not determined

AUTHORISED OFFICER

707

ANALABS

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

599843

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	12 OF 22

TUBE No.	SAMPLE No.	Ti									
1	378997	3350									
2	378998	2800									
3	378999	3000									
4	379000	2350									
5	379001	3350									
6	379002	3100									
	379003	3150									
8	379004	4850									
9	379005	3350									
10	379006	5700									
11	379007	8700									
12	379008	4350									
13	379009	4500									
14	379010	4800									
15	379011	5300									
16	379012	4450									
17	379013	4700									
18	379014	3400									
19	379015	2800									
20	379016	2550									
21	379017	2900									
22	379018	3450									
23	379019	2700									
24	379020	2700									
25	379021	2750									

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

708

ANALABS

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

599844

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	13 OF 22

TUBE No.	SAMPLE No.	Ti
1	379022	3150
2	379023	3800
3	379024	2850
4	379025	3700
5	379026	2950
6	379027	2400
	379028	2950
8	379029	3250
9	379030	3650
10	379031	3700
11	379032	3100
12	379033	3550
13	379034	3300
14	379035	3350
15	379036	2100
1	379037	1600
17	379038	2350
18	379039	2300
19	379040	2250
20	379041	2900
21	379042	2900
22	379043	2750
23	379044	2450
24	379045	2800
25	379046	3000

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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203

ANALABS

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

599845

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	14 OF 22

TUBE No.	SAMPLE No.	Ti									
1	379047	3550									
2	379048	3350									
3	379049	3600									
4	379050	4550									
5	379051	3500									
6	379052	2400									
	379053	3050									
8	379054	1950									
9	379055	3400									
10	379056	3550									
11	379057	3450									
12	379058	5350									
13	379059	3200									
14	379060	3200									
15	379061	4400									
16	379062	3850									
17	379063	4650									
18	379064	5750									
19	379065	3950									
20	379066	3700									
21	379067	3750									
22	379068	3400									
23	379069	3350									
24	379070	3250									
25	379071	3500									

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

710

ANALABS

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

599846

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	15 OF 22

TUBE No.	SAMPLE No.	Ti									
1	379072	3350									
2	379073	3500									
3	379074	4100									
4	379075	4400									
5	379076	4200									
6	379077	3050									
◡	379078	4050									
8	379079	3800									
9	379080	4250									
10	379081	4450									
11	379082	2900									
12	379083	3400									
13	379084	3350									
14	379085	3150									
15	379086	5000									
1⁄	379087	3600									
◡ 17	379088	3750									
18	379089	3750									
19	379090	3850									
20	379091	2950									
21	379092	3950									
22	379093	3850									
23	379094	3650									
24	379095	4500									
25	379096	4700									

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

7.11

ANALABS

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

599847

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	16 OF 22

TUBE No.	SAMPLE No.	Ti
1	379097	3600
2	379098	3950
3	379099	3150
4	379100	4100
5	379101	3100
6	379102	3600
	379103	3550
8	379104	3500
9	379105	9250
10	379106	6000
11	379107	4150
12	379108	3200
13	379109	4800
14	379110	6000
15	379111	5750
16	379112	5250
17	379113	6050
18	379114	5450
19	379115	5150
20	379116	4000
21	379117	2850
22	379118	3000
23	379119	3200
24	379120	3150
25	379121	3500

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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712

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

599848

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	17 OF 22

TUBE No.	SAMPLE No.	Ti
1	379122	3800
2	379123	3000
3	379124	3500
4	379125	2850
5	379126	2900
6	379127	2850
(	379128	3200
8	379129 *STD. 6	3550
9	379130	4500
10	379131	3050
11	379132	4300
12	379133	2750
13	379134	2900
14	379135	3450
15	379136	2850
16	379137	2800
17	379138	2300
18	379139	2650
19	379140	2750
20	379141	2550
21	379142	1900
22	379143	2750
23	379144	2600
24	379145	2750
25	379146	4800

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

713

ANALABS

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

599849

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	18 OF 22

TUBE No.	SAMPLE No.	Ti									
1	379147	2950									
2	379148	2800									
3	379149	2600									
4	379150	3200									
5	379151	3000									
6	379152	3450									
◡	379153	3050									
8	379154	4450									
9	379155	3600									
10	379156	3400									
11	379157	3500									
12	379158	3500									
13	379159	2750									
14	379160	2500									
15	379161	2150									
1[illegible]	379162	4400									
17	379163	3450									
18	379164	5750									
19	379165	5050									
20	379166	5850									
21	379167	2850									
22	379168	2670									
23	379169	3200									
24	379170	4300									
25	379171	5300									

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.

599850

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	19 OF 22

TUBE No.	SAMPLE No.	Ti
1	379172	7500
2	379173	5400
3	379174	5450
4	379175	4350
5	379176	4250
6	379177	5000
	379178	5350
8	379179	4900
9	379180	4050
10	379181	3650
11	379182	3250
12	379183	2250
13	379184	2850
14	379185	2700
15	379186	7550
	379187	2700
17	379188	3150
18	379189	3100
19	379190	3000
20	379191	3600
21	379192	3300
22	379193	3000
23	379194	3200
24	379195	3200
25	379196	2700

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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715

ANALABS

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

599851

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	20 OF 22

TUBE No.	SAMPLE No.	Ti									
1	379197	2400									
2	379198	2150									
3	379199	2250									
4	379200	2400									
5	379201	2600									
6	379202	2800									
7	379203	2400									
8	379204	2350									
9	379205	2550									
10	379206	2350									
11	379207	2800									
12	379208	3700									
13	379209	4350									
14	379210	3000									
15	379211	2250									
16	379212	2000									
17	379213	2400									
18	379214	3200									
19	379215	2450									
20	379216	2850									
21	379217	3500									
22	379218	2700									
23	379219	4500									
24	379220	4300									
25	379221	4550									

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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ANALABS

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

599852

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	21 OF 22

TUBE No.	SAMPLE No.	Ti
1	379222	4150
2	379223	5100
3	379224	6000
4	379225	5050
5	379226	5950
6	379227	6850
7	379228	3750
8	379229	4900
9	379230	5500
10	379231	3650
11	379232	3400
12	379233	3600
13	379234	3450
14	379235	4150
15	379236	4850
16	379237	4550
17	379238	4450
18	379239	4600
19	379240	2400
20	379241	1900
21	379242	2650
22	379243	2550
23	379244	2800
24	379245	2300
25	379246	2950

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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ANALABS

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

599853

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04016	16/12/86	1455	22 OF 22

TUBE No.	SAMPLE No.	Ti
1	379247	4800
2	379248	3700
3	379249	3750
4	379250	2350
5	379251	4250
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

AUTHORISED OFFICER

APPENDIX 31.

719 599855 HATFIELD (22)

Aberfoyle Resources Limited

Incorporated in Victoria

EXPLORATION DIVISION

1st Floor
123 Camberwell Road
Hawthorn East
Victoria 3123
Australia
Telephone: (03) 82 2226
Facsimile: (03) 813 1086
Telex: AA38646

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION
39 RIVER ROAD WIVENHOE
(P.O. BOX 952 BURNIE)
TASMANIA 7320
PHONE (004) 31 6333

ATTN. T. HOLBROOK

Au BY FAS 1 PLEASE

ALL OTHERS AS USUAL

19th June, 1986

Comlabs Pty. Ltd.,
305 South Road,
MILE END SOUTH. S.A. 5031

Dear Sir,

Please analyse the following rocks for Cu, Pb, Zn, Ag, Ba, Au, As by the agreed methods.

Sample No.	Location	Description
~~271232~~	~~Boundary Quarry~~	~~Py, bkSp, Si vn, rd~~
271233	Boundary Quarry	rd Si alt
~~271234~~	~~Boundary Quarry~~	~~Si vn, Py. c.Sp~~
271235	"	Sp.q vn./Si Py40
271236	"	wh Si vn.b
271241	Coastean N of Boundary Quarry	wth.or.vlc
271242	"	wth.gn.Cl alt.vlc
271243	Base of round hill	gy.Si-Ch.b(R)
271244	Top of round hill	Si+Kfd alt. R.b
271245	Wend central costean boundary.	or.wth.vlc
271246	"	q.Mn.vn
271248	"	Wth.gn.vlc
271249	"	q.Mn.vn
271251)		siliceous.c.q.fd.R
271252)		"
271253)	Round hill	"
271254)		"
271255)		"

Yours faithfully,

D. J. Jack

Doug Jack,
Geologist.

599856 (22)

720

COMLABS SERVICES PTY. LTD.

305 South Road, Mile End South, South Australia 5031 Telephone (08) 43 5722 Telex LABCOM AA89323

NATA REGISTERED No. 1526

10 JUL REC'D

OUR REF.: COM860964

YOUR REF.:

HAT. BOUNDARY PROSPECT ROCK CHIPS.

Mr. D. Jack
Aberfoyle Exploration Pty. Ltd.
39 River Road
WIVENHOE
Tasmania
7320

July 8, 1986

Dear Doug

RE: JOB COM860964

Enclosed are the assays for the samples delivered to our laboratory on June 23, 1986

Yours Sincerely,
COMLABS PTY LTD

per :

P R Harvey

Report Length 1 pages

721

599857

COMLABS SERVICES PTY. LTD.

This Laboratory is registered by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of registration. This document shall not be reproduced except in full.

ANALYTICAL REPORT JOB COM860964

SAMPLE	Cu	Pb	Zn	Ag	Au	Ba	As
271233	7	48	75	<1	<0.01	1250	30
271235	22	115	260	1	<0.01	2200	65
271236	6	16	14	<1	<0.01	1200	7
271241	3	10	75	<1	<0.01	720	<2
271242	5	6	95	<1	<0.01	660	5
271243	3	10	9	<1	<0.01	980	2
271244	4	12	60	<1	<0.01	850	6
271245	4	8	42	<1	<0.01	820	<2
271246	16	12	22	<1	<0.01	105	<2
271248	150	12	550	<1	<0.01	250	6
271249	24	10	30	<1	<0.01	80	12
271251	4	6	12	<1	<0.01	810	<2
271252	3	10	14	<1	<0.01	750	30
271253	2	10	30	<1	<0.01	440	<2
271254	3	6	28	<1	<0.01	960	12
271255	2	8	32	<1	<0.01	750	3
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
SCHEME	AAS1	AAS1	AAS1	AAS3	FAS1	XRF1	XRF1

Cu, Pb, Zn, Ag Au, As, Ba, Ct

722

ANALABS

(23)

599858
30 JUN RECD

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

ANALYTICAL REPORT No. 23.3.08.03759

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
0911	30102621

DATE RECEIVED	RESULTS REQUIRED
17/06/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
1	27/06/86	1	2

STATE SAMPLES REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	271232,271234	Ro Prep: 006,009,013,018							Cu,Pb,Zn,Ag,/103		
	271232,271234	PU							Ba/401		
	271232,271234	Ro							Au/309		
	~~271232,271234~~	~~RO Prep: 006,009,013,018~~							~~Cu,Pb,Zn,Ag/103~~		
	~~271232,271234~~	~~RO~~							~~Ba/401~~		

RESULTS TO

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

RESULTS TO

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

REMARKS

HAT.

BOUNDARY PROSPECT.

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

723

ANALABS

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

599859

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03759	27/06/86	0911	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	Au			
1	271232	35	120	140	1.5	1550	<0.008			
2	271234	30	245	420	1.0	2050	<0.008			
3										
4										
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	10	0.008			
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM			
25	METHOD	103	103	103	103	401	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

721 599860 HATFIELD (24)

Project Boundary Prospect Analysis For HEC ROAD BOUNDARY

Ordinate	Sample No.	Depth	Colour	Co Ordinate	Sample No.	Depth	Colour
Rock	Chip samples up road.						
30S-40S	379870	Rock Chip and					
20S-30S	71	Clay Samples					
10S-20S	72						
0 - 10S	73						
0 - 10N	74						
110N-130N	75						
130N-150N	76						
150N-170N	77						
170N-190N	78						
190N-210N	79						
210N-230N	379880						
250N-270N	81						
270N-290N	379882						

725

ANALABS

599861 (24)

12 SEP REC'D

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Phone (09) 458 7999
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.03846

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
0979	

DATE RECEIVED	RESULTS REQUIRED
28/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	11/09/86	1	13

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
	379870/882	RC	Prep: 07,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379870/882	PU							Ba,Cr,Zr,Ti/401		
	379870/882	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

Boundary Prospect
HEC Road
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.

599862

726 — SAMPLE PREFIX

ANALYTICAL DATA

REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
23.3.08.03846	11/09/86	0979	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379870	<5	<5	70	0.5	15	4	480	5	340
2	379871	<5	<5	65	<0.5	35	2	680	<5	360
3	379872	<5	<5	65	0.5	45	3	870	<5	350
4	379873	5	<5	70	0.5	20	5	1000	<5	350
5	379874	15	210	175	0.5	40	10	960	<5	310
6	379875	10	<5	45	<0.5	10	3	530	<5	330
7	379876	10	<5	60	0.5	40	2	700	10	380
8	379877	5	<5	45	<0.5	15	1	750	<5	350
9	379878	5	<5	40	<0.5	20	1	650	10	330
10	379879	10	<5	45	<0.5	50	3	250	15	340
11	379880	10	<5	45	1.0	10	4	240	8	340
12	379881	5	<5	60	<0.5	25	5	630	20	340
13	379882	5	<5	75	<0.5	40	3	960	<5	360
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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727

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599863

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03846	11/09/86	0979	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	379870	1800	<0.008							
2	379871	1800	<0.008							
3	379872	1800	<0.008							
4	379873	1700	<0.008							
5	379874	1500	<0.008							
6	379875	1650	<0.008							
7	379876	1750	<0.008							
8	379877	1700	<0.008							
9	379878	1600	<0.008							
10	379879	1800	<0.008							
11	379880	1850	0.040							
12	379881	1700	<0.008							
13	379882	1800	<0.008							
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

728 2800E Costean Boundary 599864 (25)

Project Boundary Prospect Analyses For

Ordinate	Sample No.	Depth	Colour	Ordinate	Sample No.	Depth	Colour
2800N	2800E	Costean					
1 - 2	379883						
2 - 3	84						
3 - 4	85						
4 - 5	86						
5 - 6	87						
6 - 7	88	no sample Road.					
7 - 8	89						
8 - 9	90						
9 - 10	91						
10 - 11	92						
11 - 12	93						
12 - 13	94						
13 - 14	95						
14 - 15	96						
15 - 16	97						
16 - 17	98						

729

ANALABS

599865 (25)
12 SEP RECD

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.03847

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
0980	

DATE RECEIVED	RESULTS REQUIRED
28/08/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	11/09/86	1	15

STATE OF SAMPLES	PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	379883/887,379889/898	CO	Prep: 017,013,016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379883/887,379889/898	PU							Ba,Cr,Zr,Ti/401		
	379883/887,379889/898	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

Boundary Prospect
2800E Gosan.

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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730

599866

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03847	11/09/86	0980	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379883	10	<5	50	<0.5	10	1	570	<5	380
2	379884	10	<5	45	<0.5	15	<1	690	9	340
3	379885	10	<5	40	<0.5	5	1	650	<5	380
4	379886	5	<5	50	<0.5	10	1	450	5	360
5	379887	5	<5	60	<0.5	10	1	540	<5	370
6	379889	10	<5	90	<0.5	10	4	680	15	310
7	379890	10	<5	80	<0.5	10	9	810	<5	280
8	379891	10	<5	55	<0.5	15	5	610	25	250
9	379892	10	<5	50	<0.5	10	8	950	7	260
10	379893	10	<5	30	<0.5	10	1	770	8	300
11	379894	5	<5	25	<0.5	15	2	420	20	310
12	379895	5	<5	45	<0.5	10	1	700	<5	370
13	379896	5	<5	40	<0.5	15	1	490	10	310
14	379897	5	<5	80	<0.5	10	1	740	20	350
15	379898	5	<5	50	<0.5	15	1	290	5	350
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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731

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599867

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03847	11/09/86	0980	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	379883	2050	<0.008							
2	379884	1750	<0.008							
3	379885	2050	<0.008							
4	379886	2000	<0.008							
5	379887	1950	<0.008							
6	379889	1600	<0.008							
7	379890	1350	<0.008							
8	379891	1250	<0.008							
9	379892	1250	<0.008							
10	379893	1550	<0.008							
11	379894	1950	<0.008							
12	379895	1950	<0.008							
13	379896	1700	<0.008							
14	379897	1750	<0.008							
15	379898	1900	<0.008							
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

599868 HAT (26)

Boundary Prospect

Sample No.	Sheet No.	Co-ordinates	Description
271401 P	NN	3000N 2190E	bedded tuff-sediment
271402 P	NN	3000N 2270E	gy felsite
271403 P	NN	3235N 2280E	bedded tuff-sediment
271404 P	NN	2730N 2115E	Fg Fp R
271405 P	NN	2775N 2100E	gy felsite
271407 P	NN	2500N 2040E	wth or q por R
271408 P	NN	3205N 2050E	or bedded sediment
271409 P	NN	3135N 2040E	bleached grey tuff-sediment, ripple marks
271410 G, P	NN	2880N 1925E	black vtr tuff vug of Py (us?)
271411 P	PP	3940N 2670E	pk Fp t?
271412 P	PP	3830N 2583E	bedded tuff-sediment
271413 P	NN	3690N 2450E	gn vlc @ pk Fp
271414 P	NN	3650N 2400E	bd gy slt (Felsite)
271415 P	NN	3530N 2300E	fg rd + gn Ss - vlc
271416 P	NN	3460N 2235E	bk bd tuff-sediment
271417 P	NN	3000N 3100E	rd felsite
271418 P	MM	3000N 3425E	rd bk felsite
271419 G, P	MM	3000N 3900E	shd gy felsite
271420 G	MM	3000N 3950E	R/Fe
271421 P	MM	3000N 4620E	gy bk Mic Ss
271247 P	CC	3500N 4450E	fp gy l

O Geochem for 11 elements.

599869 (26) 25 NOV REC'D

733

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

Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.03980

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
1447	

DATE RECEIVED	RESULTS REQUIRED
11/11/86	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	24/11/86	1	3

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT: DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	ANALYSIS: REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	271410,271419/20	RC	Prep: 009,018						Cu,Pb,Zn,Ag,Ni/101,As/114		
	271410,271419/20	RC							Ba,Cr,Zr,Ti/401		
	271410,271419/20	RC							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

HAT.

BOUNDARY PROSPECT

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	Mo	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

- 734

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599870

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03980	24/11/86	1447	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	271410	20	15	80	0.5	30	26	510	50	250
2	271419	5	<5	10	0.5	25	3	IS	IS	IS
3	271420	5	10	55	<0.5	15	18	860	15	280
4										
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	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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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599871

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.03980	24/11/86	1447	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	271410	2000	<0.008							
2	271419	IS	<0.008							
3	271420	1700	<0.008							
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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599872

(27)

736

FOR FILE ONLY

South Hatfield Geochemistry Samples

379706	2200N 4600E	Mica Sandstone
379709	1580N 4300E	Mica Sandstone
379714	1400N 4935E	Chert
379718	1400N 5400E	Well bedded mica sandstone - later pyrite vein.

737

599873 (27)

27 FEB REC'D

ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999
52 Murray Road, Welshpool, W.A. 6106
TLX: AA 59224
Telex AA92560

ANALYTICAL REPORT No. 23.3.08.04248

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
2309	

DATE RECEIVED	RESULTS REQUIRED
19/02/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	26/02/87	1	4

DATE OF SAMPLING	PRE-TREATMENT								ANALYSIS			
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	379706,379709,379714,379718	RC	Prep: 009,017,013						Cu,Pb,Zn,Ag,Ni/101,As/114		
	379706,379709,379714,379718	RC							Ba,Cr,Zr,Ti/401		
	379706,379709,379714,379718	RC							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

South Hatfield
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

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599874

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04248	26/02/87	2309	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	379706	5	5	35	0.5	35	7	560	50	180
2	379709	5	5	105	0.5	15	25	820	20	250
3	379714	65	15	30	<0.5	20	5	570	190	190
4	379718	25	<5	50	0.5	125	15	750	220	210
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	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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

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599875

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04248	26/02/87	2309	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au							
1	379706	1600	<0.008							
2	379709	1900	<0.008							
3	379714	1000	<0.008							
4	379718	3150	<0.008							
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

599876

740

(2)

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. 23.3.08.05097

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
2680	

DATE RECEIVED	RESULTS REQUIRED
27/01/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
4	15/02/88	1	32

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
	427316/47	RC Prep: 012,013,016							Cu,Pb,Zn,Ag,Ni/101,As/114		
	427316/47	RC							Ba,Cr,Zr,Ti/401		
	427316/47	RC							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

Mark E.L.

South Hopfield
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 _____

599877

741

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05097	15/02/88	2680	1 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Ni
1	427316	30	<5	100	<0.5	0.017	1150	2	15	10
2	427317	35	<5	30	<0.5	<0.008	740	1	<5	<5
3	427318	<5	<5	30	<0.5	<0.008	660	<1	6	<5
4	427319	5	10	70	<0.5	<0.008	1750	1	<5	10
5	427320	<5	<5	20	<0.5	0.025	1100	1	15	10
6	427321	20	20	45	<0.5	0.008	720	10	90	35
7	427322	<5	<5	30	<0.5	<0.008	1850	6	15	10
8	427323	<5	5	55	<0.5	<0.008	880	4	6	5
9	427324	<5	5	35	<0.5	<0.008	1050	9	25	10
10	427325	<5	<5	70	<0.5	<0.008	1100	1	6	10
11	427326	<5	<5	75	<0.5	<0.008	780	<1	10	15
12	427327	5	<5	20	<0.5	<0.008	810	1	<5	<5
13	427328	5	<5	55	<0.5	<0.008	1900	1	<5	10
14	427329	<5	<5	30	<0.5	<0.008	1100	6	<5	<5
15	427330	<5	<5	35	<0.5	<0.008	1250	4	<5	<5
16	427331	<5	<5	60	<0.5	<0.008	490	5	15	10
17	427332	<5	5	15	<0.5	0.008	1150	8	<5	<5
18	427333	15	<5	120	<0.5	<0.008	1150	3	15	10
19	427334	<5	<5	30	<0.5	<0.008	1000	1	<5	<5
20	427335	<5	<5	40	<0.5	<0.008	1450	2	<5	5
21	427336	<5	<5	25	<0.5	<0.008	910	1	30	10
22	427337	<5	<5	30	<0.5	<0.008	930	1	<5	5
23	427338	<5	5	50	<0.5	<0.008	1500	1	<5	<5
24	427339	10	10	35	<0.5	<0.008	250	1	20	10
25	427340	5	20	65	<0.5	<0.008	1250	2	<5	5

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

599878

ANALABS

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

742

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05097	15/02/88	2680	2 OF 4

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Ni
1	427341	<5	<5	45	<0.5	<0.008	1500	<1	10	15
2	427342	<5	<5	20	<0.5	<0.008	1300	<1	<5	<5
3	427343	45	75	215	<0.5	<0.008	1300	9	85	40
4	427344	<5	<5	20	<0.5	<0.008	260	1	<5	5
5	427345	<5	<5	15	<0.5	<0.008	350	1	35	10
6	427346	<5	<5	25	<0.5	<0.008	970	2	<5	5
7	427347	5	<5	105	<0.5	<0.008	100	1	140	80
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	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

599879

743

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05097	15/02/88	2680	3 OF 4

TUBE No.	SAMPLE No.	Zr	Ti							
1	427316	170	3000							
2	427317	270	1600							
3	427318	300	1950							
4	427319	250	1700							
5	427320	210	1350							
6	427321	240	2350							
7	427322	260	1950							
8	427323	170	3250							
9	427324	150	2900							
10	427325	170	3400							
11	427326	210	2050							
12	427327	300	1950							
13	427328	440	2400							
14	427329	320	2050							
15	427330	290	1750							
16	427331	290	1800							
17	427332	240	1400							
18	427333	210	3450							
19	427334	260	1600							
20	427335	230	1400							
21	427336	260	1550							
22	427337	250	1450							
23	427338	340	2150							
24	427339	230	1450							
25	427340	220	2100							

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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599880

744

ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05097	15/02/88	2680	4 OF 4

TUBE No.	SAMPLE No.	Zr	Ti								
1	427341	210	1800								
2	427342	240	1500								
3	427343	270	3600								
4	427344	210	1400								
5	427345	290	1800								
6	427346	240	1550								
7	427347	210	5550								
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
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

APPENDIX 32.

740

599882

Aberfoyle Resources Limited

Incorporated in Victoria

EXPLORATION DIVISION

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION
39 RIVER ROAD WIVENHOE
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Hawthorn East
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Australia
Telephone: (03) 82 2226
Facsimile: (03) 813 1086
Telex: AA38646

24th JUNE 1986

O.N. 919

GRAHAM CARR,
SIROTOPE,
NORTH RYDE,
N.S.W. 2113.

Dear Graham,

Enclosed is a crushed (not pulverised) sample of a silicified,pyritized rock with fine quartz sphalerite veinlets from the rhyolitic Central Sequence,Cambrian Mt. Read volcanics.

The sample assayed 30 ppm Cu, 225 ppm Pb, 410 ppm Zn, 1 ppm Ag and less than 0.008 ppm Au.

Please characterise this sample with lead isotopes.

SAMPLE No. 271234

Yours faithfully,

Doug Jack

D.J.Jack

ABERFOYLE RESOURCES
EXPLORATION DIVISION

599883

747

SIROTOPE

CSIRO
Division of Mineralogy and Geochemistry
Sydney Laboratory

Delhi Road, North Ryde
P.O. Box 136, North Ryde, NSW, Australia 2113
Ins. Phone: 61-2-887 8712, 61-2-887 8713
Telex: MINRE AA 25817

REPORT TO

ABERFOYLE RESOURCES LTD

ON

A Pb ISOTOPIC STUDY

OF

PYRITIC ROCKS, HELLYER AREA

GRAHAM R. CARR
JUDITH A. DEAN
28/7/8

APPENDIX 33.

599580

757

DIAMOND DRILL CORE

MAGNETIC SUSCEPTIBILITY

STUDY

MACKINTOSH AREA,

TASMANIA

COPIES:

HAWTHORN : 1
[redacted] : 1
P. EAGLESON : 1

PREPARED FOR: ABERFOYLE RESOURCES LTD

BY: PAUL EAGLESON
MARCH 1987

INTRODUCTION

This report encloses the results of a susceptibility study of nineteen diamond drill holes from Mackintosh, Que River, Mount Charter and Hatfield areas. Magnetic susceptibility measurements were taken from DDH's Mac-1, Mac-2, Mac-3, Mac-4, Mac-5, Mac-6, Mac-7, Mac-8, Mac-9, QR-81, QR-109, MC-6, MC-8, MC-9, MC-10, MC-14, MC-15, MC-17 and Hat-8.

The measurements were evaluated and fourteen samples were chosen for petrological study. The samples selected for analysis were representative of the highest magnetic measurements or anomalous zones in the holes studied. The analysis of these samples was to determine the possible source, magnetite or pyrrhotite, of these anomalous zones.

METHOD

A Scintrex Core Testing Unit or Magnetic Susceptibility Meter was used to find the anomalous zones.

A measurement was taken every metre, the exactness of each measured metre dependant on the state of the core, for example if the core was too broken or split the measurement may be moved forward or back from the measured metre or left out altogether. The frequency of readings was more important than a measurement every exact metre. A varying scale switch on the meter ensured that very low and extremely high measurements could be taken with equal accuracy.

After the measurements have been taken a calibration curve is used to determine the correct susceptibility measurement. The measurements are entered into a computer programme and a plot made of each hole corresponding to those measurements. The peaks on the plots are representative of the higher susceptibility measurements in the holes.

The depths of these anomalous zones are determined and from these, representative samples are sent away for analysis. The results of the analysis on the core are compared to the logged geology of that depth and a direct comparison is made.

RESULTS

The fifteen petrological samples that are representative of anomalous zones are from DDH's Mac-1 - 334.9m, 138.5m, 336.2m, 147.4m, 145.1m, 148.6m and 146.8m. MC-6 - 175.4m, 171.5m, 172.8m, 174.5m and 173.7m. Mac-9 - 235.4m and 269.5. Mac-4 - 96.2m. The corresponding sample numbers are 271605 to 271619 respectively.

The Central Mineralogical Services report 87/3/16, identifies and describes in detail :

1. The identity of the magnetic phase.
2. Describes the magnetic textural phase in relation to other phases.
3. Describes the degree of alteration or weathering of the magnetic phase.

The major source and only source in some cases for the magnetic anomalies as detected using the Susceptibility meter is Magnetite. The Magnetite appears in various quantities and physical appearance as a primary mineral often relict and replaced later by Hematite as described in the report CMS 87/3/16. In the case of Mac-1 - 145.1m the probable source for the anomaly was a degraded Limonitic Fe-Carbonate. This seems to be isolated to this interval. The range of magnetite content in these samples is 0.2% to 1% dependant on degree of weathering and replacement by Hematite.

CONCLUSIONS

The most significant anomalous zones are to be found in the intermediate to acid volcanics, andesite and dacite respectively with one exception in diamond drill hole "Mac-4" at 96.2m, the anomalous zone being detected in a basalt.

The holes with the most significant anomalous zones detected do not stratigraphically correlate. The anomalies either do not occur in identical rock units in different holes, or they do not occur at similar depths in rock units at different or identical lithologies.

One reason why magnetite may occur at these depths is, that the sequence consists of two separate, almost indistinguishable, lava flows, the magnetic existing at the base of the second flow and above the first due to magmatic differentiation. The second reason may be that altered rock exists either side of the anomalous zone, the altered form of magnetite being hematite, hematite in a rock by itself will not produce an anomaly as intense as that of a rock containing only a small amount of magnetite.

In conclusion the anomalies were found to have been caused by magnetite. Magnetites presence within these rocks is inconsistent relative to stratigraphic correlations and the absence of anomalies of similar intensity in diamond drill holes of similar geological sequences.

760

599583

Aberfoyle Resources Limited

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Telex: AA38646

17th March, 1987

Mr. H. W. Fander,
Central Mineralogical Services,
39 Beulah Road,
NORWOOD. S.A. 5067

Dear Wally,

Enclosed are 15 drill core samples from the Que-Hellyer Volcanics. Locations and sample numbers are tabulated on the attached sheet.

These samples have been collected as part of a programme to study magnetic minerals to improve our interpretation of ground magnetic surveys. The majority of exploration drill holes in the Que-Hellyer area have been logged with a susceptibility metre, and each of the samples is representative of a magnetically anomalous zone.

Please prepare polished and thin sections of each sample and :

1. Identify the magnetic phase.
2. Describe its textural relation to other phases. (Magnetite in veins was identified from MAC-9).
3. Describe the degree of alteration or weathering of the magnetic phase.

Yours faithfully,

A. M. Hespe

A. M. Hespe,
Project Geologist.

Encl.

599584

761

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

15th May, 1987

REPORT CMS 87/3/16

YOUR REFERENCE:	Letter dated 17.3.1987
DATE RECEIVED:	18th March, 1987
SAMPLE NOS.:	271605 - 271619
SUBMITTED BY:	A.M. Hespe
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

762

REPORT CMS 87/3/16

Fifteen drill core samples selected from magnetically anomalous zones in exploration drill cores of the Que/Hellyer volcanics were received for petrological and mineragraphic examination, with the aim of defining magnetic phases. Representative thin- and polished sections were prepared and examined with a composite of transmitted/oblique incident and reflected light techniques respectively, with stain tests performed, as warranted, on the offcuts. Microscopic data is summarised in the attached descriptive notes, which include modal visual estimates of potentially significant magnetic phases, where applicable.

Summary

All fifteen rocks may be categorised as altered volcanics, and the suite as a whole represents the normal range of Que/Hellyer volcanic types, i.e. with compositional variations from basaltic through andesitic to leuco-andesitic and dacitic. Alteration and vein assemblages are typical as delineated in the individual descriptions.

The only observed ferromagnetic phase may be delineated as magnetite and, as detected, this is invariably a primary igneous component in the absence of vein- or metasomatic magnetite-bearing assemblages. Individual volcanic suites tend to exhibit colour-distinctive varieties of magnetite, but variations are rather subtle and thus not entirely recorded. Generally, andesitic facies exhibit "brown" magnetite and leuco-andesitic to dacitic facies grey magnetites. No zoned types were noted, suggesting magnetite composition is essentially uniform within individual suites.

Overall, magnetite content, although variable, is relatively high in comparing this suite of magnetically anomalous cores with typical (Que/Hellyer) altered volcanics.

A variety of paramagnetic phases is present. These include leucoxene, hematite, ferroan carbonates and, in weathered rocks (notably samples 271609, 271611), carbonate-derived limonite.

Leucoxene and hematite exhibit a variety of habits. Leucoxene replaces primary accessory ilmenite and (Ti-)magnetite. Hematite is partly an alteration phase, typically in chloritic assemblages, but is elsewhere locally primary, secondary after magnetite, or strictly late secondary in association with ferruginised carbonate. Individual rocks may exhibit two or more hematite types.

No relics of ilmenite were observed in the fifteen samples examined. Pyrrhotite was not observed and, as noted, there are no examples of vein- or metasomatic as distinct from primary accessory (igneous) magnetite. Several samples exhibit composites of relict primary magnetite and secondary paramagnetic phases. Total contents are low, but presumably significant against background levels.

D. Cowan, B. Sc.

599586

Sample No.	Classification - Brief Description
271605 (MAC-1/334.9 m) T.S., P.S. 57549	Amygdaloidal Andesite. Albitised/sericite-stained plagioclase-, minor chloritised ferromagnesian phenocrysts, frequent quartz-calcite-chlorite amygdales and quartz micro-amygdales in a sericitised/weakly chlorite-stained felsic groundmass. Moderately sheared/phyllitic; minor contorted cherty quartz veinlets. The opaque assemblage comprises very fine leucoxenised ilmenite (approx. 1 % of rock) and very thinly disseminated relict primary magnetite (<< 1 %). Magnetite is sized to 200 μ, with a mode of 30-50 μ, and is typically marginally leucoxenised.
271606 (MAC-1/138.5 m)	Amygdaloidal Andesite. Sparse albitised/chlorite-stained to carbonate-pseudomorphed feldspar and quartz-carbonate-chlorite-pseudomorphed ferromagnesian phenocrysts, sporadic quartz-carbonate-chlorite amygdales and micro-amygdales in an albitised feldspar-microlathic groundmass with a chlorite-carbonate mesostasis, conspicuous fine leucoxenised opaques. Flow-structured (subtrachytic) and only incipiently sheared in comparison with 271605. Main carbonate phase is impure calcite, supplemented by sporadic mildly stressed irregular veinlets of ankeritic carbonate. The opaque assemblage comprises hematite with relatively minor leucoxene and rare magnetite. Hematite is erratically distributed with concentrations in chloritic zones (amygdales, chloritic altered phenocrysts) and is fine-grained (mean 5 μ, clusters to 25 μ), comprising approximately 1 % of the rock. Leucoxene is relatively sparse in comparison with 271605 (<< 1 %), and magnetite occurs only as isolated microscopic (max. 20 μ, mode 10-15 μ) grains and extremely rare spongy clusters (to 35 μ) of relict primary character.
271607 (MAC-1/336.2 m)	Amygdaloidal Andesite. Frequent albitised/calcite-stained plagioclase-, subordinate to minor, variably chloritic microcrystalline quartz pseudomorphs after ferromagnesian phenocrysts, sporadic quartz-chlorite amygdales in an albitised plagioclase-microlathic/chlorite-calcite-mesostasised groundmass. Strongly porphyritic in comparison with 271605 and 271606; weakly flow-structured/subtrachytic and weakly stressed. The irregular vein (white) consists of coarse, stress-twinned calcite with marginal concentrations of quartz and irregular films of chlorite. This rock carries relatively conspicuous relict primary magnetite, comprising 0.5 to 2 %, and modally approximately 1 % of the areas sectioned. Grainsize is widely variable in the 2-100 μ range, with a mode of 20-25 μ. Coarser grains tend to be microfractured. Relatively quite minor (<< 1 %), similarly variably sized leucoxenised ilmenite is present.

Sample No.	Classification - Brief Description
271608 (MAC-1/147.4 m)	Amygdaloidal Andesite. Albitised/chlorite-stained plagioclase-, relatively frequent chlorite-carbonate- and quartz-carbonate-pseudomorphed ferromagnesian (amphibole and pyroxene) phenocrysts, sporadic quartz amygdales with accessory sericite, chlorite and calcite in a sericitised feldspar-microlathic groundmass with a sericite-calcite-altered mesostasis. Weakly flow-structured/subtrachytic and very incipiently sheared. This rock carries sporadic cognate xenoliths and grades into a lava breccia (or strictly a tuff lava, i.e. with a lava cement). The opaque assemblage is similar to that noted in 271606. Hematite comprises 1-3 % of the rock, largely as single flakes (mean 5 μ diameter) and fine spongy clusters (to 40 μ). Magnetite is present as thinly disseminated relict primary grains ranging up to 220 μ diameter, comprising < 1 % of the rock, with coarser grains variably microfractured and very incipiently martitised (i.e. replaced by hematite). Both phases are concentrated in, and marginal to, the altered ferromagnesian phenocrysts. The bulk of hematite is secondary. Isolated, relatively coarse, stumpy grains (to 30 μ), however, appear to be primary.
271609 (MAC-1/145.1 m)	Altered/Weathered, Amygdaloidal Andesite. Sericite-chlorite-carbonate-pseudomorphed feldspar-, and chlorite-carbonate-quartz-pseudomorphed ferromagnesian phenocrysts, sporadic amygdales and discontinuous veinlets of carbonate with accessory sericite, chlorite and quartz in a sericite-chlorite-quartz-altered, subtrachytic to weakly felsitic groundmass with minor leucoxenised opaques. This rock reflects incipient shearing. The major carbonate phase is thoroughly degraded and ferruginised Fe-carbonate ("siderite"). This is supplemented by interspersed vugs and films of calcite, largely concentrated in secondary fractures. The opaque assemblage comprises thinly disseminated leucoxenic semi-opaques (<5 - 20 μ, 0.2 - 0.3 % of rock) which, on the basis of habit, represent altered Ti-magnetite. Degraded/limonitic Fe-carbonate is potentially significant in terms of the magnetic anomaly.
271610 (MAC-1/148.6 m)	Amygdaloidal Andesite. Albitised/sericite-calcite-stained to sericite-calcite-pseudomorphed feldspar-, chlorite-carbonate-pseudomorphed ferromagnesian phenocrysts; quartz-calcite amygdales with accessory chlorite and sericite in a groundmass of albitised to sericite-carbonate--pseudomorphed plagioclase microlaths with minor chloritised ferromagnesian microlaths and a chlorite-stained sericitic mesostasis; subtrachytic-textured and incipiently sheared. Amygdale calcite grades into a high R.I. (ferroan) carbonate. This rock carries relatively conspicuous relict primary magnetite (approx.).5 %) as thinly dispersed an- to subhedral, variably microfractured coarse grains (60-250 μ) and finer (2-30 μ, mode 15-20 μ) groundmass-hosted particles. This phase exhibits a semi-banded distribution. Coarser grains rarely exhibit intergrown hematite (to 120 μ) with accessory traces thinly disseminated in the groundmass as 15-30 μ particles. Minor traces of secondary flaky hematite appear as micro-inclusions in amygdale calcite and as a replacement of the coarse microfractured magnetite subhedra.

59988

Sample No.	Classification - Brief Description
271611 (MAC-1/146.8 m)	Altered, Weathered Andesite. Frequent ferromagnesian phenocrysts-pseudomorphous aggregates of extensively degraded/ferruginised Fe-carbonate with subordinate to minor chlorite, calcite and quartz; relatively minor chlorite-calcite (± sericite, quartz) pseudomorphed feldspar phenocrysts, sparse amygdales of calcite, degraded Fe-carbonate and sericite in a sericitised/chlorite-calcite-stained groundmass with a weak relict subtrachytic fabric. Minor late veinlets of calcite with interspersed films of chlorite. This rock is similar to 271609 and is similarly weathered. In comparison, this phase is relatively weakly amygdaloidal, less extensively carbonate-veined and exhibits a variable but modally higher proportion of calcite as distinct from the degraded and ferruginised Fe-carbonate. Opaques comprise thinly disseminated microfractured and completely martitised (hematite-pseudomorphed) coarse magnetite and similarly altered fine magnetite (primarily approximately 0.5 % of rock), supplemented by sporadic clots of carbonate-replacive goethite, with locally associated very fine scaly hematite. The degraded/martitised magnetite, representing the primary (accessory igneous) opaque phase, is similar to that noted in 271610 in terms of sizing and distribution.
271612 (MC-6/175.4 m)	Leuco-Andesitic Breccia. Clasts of albitised plagioclase-porphyritic/incipiently altered (chloritised) ferromagnesian porphyritic lava with variously semi-felsitic to feldspar-microlitic, albitised/variably chlorite-stained groundmasses, semi-pervasive ultrafine (mean 2-3 μ) thinly disseminated coarser-grained (mean 75 μ, to 200 μ) magnetite, and subordinate leucoxenised opaques. The fabric is moulded lithoclastic (lava breccia), but complexed by fine-scale pervasive microcrystalline albite veining grading into brecciation. Total magnetite content is approximately 0.5 %. Coarser grains are fresh to marginally leucoxenic. Finer grains are fresh. Optical colouration is grey in contrast to the brownish (relatively titaniferous?) magnetite in the andesitic volcanics (271605 - 271611 incl.). The leucoxenic phase is partly identifiable as cloudy sphene
271613 (MC-6/171.5 m)	Leuco-Andesitic Breccia. This rock is very similar to 271612 and is similarly classified as a leuco-andesitic lava breccia. In comparison, this phase is relatively homogeneous, with only irregular non-pervasive zones of albite-healed microfracturing. The alteration pattern is similar to that noted in 271612, but distinctly chloritic in comparison and is complexed by minor discontinuous chlorite veinlets. Primary titanopaques are represented by cloudy microcrystalline sphene. In common with 271612, this rock exhibits relatively abundant relict primary magnetite with a similar habit and bimodal sizing. Coarser grains are sized to 200 μ, with a mode of 75 μ. The fine particles have a mean diameter of 5 μ. Magnetite content is slightly variable and slightly modally higher than noted in 271612. Individual grains exhibit incipient leucoxenic and martitic alteration. Accessory traces of fine (< 20 μ) ?primary hematite are present locally.

S96

599589

Sample No.	Classification - Brief Description
271614 (MC-6/172.8 m)	Leuco-Andesitic Breccia. This leuco-andesitic breccia is similar to the 271612 and 271613 examples. Clasts are modally coarser and include centimetric-scale types characterised by relatively marked perlitic microtextures and a homogeneous to disrupted (flow-brecciated) flow banding. The relatively weak primary (flow-)breciation is complexed by secondary brittle deformation, microcrystalline albite-healed, in irregular zones of centimetric proportions. Alteration is analogous to that in 271612, i.e. relatively weakly chloritic in comparison with 271613. Late, mildly stressed veinlets of calcite with interspersed clots and films of chlorite occur sporadically. The opaque assemblage is typical, with thinly disseminated single grains and loose clusters of coarse magnetite (to 250 μ), supplemented by pervasive ultrafine magnetite (mean 2-3 μ), and leucoxenised to cloudy microcrystalline, sphene-replaced titanopaques. Overall, magnetite content is approximately 0.2 to 0.3 %. Coarser grains rarely exhibit incipient hematite replacement.
271615 (MC-6/174.5 m)	Leuco-Andesitic Tuff Lava. This sample represents a mildly flow-brecciated leuco-andesitic lava; compositionally similar to 271612, 271613 and 271614, the main contrasts being textural. There are similarities with the megaclasts in 271614, the rock representing a flow banded to brecciated (cognate xenolithic) lava, or strictly a tuff lava. Clasts are sized < 1 to 5 mm and are variably flow-orientated within the lava matrix. Major compositional features comprise conspicuous albitised plagioclase phenocrysts and rare chloritised ferromagnesian microphenocrysts in a variably chloritic, microcrystalline-albitised, semi-perlitic groundmass. Alteration is complexed by clots of spongy poikilitic calcite and semi-selective chloritisation of some lava clasts. The opaque assemblage is analogous to that noted in 271612-271614 (incl.), with bimodally-sized magnetite (to 200 μ, mode 50-70 μ/mean 5 μ), and leucoxenic to sphene-replaced titanopaques in approximately equal proportions totalling 0.5 to 5 %, mode 1-2 % of the (banded) rock. Coarser magnetite grains are locally marginally to completely martitised.
271616 (MC-6/173.7 m)	Leuco-Andesitic Tuff. This is a leuco-andesitic fragmental, compositionally similar to the 271612-271614 facies, but relatively texturally heterogeneous, "grading" from a moulded breccia to a microcrystalline albite-cemented, poorly sorted lithic fragmental and best classified as a lithic ("lapilli") tuff, rather than a lava breccia. Clasts are semi-orientated and include rare pumiceous types. In detail, the rock appears to represent a composite of flow breccia and strictly lithic fragmental facies, which may be xenolithic in part. The alteration assemblage is typical of the 271612-271614 group, with minor discontinuous chloritic calcite veinlets analogous to those in 271614. The opaque assemblage is similarly typical, with thinly disseminated coarse and pervasive ultrafine magnetite supplemented by leucoxenic semi-opaques and traces of sphene representing altered titanopaques. Modal magnetite content is ca. 0.5 %. Coarser grains (to 250 μ) are rarely incipiently martitised.

76b

Sample No.	Classification - Brief Description
271617 (MAC-9/235.4 m)	Amygdaloidal "Dacite". A relatively felsic lava reasonably categorised as dacitic, although compositional detail is obscured by marked sericite-quartz alteration. The rock is variably amydaloidal in quartz and sericite, carries albitised to sericitised feldspar phenocrysts and rare quartz-chlorite-pseudomorphed ferromagnesian microphenocrysts, and exhibits a semi-felsitic relict fabric consistent with a subvitric felsic lava. Alteration is complexed by irregular sericite veins, the rock grading into a sericite-matrixed breccia with the mesoscopic lithoclastic breccia-like appearance enhanced by subsequent shearing effects. Irregular impregnations of calcite occur sporadically, with concentrations adjacent to straight-walled calcite-quartz veinlets (stressed). The opaque assemblage is dominated by Ti-magnetite-derived leucoxene, comprising modally approx. 0.5 % of the rock. Rare spongy corroded relics of magnetite persist. These are locally martitised, particularly in vein-marginal zones, producing the faint pinkish mottlings.
271618 (MAC-9/264.5 m)	Amygdaloidal "Dacite". This rock is compositionally and texturally similar to 271617, representing a semi-felsitic porphyritic amygdaloidal felsic (leuco-andesitic/dacitic) lava. In comparison, the alteration pattern is relatively silliceous and the sericite veining relatively poorly developed. Varying proportions of calcite and minor traces of chlorite complex the quartz-sericite assemblage. Sporadic chloritic calcite veinlets exhibit pink-pigmented selvedges ranging to a few millimetres in width. The opaque assemblage is essentially identical to that noted in 271617, with leucoxene (0.5 to 1 % of rock) accompanied by minor spongy corroded relics of magnetite, variably replaced by secondary hematite (martite) in calcite vein-marginal zones.
271619 (MAC-4/96.2 m) T.S., P.S. 57563	Amygdaloidal Basalt. This is a moderately altered amygdaloidal basalt. Phenocrysts comprise abundant marginally chloritised to fresh augite and relatively minor albitised plagioclase accompanied by sporadic chlorite-calcite-quartz amygdales in a chlorite- and cloudy microcrystalline epidote-stained, feldspar-microlathic, semi-flow-structured basaltic groundmass. Sparse pyroxene-pseudomorphous calcite-chlorite aggregates appear to represent selectively altered orthopyroxene. The minor veinlets consist of calcite and chlorite with microscale selvedges of albite and quartz and reflect mild shearing effects. The opaque assemblage comprises thinly disseminated modally coarse (mean 30 μ), incipiently marginally leucoxenised magnetite, and pervasively disseminated finer (mean 2-3 μ) magnetite approximating 1 % of the rock overall. Minor traces of pyrite and rare microscopic, locally supergene-altered blebs of chalcopyrite are present.

29990

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD003	159.0	159.1			50
MACD003	160.0	160.1			30
MACD003	161.0	161.1			20
MACD003	162.0	162.1			
MACD003	163.0	163.1			
MACD003	164.0	164.1			
MACD003	165.0	165.1			
MACD003	166.0	166.1			30
MACD003	167.0	167.1			30
MACD003	168.0	168.1			10
MACD003	169.0	169.1			20
MACD003	170.0	170.1			30
MACD003	171.0	171.1			30
MACD003	172.0	172.1			40
MACD003	173.0	173.1			30
MACD003	174.0	174.1			30
MACD003	175.0	175.1			30
MACD003	176.0	176.1			40
MACD003	177.0	177.1			30
MACD003	178.0	178.1			40
MACD003	179.0	179.1			30
MACD003	180.0	180.1			30
MACD003	181.0	181.1			40
MACD003	182.0	182.1			30
MACD003	183.0	183.1			30
MACD003	184.0	184.1			40
MACD003	185.0	185.1			30
MACD003	186.0	186.1			40
MACD003	187.0	187.1			30
MACD003	188.0	188.1			40
MACD003	189.0	189.1			
MACD003	190.0	190.1			
MACD003	191.0	191.1			
MACD003	192.0	192.1			
MACD003	193.0	193.1			
MACD003	194.0	194.1			
MACD003	195.0	195.1			
MACD003	196.0	196.1			
MACD003	197.0	197.1			30
MACD003	198.0	198.1			30
MACD003	199.0	199.1			30
MACD003	200.0	200.1			30
MACD003	201.0	201.1			30
MACD003	202.0	202.1			30
MACD003	203.0	203.1			30
MACD003	204.0	204.1			30
MACD003	205.0	205.1			50
MACD003	206.0	206.1			40
MACD003	207.0	207.1			30
MACD003	208.0	208.1			30
MACD003	209.0	209.1			30
MACD003	210.0	210.1			20
MACD003	211.0	211.1			30

821

599592

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD003	212.0	212.1			20
MACD003	213.0	213.1			30
MACD004	0.0	0.1			
MACD004	1.0	1.1			
MACD004	2.0	2.1			
MACD004	3.0	3.1			
MACD004	4.0	4.1			
MACD004	5.0	5.1			
MACD004	6.0	6.1			
MACD004	7.0	7.1			
MACD004	8.0	8.1			
MACD004	9.0	9.1			
MACD004	10.0	10.1			
MACD004	11.0	11.1			
MACD004	12.0	12.1			
MACD004	13.0	13.1			
MACD004	14.0	14.1			
MACD004	15.0	15.1			
MACD004	16.0	16.1			
MACD004	17.0	17.1			
MACD004	18.0	18.1			
MACD004	19.0	19.1			
MACD004	20.0	20.1			
MACD004	21.0	21.1			
MACD004	22.0	22.1			
MACD004	23.0	23.1			
MACD004	24.0	24.1			20
MACD004	25.0	25.1			20
MACD004	26.0	26.1			
MACD004	27.0	27.1			
MACD004	28.0	28.1			
MACD004	29.0	29.1			
MACD004	30.0	30.1			30
MACD004	31.0	31.1			30
MACD004	32.0	32.1			25
MACD004	33.0	33.1			20
MACD004	34.0	34.1			
MACD004	35.0	35.1			
MACD004	36.0	36.1			
MACD004	37.0	37.1			
MACD004	38.0	38.1			40
MACD004	39.0	39.1			20
MACD004	40.0	40.1			15
MACD004	41.0	41.1			20
MACD004	42.0	42.1			20
MACD004	43.0	43.1			40
MACD004	44.0	44.1			40
MACD004	45.0	45.1			20
MACD004	46.0	46.1			20
MACD004	47.0	47.1			10
MACD004	48.0	48.1			50
MACD004	49.0	49.1			25

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD004	50.0	50.1			30
MACD004	51.0	51.1			20
MACD004	52.0	52.1			30
MACD004	53.0	53.1			25
MACD004	54.0	54.1			30
MACD004	55.0	55.1			30
MACD004	56.0	56.1			
MACD004	57.0	57.1			
MACD004	58.0	58.1			
MACD004	59.0	59.1			
MACD004	60.0	60.1			
MACD004	61.0	61.1			20
MACD004	62.0	62.1			20
MACD004	63.0	63.1			30
MACD004	64.0	64.1			25
MACD004	65.0	65.1			35
MACD004	66.0	66.1			30
MACD004	67.0	67.1			25
MACD004	68.0	68.1			10
MACD004	69.0	69.1			40
MACD004	70.0	70.1			30
MACD004	71.0	71.1			25
MACD004	72.0	72.1			20
MACD004	73.0	73.1			30
MACD004	74.0	74.1			20
MACD004	75.0	75.1			30
MACD004	76.0	76.1			50
MACD004	77.0	77.1			50
MACD004	78.0	78.1			10
MACD004	79.0	79.1			10
MACD004	80.0	80.1			30
MACD004	81.0	81.1			30
MACD004	82.0	82.1			30
MACD004	83.0	83.1			25
MACD004	84.0	84.1			20
MACD004	85.0	85.1			25
MACD004	86.0	86.1			35
MACD004	87.0	87.1			20
MACD004	88.0	88.1			35
MACD004	89.0	89.1			20
MACD004	90.0	90.1			30
MACD004	91.0	91.1			30
MACD004	92.0	92.1			30
MACD004	93.0	93.1			30
MACD004	94.0	94.1			40
MACD004	95.0	95.1			30
MACD004	96.0	96.1			
MACD004	97.0	97.1			250
MACD004	98.0	98.1			290
MACD004	99.0	99.1			260
MACD004	100.0	100.1			360
MACD004	101.0	101.1			
MACD004	102.0	102.1			40

599594

823

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD004	103.0	103.1			50
MACD004	104.0	104.1			30
MACD004	105.0	105.1			25
MACD004	106.0	106.1			20
MACD004	107.0	107.1			30
MACD004	108.0	108.1			10
MACD004	109.0	109.1			30
MACD004	110.0	110.1			30
MACD004	111.0	111.1			20
MACD004	112.0	112.1			30
MACD004	113.0	113.1			25
MACD004	114.0	114.1			30
MACD004	115.0	115.1			30
MACD004	116.0	116.1			45
MACD004	117.0	117.1			30
MACD004	118.0	118.1			30
MACD004	119.0	119.1			15
MACD004	120.0	120.1			30
MACD004	121.0	121.1			30
MACD004	122.0	122.1			20
MACD004	123.0	123.1			35
MACD004	124.0	124.1			35
MACD004	125.0	125.1			35
MACD004	126.0	126.1			40
MACD004	127.0	127.1			25
MACD004	128.0	128.1			25
MACD004	129.0	129.1			20
MACD004	130.0	130.1			30
MACD004	131.0	131.1			40
MACD004	132.0	132.1			20
MACD004	133.0	133.1			15
MACD004	134.0	134.1			10
MACD004	135.0	135.1			30
MACD004	136.0	136.1			15
MACD004	137.0	137.1			20
MACD004	138.0	138.1			20
MACD004	139.0	139.1			20
MACD004	140.0	140.1			50
MACD004	141.0	141.1			15
MACD004	142.0	142.1			20
MACD004	143.0	143.1			45
MACD004	144.0	144.1			10
MACD004	145.0	145.1			20
MACD004	146.0	146.1			20
MACD004	147.0	147.1			25
MACD004	148.0	148.1			10
MACD004	149.0	149.1			20
MACD004	150.0	150.1			25
MACD004	151.0	151.1			15
MACD004	152.0	152.1			20
MACD004	153.0	153.1			25
MACD004	154.0	154.1			35
MACD004	155.0	155.1			20

599595

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD004	156.0	156.1			25
MACD004	157.0	157.1			20
MACD004	158.0	158.1			25
MACD004	159.0	159.1			15
MACD004	160.0	160.1			15
MACD004	161.0	161.1			15
MACD004	162.0	162.1			10
MACD004	163.0	163.1			20
MACD004	164.0	164.1			10
MACD004	165.0	165.1			15
MACD004	166.0	166.1			30
MACD004	167.0	167.1			30
MACD004	168.0	168.1			30
MACD004	169.0	169.1			10
MACD004	170.0	170.1			20
MACD004	171.0	171.1			10
MACD004	172.0	172.1			25
MACD004	173.0	173.1			10
MACD004	174.0	174.1			20
MACD004	175.0	175.1			20
MACD004	176.0	176.1			15
MACD004	177.0	177.1			5
MACD004	178.0	178.1			20
MACD004	179.0	179.1			15
MACD004	180.0	180.1			20
MACD004	181.0	181.1			20
MACD004	182.0	182.1			10
MACD004	183.0	183.1			10
MACD004	184.0	184.1			20
MACD004	185.0	185.1			25
MACD004	186.0	186.1			20
MACD004	187.0	187.1			15
MACD004	188.0	188.1			25
MACD004	189.0	189.1			15
MACD004	190.0	190.1			15
MACD004	191.0	191.1			30
MACD004	192.0	192.1			20
MACD004	193.0	193.1			15
MACD004	194.0	194.1			10
MACD004	195.0	195.1			10
MACD004	196.0	196.1			15
MACD004	197.0	197.1			10
MACD004	198.0	198.1			
MACD004	199.0	199.1			
MACD004	200.0	200.1			15
MACD004	201.0	201.1			10
MACD004	202.0	202.1			5
MACD004	203.0	203.1			10
MACD004	204.0	204.1			35
MACD004	205.0	205.1			10
MACD004	206.0	206.1			10
MACD004	207.0	207.1			10
MACD004	208.0	208.1			15

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD004	209.0	209.1			10
MACD004	210.0	210.1			10
MACD004	211.0	211.1			20
MACD004	212.0	212.1			10
MACD004	213.0	213.1			10
MACD004	214.0	214.1			15
MACD004	215.0	215.1			10
MACD004	216.0	216.1			20
MACD004	217.0	217.1			20
MACD004	218.0	218.1			20
MACD004	219.0	219.1			15
MACD004	220.0	220.1			20
MACD004	221.0	221.1			15
MACD004	222.0	222.1			
MACD004	223.0	223.1			
MACD004	224.0	224.1			
MACD004	225.0	225.1			10
MACD004	226.0	226.1			
MACD004	227.0	227.1			
MACD004	228.0	228.1			10
MACD004	229.0	229.1			10
MACD004	230.0	230.1			10
MACD004	231.0	231.1			10
MACD004	232.0	232.1			10
MACD004	233.0	233.1			15
MACD004	234.0	234.1			10
MACD004	235.0	235.1			15
MACD004	236.0	236.1			20
MACD004	237.0	237.1			15
MACD004	238.0	238.1			25
MACD004	239.0	239.1			15
MACD004	240.0	240.1			25
MACD004	241.0	241.1			20
MACD004	242.0	242.1			20
MACD004	243.0	243.1			15
MACD004	244.0	244.1			15
MACD004	245.0	245.1			20
MACD004	246.0	246.1			40
MACD004	247.0	247.1			35
MACD004	248.0	248.1			10
MACD004	249.0	249.1			10
MACD004	250.0	250.1			30
MACD004	251.0	251.1			25
MACD004	252.0	252.1			15
MACD004	253.0	253.1			15
MACD004	254.0	254.1			15
MACD004	255.0	255.1			15
MACD004	256.0	256.1			15
MACD004	257.0	257.1			10
MACD004	258.0	258.1			10
MACD004	259.0	259.1			25
MACD004	260.0	260.1			15
MACD004	261.0	261.1			50

599597

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD004	262.0	262.1			10
MACD004	263.0	263.1			35
MACD004	264.0	264.1			10
MACD004	265.0	265.1			15
MACD004	266.0	266.1			15
MACD004	267.0	267.1			10
MACD004	268.0	268.1			10
MACD004	269.0	269.1			15
MACD004	270.0	270.1			15
MACD004	271.0	271.1			10
MACD004	272.0	272.1			15
MACD004	273.0	273.1			20
MACD004	274.0	274.1			20
MACD004	275.0	275.1			10
MACD004	276.0	276.1			20
MACD004	277.0	277.1			10
MACD004	278.0	278.1			10
MACD004	279.0	279.1			20
MACD004	280.0	280.1			20
MACD004	281.0	281.1			15
MACD004	282.0	282.1			20
MACD004	283.0	283.1			20
MACD004	284.0	284.1			15
MACD004	285.0	285.1			20
MACD004	286.0	286.1			15
MACD004	287.0	287.1			20
MACD004	288.0	288.1			40
MACD004	289.0	289.1			15
MACD004	290.0	290.1			20
MACD004	291.0	291.1			30
MACD004	292.0	292.1			35
MACD004	293.0	293.1			15
MACD004	294.0	294.1			20
MACD004	295.0	295.1			30
MACD004	296.0	296.1			35
MACD004	297.0	297.1			15
MACD004	298.0	298.1			15
MACD004	299.0	299.1			15
MACD004	300.0	300.1			35
MACD004	301.0	301.1			
MACD004	302.0	302.1			
MACD004	303.0	303.1			35
MACD004	304.0	304.1			30
MACD004	305.0	305.1			50
MACD004	306.0	306.1			30
MACD004	307.0	307.1			25
MACD004	308.0	308.1			35
MACD004	309.0	309.1			10
MACD004	310.0	310.1			35
MACD004	311.0	311.1			35
MACD004	312.0	312.1			40
MACD004	313.0	313.1			45
MACD004	314.0	314.1			70

599598

OHID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
MACD004	315.0	315.1		50
MACD004	316.0	316.1		20
MACD004	317.0	317.1		10
MACD004	318.0	318.1		25
MACD004	319.0	319.1		30
MACD004	320.0	320.1		20
MACD004	321.0	321.1		35
MACD004	322.0	322.1		30
MACD004	323.0	323.1		30
MACD004	324.0	324.1		20
MACD004	325.0	325.1		30
MACD004	326.0	326.1		30
MACD004	327.0	327.1		30
MACD004	328.0	328.1		10
MACD004	329.0	329.1		25
MACD004	330.0	330.1		20
MACD004	331.0	331.1		40
MACD004	332.0	332.1		40
MACD004	333.0	333.1		40
MACD004	334.0	334.1		25
MACD004	335.0	335.1		40
MACD004	336.0	336.1		40
MACD004	337.0	337.1		45
MACD004	338.0	338.1		25
MACD004	339.0	339.1		25
MACD004	340.0	340.1		70
MACD004	341.0	341.1		50
MACD004	342.0	342.1		40
MACD004	343.0	343.1		40
MACD004	344.0	344.1		50
MACD004	345.0	345.1		20
MACD004	346.0	346.1		35
MACD004	347.0	347.1		30
MACD004	347.9	348.0		20
MACD005	0.0	0.1		
MACD005	1.0	1.1		
MACD005	2.0	2.1		
MACD005	3.0	3.1		
MACD005	4.0	4.1		
MACD005	5.0	5.1		
MACD005	6.0	6.1		
MACD005	7.0	7.1		
MACD005	8.0	8.1		
MACD005	9.0	9.1		
MACD005	10.0	10.1		
MACD005	11.0	11.1		
MACD005	12.0	12.1		5
MACD005	13.0	13.1		
MACD005	14.0	14.1		
MACD005	15.0	15.1		
MACD005	16.0	16.1		
MACD005	17.0	17.1		

599599

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD005	18.0	18.1			
MACD005	19.0	19.1			
MACD005	20.0	20.1			
MACD005	21.0	21.1			
MACD005	22.0	22.1			
MACD005	23.0	23.1			
MACD005	24.0	24.1			
MACD005	25.0	25.1			
MACD005	26.0	26.1			
MACD005	27.0	27.1			10
MACD005	28.0	28.1			
MACD005	29.0	29.1			
MACD005	30.0	30.1			
MACD005	31.0	31.1			
MACD005	32.0	32.1			
MACD005	33.0	33.1			
MACD005	34.0	34.1			
MACD005	35.0	35.1			
MACD005	36.0	36.1			5
MACD005	37.0	37.1			10
MACD005	38.0	38.1			25
MACD005	39.0	39.1			10
MACD005	40.0	40.1			25
MACD005	41.0	41.1			20
MACD005	42.0	42.1			0
MACD005	43.0	43.1			0
MACD005	44.0	44.1			
MACD005	45.0	45.1			
MACD005	46.0	46.1			5
MACD005	47.0	47.1			5
MACD005	48.0	48.1			5
MACD005	49.0	49.1			5
MACD005	50.0	50.1			5
MACD005	51.0	51.1			
MACD005	52.0	52.1			
MACD005	53.0	53.1			
MACD005	54.0	54.1			
MACD005	55.0	55.1			
MACD005	56.0	56.1			
MACD005	57.0	57.1			
MACD005	58.0	58.1			10
MACD005	59.0	59.1			10
MACD005	60.0	60.1			10
MACD005	61.0	61.1			5
MACD005	62.0	62.1			5
MACD005	63.0	63.1			20
MACD005	64.0	64.1			20
MACD005	65.0	65.1			15
MACD005	66.0	66.1			
MACD005	67.0	67.1			
MACD005	68.0	68.1			
MACD005	69.0	69.1			5
MACD005	70.0	70.1			10

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD005	71.0	71.1			5
MACD005	72.0	72.1			5
MACD005	73.0	73.1			
MACD005	74.0	74.1			
MACD005	75.0	75.1			
MACD005	76.0	76.1			
MACD005	77.0	77.1			
MACD005	78.0	78.1			5
MACD005	79.0	79.1			15
MACD005	80.0	80.1			20
MACD005	81.0	81.1			10
MACD005	82.0	82.1			10
MACD005	83.0	83.1			20
MACD005	84.0	84.1			10
MACD005	85.0	85.1			10
MACD005	86.0	86.1			15
MACD005	87.0	87.1			20
MACD005	88.0	88.1			20
MACD005	89.0	89.1			25
MACD005	90.0	90.1			15
MACD005	91.0	91.1			15
MACD005	92.0	92.1			
MACD005	93.0	93.1			20
MACD005	94.0	94.1			20
MACD005	95.0	95.1			20
MACD005	96.0	96.1			
MACD005	97.0	97.1			25
MACD005	98.0	98.1			20
MACD005	99.0	99.1			40
MACD005	100.0	100.1			20
MACD005	101.0	101.1			
MACD005	102.0	102.1			
MACD005	103.0	103.1			
MACD005	104.0	104.1			
MACD005	105.0	105.1			
MACD005	107.0	107.1			15
MACD005	108.0	108.1			
MACD005	109.0	109.1			30
MACD005	110.0	110.1			35
MACD005	111.0	111.1			30
MACD005	112.0	112.1			30
MACD005	113.0	113.1			20
MACD005	114.0	114.1			20
MACD005	115.0	115.1			30
MACD005	116.0	116.1			
MACD005	117.0	117.1			
MACD005	118.0	118.1			
MACD005	119.0	119.1			
MACD005	120.0	120.1			10
MACD005	121.0	121.1			
MACD005	122.0	122.1			
MACD005	123.0	123.1			
MACD005	124.0	124.1			

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD005	125.0	125.1			30
MACD005	126.0	126.1			
MACD005	127.0	127.1			
MACD005	128.0	128.1			
MACD005	129.0	129.1			20
MACD005	130.0	130.1			
MACD005	131.0	131.1			
MACD005	132.0	132.1			
MACD005	133.0	133.1			
MACD005	134.0	134.1			
MACD005	135.0	135.1			25
MACD005	136.0	136.1			
MACD005	137.0	137.1			
MACD005	138.0	138.1			25
MACD005	139.0	139.1			30
MACD005	140.0	140.1			10
MACD005	141.0	141.1			25
MACD005	142.0	142.1			30
MACD005	143.0	143.1			30
MACD005	144.0	144.1			25
MACD005	145.0	145.1			
MACD005	146.0	146.1			40
MACD005	147.0	147.1			25
MACD005	148.0	148.1			15
MACD005	149.0	149.1			20
MACD005	150.0	150.1			20
MACD005	151.0	151.1			15
MACD005	152.0	152.1			40
MACD005	153.0	153.1			25
MACD005	154.0	154.1			25
MACD005	155.0	155.1			
MACD005	156.0	156.1			45
MACD005	157.0	157.1			20
MACD005	158.0	158.1			15
MACD005	159.0	159.1			30
MACD005	160.0	160.1			25
MACD005	161.0	161.1			25
MACD005	162.0	162.1			35
MACD005	163.0	163.1			30
MACD005	164.0	164.1			30
MACD005	165.0	165.1			20
MACD005	166.0	166.1			20
MACD005	167.0	167.1			20
MACD005	168.0	168.1			25
MACD005	169.0	169.1			25
MACD005	170.0	170.1			20
MACD005	171.0	171.1			20
MACD005	172.0	172.1			
MACD005	173.0	173.1			
MACD005	174.0	174.1			
MACD005	175.0	175.1			20
MACD005	176.0	176.1			20
MACD005	177.0	177.1			

831

599602

HID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
MACD005	178.0	178.1		25
MACD005	179.0	179.1		15
MACD005	180.0	180.1		15
MACD005	181.0	181.1		25
MACD005	182.0	182.1		25
MACD005	183.0	183.1		35
MACD005	184.0	184.1		30
MACD005	185.0	185.1		20
MACD005	186.0	186.1		30
MACD005	187.0	187.1		20
MACD005	188.0	188.1		20
MACD005	189.0	189.1		10
MACD005	190.0	190.1		30
MACD005	191.0	191.1		30
MACD005	192.0	192.1		30
MACD005	193.0	193.1		25
MACD005	194.0	194.1		35
MACD005	195.0	195.1		30
MACD005	196.0	196.1		25
MACD005	197.0	197.1		40
MACD005	198.0	198.1		30
MACD005	199.0	199.1		25
MACD005	200.0	200.1		30
MACD005	201.0	201.1		25
MACD005	202.0	202.1		30
MACD005	203.0	203.1		25
MACD005	204.0	204.1		25
MACD005	205.0	205.1		30
MACD005	206.0	206.1		35
MACD005	207.0	207.1		40
MACD005	208.0	208.1		30
MACD005	209.0	209.1		30
MACD005	210.0	210.1		30
MACD005	211.0	211.1		30
MACD005	212.0	212.1		35
MACD005	213.0	213.1		30
MACD005	214.0	214.1		30
MACD005	215.0	215.1		30
MACD005	216.0	216.1		35
MACD005	217.0	217.1		40
MACD005	218.0	218.1		35
MACD005	219.0	219.1		30
MACD005	220.0	220.1		30
MACD005	221.0	221.1		30
MACD005	222.0	222.1		30
MACD005	223.0	223.1		40
MACD005	224.0	224.1		30
MACD005	225.0	225.1		30
MACD005	226.0	226.1		20
MACD005	227.0	227.1		25
MACD005	228.0	228.1		30
MACD005	229.0	229.1		25
MACD005	230.0	230.1		40

832

599603

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD005	231.0	231.1			40
MACD005	232.0	232.1			40
MACD005	233.0	233.1			40
MACD005	234.0	234.1			40
MACD005	235.0	235.1			30
MACD005	236.0	236.1			40
MACD005	237.0	237.1			20
MACD005	238.0	238.1			30
MACD005	239.0	239.1			20
MACD005	240.0	240.1			30
MACD005	241.0	241.1			30
MACD005	242.0	242.1			30
MACD005	243.0	243.1			25
MACD005	244.0	244.1			20
MACD005	245.0	245.1			20
MACD005	246.0	246.1			20
MACD005	247.0	247.1			25
MACD005	248.0	248.1			30
MACD005	249.0	249.1			30
MACD005	250.0	250.1			40
MACD005	251.0	251.1			30
MACD005	252.0	252.1			30
MACD005	253.0	253.1			40
MACD005	254.0	254.1			40
MACD005	255.0	255.1			40
MACD005	256.0	256.1			40
MACD005	257.0	257.1			35
MACD005	258.0	258.1			30
MACD005	259.0	259.1			20
MACD005	260.0	260.1			35
MACD005	261.0	261.1			40
MACD005	262.0	262.1			35
MACD005	263.0	263.1			40
MACD005	264.0	264.1			40
MACD005	265.0	265.1			40
MACD005	266.0	266.1			35
MACD005	267.0	267.1			35
MACD005	268.0	268.1			40
MACD005	269.0	269.1			30
MACD005	269.0	269.1			30
MACD005	270.0	270.1			35
MACD005	271.0	271.1			30
MACD005	272.0	272.1			30
MACD005	273.0	273.1			30
MACD005	274.0	274.1			30
MACD005	275.0	275.1			20
MACD005	276.0	276.1			30
MACD005	277.0	277.1			40
MACD005	278.0	278.1			30
MACD005	279.0	279.1			30
MACD005	280.0	280.1			30
MACD005	281.0	281.1			25
MACD005	282.0	282.1			30

HID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
MACD005	283.0	283.1		20
MACD005	284.0	284.1		
MACD005	285.0	285.1		30
MACD005	286.0	286.1		40
MACD005	287.0	287.1		10
MACD005	288.0	288.1		30
MACD005	289.0	289.1		30
MACD005	290.0	290.1		50
MACD005	291.0	291.1		40
MACD005	292.0	292.1		25
MACD005	293.0	293.1		20
MACD005	294.0	294.1		30
MACD005	295.0	295.1		35
MACD005	296.0	296.1		30
MACD005	297.0	297.1		50
MACD005	298.0	298.1		35
MACD005	299.0	299.1		20
MACD005	300.0	300.1		20
MACD005	301.0	301.1		10
MACD005	302.0	302.1		40
MACD005	303.0	303.1		15
MACD005	304.0	304.1		15
MACD005	305.0	305.1		20
MACD005	306.0	306.1		10
MACD005	307.0	307.1		10
MACD005	308.0	308.1		5
MACD005	309.0	309.1		10
MACD005	310.0	310.1		10
MACD005	311.0	311.1		10
MACD005	312.0	312.1		20
MACD005	313.0	313.1		20
MACD005	314.0	314.1		20
MACD005	315.0	315.1		20
MACD005	316.0	316.1		20
MACD005	317.0	317.1		20
MACD005	318.0	318.1		20
MACD005	319.0	319.1		20
MACD005	320.0	320.1		30
MACD005	321.0	321.1		20
MACD005	322.0	322.1		20
MACD005	323.0	323.1		20
MACD005	324.0	324.1		20
MACD005	325.0	325.1		10
MACD005	326.0	326.1		10
MACD005	327.0	327.1		10
MACD005	328.0	328.1		10
MACD005	329.0	329.1		10
MACD005	330.0	330.1		15
MACD005	331.0	331.1		10
MACD005	332.0	332.1		10
MACD005	333.0	333.1		10
MACD005	334.0	334.1		10
MACD005	335.0	335.1		10

834

599605

DHID9	FROM9	TOTD9	ROCK	ALTNG	SUSCPT
MACD005	336.0	336.1			10
MACD005	337.0	337.1			10
MACD005	338.0	338.1			10
MACD005	339.0	339.1			5
MACD005	340.0	340.1			10
MACD005	341.0	341.1			10
MACD005	342.0	342.1			10
MACD005	343.0	343.1			15
MACD005	344.0	344.1			15
MACD005	345.0	345.1			15
MACD005	346.0	346.1			10
MACD005	347.0	347.1			20
MACD005	348.0	348.1			10
MACD005	349.0	349.1			25
MACD005	350.0	350.1			10
MACD005	351.0	351.1			10
MACD005	352.0	352.1			10
MACD005	353.0	353.1			10
MACD005	354.0	354.1			20
MACD005	355.0	355.1			10
MACD005	356.0	356.1			10
MACD005	357.0	357.1			20
MACD005	358.0	358.1			20
MACD005	359.0	359.1			20
MACD005	360.0	360.1			
MACD005	361.0	361.1			
MACD005	362.0	362.1			20
MACD005	363.0	363.1			30
MACD005	364.0	364.1			30
MACD005	365.0	365.1			
MACD005	366.0	366.1			0
MACD005	367.0	367.1			20
MACD005	368.0	368.1			20
MACD005	369.0	369.1			30
MACD005	370.0	370.1			30
MACD005	371.0	371.1			30
MACD005	372.0	372.1			25
MACD005	373.0	373.1			25
MACD005	374.0	374.1			20
MACD005	375.0	375.1			30
MACD005	376.0	376.1			20
MACD005	377.0	377.1			30
MACD005	378.0	378.1			30
MACD005	379.0	379.1			30
MACD005	380.0	380.1			20
MACD005	381.0	381.1			25
MACD005	382.0	382.1			25
MACD005	383.0	383.1			20
MACD005	384.0	384.1			20
MACD005	385.0	385.1			25
MACD005	386.0	386.1			10
MACD005	387.0	387.1			20
MACD005	388.0	388.1			20

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD005	389.0	389.1			20
MACD005	390.0	390.1			25
MACD005	391.0	391.1			20
MACD005	392.0	392.1			20
MACD005	393.0	393.1			20
MACD005	394.0	394.1			20
MACD005	395.0	395.1			20
MACD005	396.0	396.1			30
MACD005	397.0	397.1			25
MACD005	398.0	398.1			30
MACD005	399.0	399.1			25
MACD005	400.0	400.1			30
MACD005	401.0	401.1			20
MACD005	402.0	402.1			30
MACD005	403.0	403.1			25
MACD005	404.0	404.1			30
MACD005	405.0	405.1			10
MACD005	406.0	406.1			40
MACD005	407.0	407.1			30
MACD005	408.0	408.1			35
MACD005	409.0	409.1			30
MACD005	410.0	410.1			30
MACD005	411.0	411.1			30
MACD005	412.0	412.1			20
MACD005	413.0	413.1			30
MACD005	414.0	414.1			40
MACD005	415.0	415.1			35
MACD005	416.0	416.1			30
MACD005	417.0	417.1			20
MACD005	418.0	418.1			30
MACD005	419.0	419.1			20
MACD005	420.0	420.1			20
MACD005	421.0	421.1			20
MACD005	422.0	422.1			20
MACD005	423.0	423.1			20
MACD005	424.0	424.1			
MACD006	0.0	0.1			
MACD006	1.0	1.1			
MACD006	2.0	2.1			
MACD006	3.0	3.1			
MACD006	4.0	4.1			
MACD006	5.0	5.1			
MACD006	6.0	6.1			10
MACD006	7.0	7.1			30
MACD006	8.0	8.1			10
MACD006	9.0	9.1			10
MACD006	10.0	10.1			10
MACD006	11.0	11.1			10
MACD006	12.0	12.1			10
MACD006	13.0	13.1			10
MACD006	14.0	14.1			30
MACD006	15.0	15.1			70

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
[redacted]ACD006	16.0	16.1			10
MACD006	17.0	17.1			10
[redacted]ACD006	18.0	18.1			20
[redacted]ACD006	19.0	19.1			20
MACD006	20.0	20.1			10
MACD006	21.0	21.1			20
[redacted]ACD006	22.0	22.1			20
[redacted]ACD006	23.0	23.1			10
MACD006	24.0	24.1			10
[redacted]ACD006	25.0	25.1			10
[redacted]ACD006	26.0	26.1			30
MACD006	27.0	27.1			20
MACD006	28.0	28.1			20
[redacted]ACD006	29.0	29.1			20
[redacted]ACD006	30.0	30.1			20
MACD006	31.0	31.1			20
[redacted]ACD006	32.0	32.1			20
[redacted]ACD006	33.0	33.1			30
MACD006	34.0	34.1			10
MACD006	35.0	35.1			10
[redacted]ACD006	36.0	36.1			20
MACD006	37.0	37.1			10
MACD006	38.0	38.1			10
[redacted]ACD006	39.0	39.1			10
[redacted]ACD006	40.0	40.1			10
MACD006	41.0	41.1			10
[redacted]ACD006	42.0	42.1			10
[redacted]ACD006	43.0	43.1			20
MACD006	44.0	44.1			10
MACD006	45.0	45.1			20
[redacted]ACD006	46.0	46.1			20
[redacted]ACD006	47.0	47.1			20
MACD006	48.0	48.1			20
[redacted]ACD006	49.0	49.1			20
[redacted]ACD006	50.0	50.1			20
MACD006	51.0	51.1			20
MACD006	52.0	52.1			20
[redacted]ACD006	53.0	53.1			20
[redacted]ACD006	54.0	54.1			30
MACD006	55.0	55.1			30
[redacted]ACD006	56.0	56.1			20
[redacted]ACD006	57.0	57.1			20
MACD006	58.0	58.1			20
MACD006	59.0	59.1			20
[redacted]ACD006	60.0	60.1			20
MACD006	61.0	61.1			20
MACD006	62.0	62.1			30
[redacted]ACD006	63.0	63.1			20
[redacted]ACD006	64.0	64.1			30
MACD006	65.0	65.1			20
MACD006	66.0	66.1			20
[redacted]ACD006	67.0	67.1			20
MACD006	68.0	68.1			30

837

DHID9	FROM9	TOT09	ROCK ALTNG	SUSCPT
MACD006	69.0	69.1		20
MACD006	70.0	70.1		20
MACD006	71.0	71.1		20
MACD006	72.0	72.1		20
MACD006	73.0	73.1		30
MACD006	74.0	74.1		20
MACD006	75.0	75.1		40
MACD006	76.0	76.1		10
MACD006	77.0	77.1		20
MACD006	78.0	78.1		30
MACD006	79.0	79.1		70
MACD006	80.0	80.1		40
MACD006	81.0	81.1		20
MACD006	82.0	82.1		30
MACD006	83.0	83.1		
MACD006	84.0	84.1		30
MACD006	85.0	85.1		40
MACD006	86.0	86.1		30
MACD006	87.0	87.1		20
MACD006	88.0	88.1		30
MACD006	89.0	89.1		20
MACD006	90.0	90.1		30
MACD006	91.0	91.1		30
MACD006	92.0	92.1		30
MACD006	93.0	93.1		40
MACD006	94.0	94.1		30
MACD006	95.0	95.1		30
MACD006	96.0	96.1		30
MACD006	97.0	97.1		40
MACD006	98.0	98.1		20
MACD006	99.0	99.1		30
MACD006	100.0	100.1		40
MACD006	101.0	101.1		30
MACD006	102.0	102.1		30
MACD006	103.0	103.1		30
MACD006	104.0	104.1		20
MACD006	105.0	105.1		20
MACD006	106.0	106.1		20
MACD006	107.0	107.1		30
MACD006	108.0	108.1		30
MACD006	109.0	109.1		20
MACD006	110.0	110.1		20
MACD006	111.0	111.1		20
MACD006	112.0	112.1		10
MACD006	113.0	113.1		20
MACD006	114.0	114.1		30
MACD006	115.0	115.1		30
MACD006	116.0	116.1		30
MACD006	117.0	117.1		20
MACD006	118.0	118.1		10
MACD006	119.0	119.1		20
MACD006	120.0	120.1		30
MACD006	121.0	121.1		20

599609

830

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD006	122.0	122.1			20
MACD006	123.0	123.1			10
MACD006	124.0	124.1			10
MACD006	125.0	125.1			10
MACD006	126.0	126.1			10
MACD006	127.0	127.1			30
MACD006	128.0	128.1			20
MACD006	129.0	129.1			50
MACD006	130.0	130.1			20
MACD006	131.0	131.1			30
MACD006	132.0	132.1			30
MACD006	133.0	133.1			20
MACD006	134.0	134.1			30
MACD006	135.0	135.1			10
MACD006	136.0	136.1			30
MACD006	137.0	137.1			30
MACD006	138.0	138.1			30
MACD006	139.0	139.1			20
MACD006	140.0	140.1			30
MACD006	141.0	141.1			20
MACD006	142.0	142.1			20
MACD006	143.0	143.1			30
MACD006	144.0	144.1			30
MACD006	145.0	145.1			30
MACD006	146.0	146.1			20
MACD006	147.0	147.1			20
MACD006	148.0	148.1			30
MACD006	149.0	149.1			30
MACD006	150.0	150.1			30
MACD006	151.0	151.1			20
MACD006	152.0	152.1			30
MACD006	153.0	153.1			30
MACD006	154.0	154.1			40
MACD006	155.0	155.1			30
MACD006	156.0	156.1			30
MACD006	157.0	157.1			30
MACD006	158.0	158.1			30
MACD006	159.0	159.1			10
MACD006	160.0	160.1			30
MACD006	161.0	161.1			30
MACD006	162.0	162.1			30
MACD006	163.0	163.1			30
MACD006	164.0	164.1			30
MACD006	165.0	165.1			40
MACD006	166.0	166.1			30
MACD006	167.0	167.1			30
MACD006	168.0	168.1			20
MACD006	169.0	169.1			30
MACD006	170.0	170.1			30
MACD006	171.0	171.1			40
MACD006	172.0	172.1			30
MACD006	173.0	173.1			20
MACD006	174.0	174.1			30

599610

839

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD006	175.0	175.1			30
MACD006	176.0	176.1			30
MACD006	177.0	177.1			30
MACD006	178.0	178.1			20
MACD006	179.0	179.1			30
MACD006	180.0	180.1			30
MACD006	181.0	181.1			30
MACD006	182.0	182.1			30
MACD006	183.0	183.1			30
MACD006	184.0	184.1			30
MACD006	185.0	185.1			30
MACD006	186.0	186.1			30
MACD006	187.0	187.1			20
MACD006	188.0	188.1			30
MACD006	189.0	189.1			30
MACD006	190.0	190.1			30
MACD006	191.0	191.1			20
MACD006	192.0	192.1			20
MACD006	193.0	193.1			20
MACD006	194.0	194.1			20
MACD006	195.0	195.1			20
MACD006	196.0	196.1			10
MACD006	197.0	197.1			10
MACD006	198.0	198.1			20
MACD006	199.0	199.1			20
MACD006	200.0	200.1			20
MACD006	201.0	201.1			20
MACD006	202.0	202.1			10
MACD006	203.0	203.1			20
MACD006	204.0	204.1			30
MACD006	205.0	205.1			20
MACD006	206.0	206.1			20
MACD006	207.0	207.1			20
MACD006	208.0	208.1			20
MACD006	209.0	209.1			30
MACD006	210.0	210.1			30
MACD006	211.0	211.1			20
MACD006	212.0	212.1			30
MACD006	213.0	213.1			30
MACD006	214.0	214.1			30
MACD006	215.0	215.1			30
MACD006	216.0	216.1			10
MACD006	217.0	217.1			30
MACD006	218.0	218.1			20
MACD006	219.0	219.1			20
MACD006	220.0	220.1			20
MACD006	221.0	221.1			10
MACD006	222.0	222.1			20
MACD006	223.0	223.1			20
MACD006	224.0	224.1			20
MACD006	225.0	225.1			10
MACD006	226.0	226.1			10
MACD006	227.0	227.1			20

599611

840

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD006	228.0	228.1			20
MACD006	229.0	229.1			20
MACD006	230.0	230.1			10
MACD006	231.0	231.1			10
MACD006	232.0	232.1			10
MACD006	233.0	233.1			30
MACD006	234.0	234.1			20
MACD006	235.0	235.1			20
MACD006	236.0	236.1			20
MACD006	237.0	237.1			20
MACD006	238.0	238.1			30
MACD006	239.0	239.1			20
MACD006	240.0	240.1			20
MACD006	241.0	241.1			20
MACD006	242.0	242.1			20
MACD006	243.0	243.1			20
MACD006	244.0	244.1			20
MACD006	245.0	245.1			30
MACD006	246.0	246.1			30
MACD006	247.0	247.1			30
MACD006	248.0	248.1			30
MACD006	249.0	249.1			40
MACD006	250.0	250.1			30
MACD006	251.0	251.1			30
MACD006	252.0	252.1			30
MACD007	0.0	0.1			
MACD007	1.0	1.1			
MACD007	2.0	2.1			
MACD007	3.0	3.1			
MACD007	4.0	4.1			
MACD007	5.0	5.1			
MACD007	6.0	6.1			
MACD007	7.0	7.1			
MACD007	8.0	8.1			
MACD007	9.0	9.1			
MACD007	10.0	10.1			
MACD007	11.0	11.1			
MACD007	12.0	12.1			
MACD007	13.0	13.1			
MACD007	14.0	14.1			
MACD007	15.0	15.1			
MACD007	16.0	16.1			
MACD007	17.0	17.1			20
MACD007	18.0	18.1			
MACD007	19.0	19.1			30
MACD007	20.0	20.1			20
MACD007	21.0	21.1			
MACD007	22.0	22.1			
MACD007	23.0	23.1			
MACD007	24.0	24.1			
MACD007	25.0	25.1			25
MACD007	26.0	26.1			20

(841

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD007	27.0	27.1			
MACD007	28.0	28.1			
MACD007	29.0	29.1			
MACD007	30.0	30.1			
MACD007	31.0	31.1			
MACD007	32.0	32.1			
MACD007	33.0	33.1			
MACD007	34.0	34.1			
MACD007	35.0	35.1			
MACD007	36.0	36.1			25
MACD007	37.0	37.1			25
MACD007	38.0	38.1			25
MACD007	39.0	39.1			
MACD007	40.0	40.1			
MACD007	41.0	41.1			25
MACD007	42.0	42.1			35
MACD007	43.0	43.1			30
MACD007	44.0	44.1			
MACD007	45.0	45.1			
MACD007	46.0	46.1			20
MACD007	47.0	47.1			20
MACD007	48.0	48.1			20
MACD007	49.0	49.1			15
MACD007	50.0	50.1			10
MACD007	51.0	51.1			35
MACD007	52.0	52.1			25
MACD007	53.0	53.1			20
MACD007	54.0	54.1			20
MACD007	55.0	55.1			15
MACD007	56.0	56.1			20
MACD007	57.0	57.1			15
MACD007	58.0	58.1			15
MACD007	59.0	59.1			15
MACD007	60.0	60.1			10
MACD007	61.0	61.1			20
MACD007	62.0	62.1			15
MACD007	63.0	63.1			20
MACD007	64.0	64.1			10
MACD007	65.0	65.1			20
MACD007	66.0	66.1			5
MACD007	67.0	67.1			
MACD007	68.0	68.1			20
MACD007	69.0	69.1			30
MACD007	70.0	70.1			20
MACD007	71.0	71.1			25
MACD007	72.0	72.1			50
MACD007	73.0	73.1			40
MACD007	74.0	74.1			10
MACD007	75.0	75.1			25
MACD007	76.0	76.1			35
MACD007	77.0	77.1			35
MACD007	78.0	78.1			30
MACD007	79.0	79.1			30

599613

842

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
[redacted]ACD007	80.0	80.1			35
MACD007	81.0	81.1			55
[redacted]ACD007	82.0	82.1			50
[redacted]ACD007	83.0	83.1			
MACD007	84.0	84.1			55
MACD007	85.0	85.1			40
[redacted]ACD007	86.0	86.1			10
[redacted]ACD007	87.0	87.1			35
MACD007	88.0	88.1			35
[redacted]ACD007	89.0	89.1			35
[redacted]ACD007	90.0	90.1			
MACD007	91.0	91.1			
[redacted]ACD007	92.0	92.1			
[redacted]ACD007	93.0	93.1			40
MACD007	94.0	94.1			30
MACD007	95.0	95.1			40
[redacted]ACD007	96.0	96.1			30
[redacted]ACD007	97.0	97.1			30
MACD007	98.0	98.1			35
[redacted]ACD007	99.0	99.1			30
[redacted]ACD007	100.0	100.1			30
MACD007	101.0	101.1			30
MACD007	102.0	102.1			30
[redacted]ACD007	103.0	103.1			35
[redacted]ACD007	104.0	104.1			30
MACD007	105.0	105.1			30
[redacted]ACD007	106.0	106.1			20
[redacted]ACD007	107.0	107.1			30
MACD007	108.0	108.1			30
MACD007	109.0	109.1			25
[redacted]ACD007	110.0	110.1			5
[redacted]ACD007	111.0	111.1			30
MACD007	112.0	112.1			40
[redacted]ACD007	113.0	113.1			30
[redacted]ACD007	114.0	114.1			30
MACD007	115.0	115.1			30
MACD007	116.0	116.1			35
[redacted]ACD007	117.0	117.1			30
[redacted]ACD007	118.0	118.1			30
MACD007	119.0	119.1			30
[redacted]ACD007	120.0	120.1			40
[redacted]ACD007	121.0	121.1			10
MACD007	122.0	122.1			10
MACD007	123.0	123.1			40
[redacted]ACD007	124.0	124.1			30
MACD007	125.0	125.1			35
MACD007	126.0	126.1			40
[redacted]ACD007	127.0	127.1			35
[redacted]ACD007	128.0	128.1			35
MACD007	129.0	129.1			35
MACD007	130.0	130.1			40
[redacted]ACD007	131.0	131.1			30
MACD007	132.0	132.1			30

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD007	133.0	133.1			30
MACD007	134.0	134.1			30
MACD007	135.0	135.1			25
MACD007	136.0	136.1			25
MACD007	137.0	137.1			20
MACD007	138.0	138.1			40
MACD007	139.0	139.1			30
MACD007	140.0	140.1			30
MACD007	141.0	141.1			40
MACD007	142.0	142.1			40
MACD007	143.0	143.1			20
MACD007	144.0	144.1			10
MACD007	145.0	145.1			35
MACD007	146.0	146.1			20
MACD007	147.0	147.1			10
MACD007	148.0	148.1			10
MACD007	149.0	149.1			10
MACD007	150.0	150.1			15
MACD007	151.0	151.1			10
MACD007	152.0	152.1			15
MACD007	153.0	153.1			20
MACD007	154.0	154.1			20
MACD007	155.0	155.1			15
MACD007	156.0	156.1			15
MACD007	157.0	157.1			15
MACD007	158.0	158.1			15
MACD007	159.0	159.1			15
MACD007	160.0	160.1			10
MACD007	161.0	161.1			20
MACD007	162.0	162.1			20
MACD007	163.0	163.1			15
MACD007	164.0	164.1			15
MACD007	165.0	165.1			20
MACD007	166.0	166.1			15
MACD007	167.0	167.1			10
MACD007	168.0	168.1			10
MACD007	169.0	169.1			10
MACD007	170.0	170.1			10
MACD007	171.0	171.1			10
MACD007	172.0	172.1			10
MACD007	173.0	173.1			10
MACD007	174.0	174.1			10
MACD007	175.0	175.1			10
MACD007	176.0	176.1			15
MACD007	177.0	177.1			10
MACD007	178.0	178.1			10
MACD007	179.0	179.1			10
MACD007	180.0	180.1			10
MACD007	181.0	181.1			10
MACD007	182.0	182.1			10
MACD007	183.0	183.1			10
MACD007	184.0	184.1			10
MACD007	185.0	185.1			10

Flist..File (?LIST::30) Date 2:36 PM MON., 29 JUNE, 1987 Page001

report on data-set @GPHMH from data-base @DBDMH:MH:20

using key-item KDHID from master-set @MIDMH

599616

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
HATD008	0.0	0.1			
HATD008	1.0	1.1			
HATD008	2.0	2.1			
HATD008	3.0	3.1			
HATD008	4.0	4.1			
HATD008	5.0	5.1			
HATD008	6.0	6.1			
HATD008	7.0	7.1			
HATD008	8.0	8.1			
HATD008	9.0	9.1			
HATD008	10.0	10.1			
HATD008	11.0	11.1			
HATD008	12.0	12.1			
HATD008	13.0	13.1			
HATD008	14.0	14.1			
HATD008	15.0	15.1			
HATD008	16.0	16.1			
HATD008	17.0	17.1			
HATD008	18.0	18.1			
HATD008	19.0	19.1			
HATD008	20.0	20.1			
HATD008	21.0	21.1			
HATD008	22.0	22.1			
HATD008	23.0	23.1			
HATD008	24.0	24.1			
HATD008	25.0	25.1			20
HATD008	26.0	26.1			30
HATD008	27.0	27.1			40
HATD008	28.0	28.1			40
HATD008	29.0	29.1			40
HATD008	30.0	30.1			50
HATD008	31.0	31.1			20
HATD008	32.0	32.1			20
HATD008	33.0	33.1			40
HATD008	34.0	34.1			30
HATD008	35.0	35.1			40
HATD008	36.0	36.1			40
HATD008	37.0	37.1			
HATD008	38.0	38.1			20
HATD008	39.0	39.1			30
HATD008	40.0	40.1			30
HATD008	41.0	41.1			30
HATD008	42.0	42.1			20
HATD008	43.0	43.1			40
HATD008	44.0	44.1			30
HATD008	45.0	45.1			30
HATD008	46.0	46.1			20
HATD008	47.0	47.1			40
HATD008	48.0	48.1			20
HATD008	49.0	49.1			30
HATD008	50.0	50.1			20
HATD008	51.0	51.1			30
HATD008	52.0	52.1			20

599617

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
HATD008	53.0	53.1			30
HATD008	54.0	54.1			30
HATD008	55.0	55.1			30
HATD008	56.0	56.1			30
HATD008	57.0	57.1			
HATD008	58.0	58.1			20
HATD008	59.0	59.1			30
HATD008	60.0	60.1			30
HATD008	61.0	61.1			30
HATD008	62.0	62.1			
HATD008	63.0	63.1			40
HATD008	64.0	64.1			30
HATD008	65.0	65.1			30
HATD008	66.0	66.1			40
HATD008	67.0	67.1			30
HATD008	68.0	68.1			30
HATD008	69.0	69.1			30
HATD008	70.0	70.1			40
HATD008	71.0	71.1			40
HATD008	72.0	72.1			30
HATD008	73.0	73.1			40
HATD008	74.0	74.1			30
HATD008	75.0	7541			40
HATD008	76.0	76.1			30
HATD008	77.0	77.1			30
HATD008	78.0	78.1			30
HATD008	79.0	79.1			40
HATD008	80.0	80.1			40
HATD008	81.0	81.1			40
HATD008	82.0	82.1			40
HATD008	83.0	83.1			30
HATD008	84.0	84.1			30
HATD008	85.0	85.1			30
HATD008	86.0	86.1			30
HATD008	87.0	87.1			30
HATD008	88.0	88.1			30
HATD008	89.0	89.1			30
HATD008	90.0	90.1			30
HATD008	91.0	91.1			30
HATD008	92.0	92.1			
HATD008	93.0	93.1			
HATD008	94.0	94.1			
HATD008	95.0	95.1			
HATD008	96.0	96.1			30
HATD008	97.0	97.1			40
HATD008	98.0	98.1			30
HATD008	99.0	99.1			30
HATD008	100.0	100.1			30
HATD008	101.0	101.1			30
HATD008	102.0	102.1			40
HATD008	103.0	103.1			30
HATD008	104.0	104.1			20
HATD008	105.0	105.1			10

599618

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
HATD008	106.0	106.1			30
HATD008	107.0	107.1			30
HATD008	108.0	108.1			20
HATD008	109.0	109.1			30
HATD008	110.0	110.1			10
HATD008	111.0	111.1			10
HATD008	112.0	112.1			30
HATD008	113.0	113.1			30
HATD008	114.0	114.1			30
HATD008	115.0	115.1			30
HATD008	116.0	116.1			20
HATD008	117.0	117.1			30
HATD008	118.0	118.1			30
HATD008	119.0	119.1			20
HATD008	120.0	120.1			30
HATD008	121.0	121.1			20
HATD008	122.0	122.1			20
HATD008	123.0	123.1			20
HATD008	124.0	124.1			20
HATD008	125.0	125.1			30
HATD008	126.0	126.1			40
HATD008	127.0	127.1			30
HATD008	128.0	128.1			20
HATD008	129.0	129.1			20
HATD008	130.0	130.1			30
HATD008	131.0	131.1			20
HATD008	132.0	132.1			20
HATD008	133.0	133.1			20
HATD008	134.0	134.1			30
HATD008	135.0	135.1			20
HATD008	136.0	136.1			40
HATD008	137.0	137.1			30
HATD008	138.0	138.1			30
HATD008	139.0	139.1			30
HATD008	140.0	140.1			20
HATD008	141.0	141.1			40
HATD008	142.0	142.1			40
HATD008	143.0	143.1			20
HATD008	144.0	144.1			20
HATD008	145.0	145.1			40
HATD008	146.0	146.1			30
HATD008	147.0	147.1			30
HATD008	148.0	148.1			30
HATD008	149.0	149.1			20
HATD008	150.0	150.1			30
HATD008	151.0	151.1			10
HATD008	152.0	152.1			30
HATD008	153.0	153.1			30
HATD008	154.0	154.1			20
HATD008	155.0	155.1			30
HATD008	156.0	156.1			30
HATD008	157.0	157.1			30
HATD008	158.0	158.1			30

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
HATD008	159.0	159.1			30
HATD008	160.0	160.1			30
HATD008	161.0	161.1			40
HATD008	162.0	162.1			30
HATD008	163.0	163.1			40
HATD008	164.0	164.1			30
HATD008	165.0	165.1			30
HATD008	166.0	166.1			30
HATD008	167.0	167.1			30
HATD008	168.0	168.1			30
HATD008	169.0	169.1			30
HATD008	170.0	170.1			40
HATD008	171.0	171.1			30
HATD008	172.0	172.1			30
HATD008	173.0	173.1			30
HATD008	174.0	174.1			40
HATD008	175.0	175.1			40
HATD008	176.0	176.1			40
HATD008	177.0	177.1			20
HATD008	178.0	178.1			30
HATD008	179.0	179.1			40
HATD008	180.0	180.1			30
HATD008	181.0	181.1			30
HATD008	182.0	182.1			20
HATD008	183.0	183.1			30
HATD008	184.0	184.1			40
HATD008	185.0	185.1			30
HATD008	186.0	186.1			40
HATD008	187.0	187.1			40
HATD008	188.0	188.1			40
HATD008	189.0	189.1			40
HATD008	190.0	190.1			40
HATD008	191.0	191.1			40
HATD008	192.0	192.1			30
HATD008	193.0	193.1			30
HATD008	194.0	194.1			30
HATD008	195.0	195.1			40
HATD008	196.0	196.1			50
HATD008	197.0	197.1			50
HATD008	198.0	198.1			40
HATD008	199.0	199.1			30
HATD008	200.0	200.1			30
HATD008	201.0	201.1			40
HATD008	202.0	202.1			20
HATD008	203.0	203.1			10
HATD008	204.0	204.1			30
HATD008	205.0	205.1			30
HATD008	206.0	206.1			40
HATD008	207.0	207.1			30
HATD008	208.0	208.1			40
HATD008	209.0	209.1			30
HATD008	210.0	210.1			20
HATD008	211.0	211.1			20

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
HATD008	212.0	212.1			40
HATD008	213.0	213.1			30
HATD008	214.0	214.1			30
HATD008	215.0	215.1			30
HATD008	216.0	216.1			30
HATD008	217.0	217.1			20
HATD008	218.0	218.1			20
HATD008	219.0	219.1			30
HATD008	220.0	220.1			30
HATD008	221.0	221.1			20
HATD008	222.0	222.1			30
HATD008	223.0	223.1			20
HATD008	224.0	224.1			20
HATD008	225.0	225.1			20
HATD008	226.0	226.1			20
HATD008	227.0	227.1			30
HATD008	228.0	228.1			30
HATD008	229.0	229.1			40
HATD008	230.0	230.1			40
HATD008	231.0	231.1			30
HATD008	232.0	232.1			50
HATD008	233.0	233.1			30
HATD008	234.0	234.1			40
HATD008	235.0	235.1			50
HATD008	236.0	236.1			30
HATD008	237.0	237.1			50
HATD008	238.0	238.1			20
HATD008	239.0	239.1			30
HATD008	240.0	240.1			20
HATD008	241.0	241.1			40
HATD008	242.0	242.1			20
HATD008	243.0	243.1			40
HATD008	244.0	244.1			30
HATD008	245.0	245.1			30
HATD008	246.0	246.1			30
HATD008	247.0	247.1			30
HATD008	248.0	248.1			30
HATD008	249.0	249.1			20
HATD008	250.0	250.1			30
HATD008	251.0	251.1			30
HATD008	252.0	252.1			30
HATD008	253.0	253.1			30
HATD008	254.0	254.1			20
HATD008	255.0	255.1			20
HATD008	256.0	256.1			40
HATD008	257.0	257.1			30
HATD008	258.0	258.1			30
HATD008	259.0	259.1			20
HATD008	260.0	260.1			30
HATD008	261.0	261.1			20
HATD008	262.0	262.1			30
HATD008	263.0	263.1			20
HATD008	264.0	264.1			30

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
HATD008	265.0	265.1			30
HATD008	266.0	266.1			20
HATD008	267.0	267.1			20
HATD008	268.0	268.1			20
HATD008	269.0	269.1			30
HATD008	270.0	270.1			30
HATD008	271.0	271.1			30
HATD008	272.0	272.1			20
HATD008	273.0	273.1			20
HATD008	274.0	274.1			30
HATD008	275.0	275.1			30
HATD008	276.0	276.1			30
HATD008	277.0	277.1			30
HATD008	278.0	278.1			40
HATD008	279.0	279.1			40
HATD008	280.0	280.1			40
HATD008	281.0	281.1			30
HATD008	282.0	282.1			30
HATD008	283.0	283.1			30
HATD008	284.0	284.1			40
HATD008	285.0	285.1			40
HATD008	286.0	286.1			30
HATD008	287.0	287.1			30
HATD008	288.0	288.1			20
HATD008	289.0	289.1			30
HATD008	290.0	290.1			30
HATD008	291.0	291.1			30
HATD008	292.0	292.1			40
HATD008	293.0	293.1			40
HATD008	294.0	294.1			30
HATD008	295.0	295.1			40
HATD008	296.0	296.1			40
HATD008	297.0	297.1			40
HATD008	298.0	298.1			30
HATD008	299.0	299.1			40
HATD008	300.0	300.1			30
HATD008	301.0	301.1			20
HATD008	302.0	302.1			20
HATD008	303.0	303.1			30
HATD008	304.0	304.1			30
HATD008	305.0	305.1			20
HATD008	306.0	306.1			20
HATD008	307.0	307.1			30
HATD008	308.0	308.1			30
HATD008	309.0	309.1			30
HATD008	310.0	310.1			30
HATD008	311.0	311.1			20
HATD008	312.0	312.1			10
HATD008	313.0	313.1			20
HATD008	314.0	314.1			20
HATD008	315.0	315.1			20
HATD008	316.0	316.1			40
HATD008	317.0	317.1			30

599622

851

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
HATD008	318.0	318.1			20
HATD008	319.0	319.1			20
HATD008	320.0	320.1			20
HATD008	321.0	321.1			40
HATD008	322.0	322.1			30
HATD008	323.0	323.1			20
HATD008	324.0	324.1			20
HATD008	325.0	325.1			10
HATD008	326.0	326.1			20
HATD008	327.0	327.1			30
HATD008	328.0	328.1			30
HATD008	329.0	329.1			30
HATD008	330.0	330.1			20
HATD008	331.0	331.1			30
HATD008	332.0	332.1			30
HATD008	333.0	333.1			30
HATD008	334.0	334.1			20
HATD008	335.0	335.1			20
HATD008	336.0	336.1			20
HATD008	337.0	337.1			30
HATD008	338.0	338.1			30
HATD008	339.0	339.1			20
HATD008	340.0	340.1			40
HATD008	341.0	341.1			30
HATD008	342.0	342.1			30
HATD008	343.0	343.1			30
HATD008	344.0	344.1			30
HATD008	345.0	345.1			30
HATD008	346.0	346.1			20
HATD008	347.0	347.1			30
HATD008	348.0	348.1			20
HATD008	349.0	349.1			30
HATD008	350.0	350.1			30
HATD008	351.0	351.1			30
HATD008	352.0	352.1			40
HATD008	353.0	353.1			30
HATD008	354.0	354.1			20
HATD008	355.0	355.1			40
HATD008	356.0	356.1			30
HATD008	357.0	357.1			20
HATD008	358.0	358.1			20
HATD008	359.0	359.1			50
HATD008	360.0	360.1			40
HATD008	361.0	361.1			30
HATD008	362.0	362.1			30
HATD008	363.0	363.1			30
HATD008	364.0	364.1			30
HATD008	365.0	365.1			30
HATD008	366.0	366.1			30
HATD008	367.0	367.1			20
HATD008	368.0	368.1			30
HATD008	369.0	369.1			30
HATD008	370.0	370.1			30

599623

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
HATD008	371.0	371.1			30
HATD008	372.0	372.1			30
HATD008	373.0	373.1			20
HATD008	374.0	374.1			30
HATD008	375.0	375.1			10
HATD008	376.0	376.1			20
HATD008	377.0	377.1			20
HATD008	378.0	378.1			40
HATD008	379.0	379.1			40
HATD008	380.0	380.1			20
HATD008	381.0	381.1			0
HATD008	382.0	382.1			30
HATD008	383.0	383.1			30
HATD008	384.0	384.1			40
HATD008	385.0	385.1			30
HATD008	386.0	386.1			40
HATD008	387.0	387.1			30
HATD008	388.0	388.1			40
HATD008	389.0	389.1			30
HATD008	390.0	390.1			20
HATD008	391.0	391.1			40
HATD008	392.0	392.1			40
HATD008	393.0	393.1			30
HATD008	394.0	394.1			30
HATD008	395.0	395.1			30
HATD008	396.0	396.1			30
HATD008	397.0	397.1			30
HATD008	398.0	398.1			30
HATD008	399.0	399.1			30
HATD008	400.0	400.1			30
HATD008	401.0	401.1			30
HATD008	402.0	402.1			40
HATD008	403.0	403.1			30
MACD001	2.0	2.1			10
MACD001	3.0	3.1			10
MACD001	4.0	4.1			
MACD001	5.0	5.1			
MACD001	6.0	6.1			5
MACD001	7.0	7.1			
MACD001	8.0	8.1			0
MACD001	9.0	9.1			
MACD001	10.0	10.1			10
MACD001	11.0	11.1			10
MACD001	12.0	12.1			10
MACD001	13.0	13.1			5
MACD001	14.0	14.1			5
MACD001	15.0	15.1			5
MACD001	16.0	16.1			
MACD001	17.0	17.1			
MACD001	18.0	18.1			
MACD001	19.0	19.1			
MACD001	20.0	20.1			

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD001	21.0	21.1			
MACD001	22.0	22.1			
MACD001	23.0	23.1			
MACD001	24.0	24.1			
MACD001	25.0	25.1			
MACD001	26.0	26.1			60
MACD001	27.0	27.1			15
MACD001	28.0	28.1			50
MACD001	29.0	29.1			35
MACD001	30.0	30.1			
MACD001	31.0	31.1			50
MACD001	32.0	32.1			40
MACD001	33.0	33.1			30
MACD001	34.0	34.1			20
MACD001	35.0	35.1			15
MACD001	36.0	36.1			15
MACD001	37.0	37.1			20
MACD001	38.0	38.1			30
MACD001	39.0	39.1			20
MACD001	40.0	40.1			30
MACD001	41.0	41.1			40
MACD001	42.0	42.1			30
MACD001	43.0	43.1			30
MACD001	44.0	44.1			25
MACD001	45.0	45.1			25
MACD001	46.0	46.1			15
MACD001	47.0	47.1			10
MACD001	48.0	48.1			10
MACD001	49.0	49.1			5
MACD001	50.0	50.1			20
MACD001	51.0	51.1			40
MACD001	52.0	52.1			40
MACD001	53.0	53.1			40
MACD001	54.0	54.1			60
MACD001	55.0	55.1			35
MACD001	56.0	56.1			120
MACD001	57.0	57.1			85
MACD001	58.0	58.1			85
MACD001	59.0	59.1			95
MACD001	60.0	60.1			85
MACD001	61.0	61.1			110
MACD001	62.0	62.1			85
MACD001	63.0	63.1			85
MACD001	64.0	64.1			135
MACD001	65.0	65.1			90
MACD001	66.0	66.1			65
MACD001	67.0	67.1			60
MACD001	68.0	68.1			65
MACD001	69.0	69.1			55
MACD001	70.0	70.1			75
MACD001	71.0	71.1			70
MACD001	72.0	72.1			50
MACD001	73.0	73.1			70

599625

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD001	74.0	74.1			55
MACD001	75.0	75.1			50
MACD001	76.0	76.1			45
MACD001	77.0	77.1			60
MACD001	78.0	78.1			35
MACD001	79.0	79.1			50
MACD001	80.0	80.1			75
MACD001	81.0	81.1			60
MACD001	82.0	82.1			75
MACD001	83.0	83.1			80
MACD001	84.0	84.1			70
MACD001	85.0	85.1			
MACD001	86.0	86.1			40
MACD001	87.0	87.1			90
MACD001	88.0	88.1			60
MACD001	89.0	89.1			60
MACD001	90.0	90.1			50
MACD001	91.0	91.1			75
MACD001	92.0	92.1			25
MACD001	93.0	93.1			75
MACD001	94.0	94.1			30
MACD001	95.0	95.1			90
MACD001	96.0	96.1			50
MACD001	97.0	97.1			50
MACD001	98.0	98.1			50
MACD001	99.0	99.1			45
MACD001	100.0	100.1			55
MACD001	101.0	101.1			25
MACD001	102.0	102.1			35
MACD001	103.0	103.1			60
MACD001	104.0	104.1			55
MACD001	105.0	105.1			80
MACD001	106.0	106.1			75
MACD001	107.0	107.1			70
MACD001	108.0	108.1			60
MACD001	109.0	109.1			45
MACD001	110.0	110.1			75
MACD001	111.0	111.1			60
MACD001	112.0	112.1			70
MACD001	113.0	113.1			80
MACD001	114.0	114.1			60
MACD001	115.0	115.1			
MACD001	116.0	116.1			50
MACD001	117.0	117.1			70
MACD001	118.0	118.1			60
MACD001	119.0	119.1			60
MACD001	120.0	120.1			50
MACD001	121.0	121.1			50
MACD001	122.0	122.1			70
MACD001	123.0	123.1			65
MACD001	124.0	124.1			70
MACD001	125.0	125.1			70
MACD001	126.0	126.1			80

599626

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD001	127.0	127.1			75
MACD001	128.0	128.1			85
MACD001	129.0	129.1			120
MACD001	130.0	130.1			110
MACD001	131.0	131.1			80
MACD001	132.0	132.1			80
MACD001	133.0	133.1			75
MACD001	134.0	134.1			105
MACD001	135.0	135.1			70
MACD001	136.0	136.1			310
MACD001	137.0	137.1			150
MACD001	138.0	138.1			850
MACD001	139.0	139.1			880
MACD001	140.0	140.1			60
MACD001	141.0	141.1			170
MACD001	142.0	142.1			280
MACD001	143.0	143.1			540
MACD001	144.0	144.1			85
MACD001	145.0	145.1			115
MACD001	146.0	146.1			1100
MACD001	147.0	147.1			2100
MACD001	148.0	148.1			2600
MACD001	149.0	149.1			1150
MACD001	150.0	150.1			220
MACD001	151.0	151.1			340
MACD001	152.0	152.1			95
MACD001	153.0	153.1			70
MACD001	154.0	154.1			75
MACD001	155.0	155.1			35
MACD001	156.0	156.1			
MACD001	157.0	157.1			
MACD001	158.0	158.1			
MACD001	159.0	159.1			
MACD001	160.0	160.1			30
MACD001	161.0	161.1			30
MACD001	162.0	162.1			
MACD001	163.0	163.1			80
MACD001	164.0	164.1			85
MACD001	165.0	165.1			75
MACD001	166.0	166.1			65
MACD001	167.0	167.1			75
MACD001	168.0	168.1			100
MACD001	169.0	169.1			110
MACD001	170.0	170.1			45
MACD001	171.0	171.1			
MACD001	172.0	172.1			
MACD001	173.0	173.1			25
MACD001	174.0	174.1			95
MACD001	175.0	175.1			95
MACD001	176.0	176.1			100
MACD001	177.0	177.1			95
MACD001	178.0	178.1			60
MACD001	179.0	179.1			90

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD001	180.0	180.1			80
MACD001	181.0	181.1			115
MACD001	182.0	182.1			250
MACD001	183.0	183.1			85
MACD001	184.0	184.1			90
MACD001	185.0	185.1			170
MACD001	186.0	186.1			145
MACD001	187.0	187.1			100
MACD001	188.0	188.1			85
MACD001	189.0	189.1			85
MACD001	190.0	190.1			105
MACD001	191.0	191.1			90
MACD001	192.0	192.1			130
MACD001	193.0	193.1			120
MACD001	194.0	194.1			110
MACD001	195.0	195.1			90
MACD001	196.0	196.1			80
MACD001	197.0	197.1			120
MACD001	198.0	198.1			120
MACD001	199.0	199.1			105
MACD001	200.0	200.1			115
MACD001	201.0	201.1			115
MACD001	202.0	202.1			105
MACD001	203.0	203.1			40
MACD001	204.0	204.1			25
MACD001	205.0	205.1			35
MACD001	206.0	206.1			25
MACD001	207.0	207.1			20
MACD001	208.0	208.1			45
MACD001	209.0	209.1			45
MACD001	210.0	210.1			40
MACD001	211.0	211.1			25
MACD001	212.0	212.1			50
MACD001	213.0	213.1			45
MACD001	214.0	214.1			25
MACD001	215.0	215.1			85
MACD001	216.0	216.1			60
MACD001	217.0	217.1			55
MACD001	218.0	218.1			55
MACD001	219.0	219.1			45
MACD001	220.0	220.1			65
MACD001	221.0	221.1			45
MACD001	222.0	222.1			40
MACD001	223.0	223.1			55
MACD001	224.0	224.1			60
MACD001	225.0	225.1			40
MACD001	226.0	226.1			15
MACD001	227.0	227.1			25
MACD001	228.0	228.1			40
MACD001	229.0	229.1			30
MACD001	230.0	230.1			80
MACD001	231.0	231.1			40
MACD001	232.0	232.1			65

857

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD001	233.0	233.1			45
MACD001	234.0	234.1			15
MACD001	235.0	235.1			70
MACD001	236.0	236.1			50
MACD001	237.0	237.1			55
MACD001	238.0	238.1			20
MACD001	239.0	239.1			60
MACD001	240.0	240.1			45
MACD001	241.0	241.1			35
MACD001	242.0	242.1			15
MACD001	243.0	243.1			45
MACD001	244.0	244.1			25
MACD001	245.0	245.1			35
MACD001	246.0	246.1			75
MACD001	247.0	247.1			35
MACD001	248.0	248.1			30
MACD001	249.0	249.1			35
MACD001	250.0	250.1			50
MACD001	251.0	251.1			40
MACD001	252.0	252.1			35
MACD001	253.0	253.1			20
MACD001	254.0	254.1			40
MACD001	255.0	255.1			35
MACD001	256.0	256.1			35
MACD001	257.0	257.1			55
MACD001	258.0	258.1			50
MACD001	259.0	259.1			15
MACD001	260.0	260.1			30
MACD001	261.0	261.1			40
MACD001	262.0	262.1			35
MACD001	263.0	263.1			35
MACD001	264.0	264.1			55
MACD001	265.0	265.1			45
MACD001	266.0	266.1			55
MACD001	267.0	267.1			35
MACD001	268.0	268.1			30
MACD001	269.0	269.1			40
MACD001	270.0	270.1			35
MACD001	271.0	271.1			45
MACD001	272.0	272.1			30
MACD001	273.0	273.1			30
MACD001	274.0	274.1			70
MACD001	275.0	275.1			30
MACD001	276.0	276.1			15
MACD001	277.0	277.1			30
MACD001	278.0	278.1			20
MACD001	279.0	279.1			30
MACD001	280.0	280.1			35
MACD001	281.0	281.1			30
MACD001	282.0	282.1			35
MACD001	283.0	283.1			55
MACD001	284.0	284.1			70
MACD001	285.0	285.1			60

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
[redacted]ACD001	286.0	286.1			45
[redacted]ACD001	287.0	287.1			30
MACD001	288.0	288.1			65
[redacted]ACD001	289.0	289.1			50
[redacted]ACD001	290.0	290.1			50
MACD001	291.0	291.1			25
MACD001	292.0	292.1			35
[redacted]ACD001	293.0	293.1			40
[redacted]ACD001	294.0	294.1			65
MACD001	295.0	295.1			35
[redacted]ACD001	296.0	296.1			80
[redacted]ACD001	297.0	297.1			105
MACD001	298.0	298.1			90
MACD001	299.0	299.1			100
[redacted]ACD001	300.0	300.1			95
[redacted]ACD001	301.0	301.1			95
MACD001	302.0	302.1			95
[redacted]ACD001	303.0	303.1			70
[redacted]ACD001	304.0	304.1			110
MACD001	305.0	305.1			100
MACD001	306.0	306.1			105
[redacted]ACD001	307.0	307.1			60
[redacted]ACD001	308.0	308.1			150
MACD001	309.0	309.1			105
[redacted]ACD001	310.0	310.1			110
[redacted]ACD001	311.0	311.1			100
MACD001	312.0	312.1			125
MACD001	313.0	313.1			85
[redacted]ACD001	314.0	314.1			130
[redacted]ACD001	315.0	315.1			110
MACD001	316.0	316.1			105
[redacted]ACD001	317.0	317.1			100
[redacted]ACD001	318.0	318.1			95
MACD001	319.0	319.1			120
[redacted]ACD001	320.0	320.1			110
[redacted]ACD001	321.0	321.1			85
[redacted]ACD001	322.0	322.1			100
MACD001	323.0	323.1			90
[redacted]ACD001	324.0	324.1			90
[redacted]ACD001	325.0	325.1			120
MACD001	326.0	326.1			175
[redacted]ACD001	327.0	327.1			150
[redacted]ACD001	328.0	328.1			130
MACD001	329.0	329.1			110
MACD001	330.0	330.1			130
[redacted]ACD001	331.0	331.1			110
[redacted]ACD001	332.0	332.1			100
MACD001	333.0	333.1			120
[redacted]ACD001	334.0	334.1			135
[redacted]ACD001	335.0	335.1			910
MACD001	336.0	336.1			1500
MACD001	337.0	337.1			250
[redacted]ACD001	338.0	338.1			295

DHID9	FROM9	TOTO9	ROCK	ALTNC	SUSCPT
MACD001	339.0	339.1			151
MACD001	340.0	340.1			95
MACD001	341.0	341.1			110
MACD001	342.0	342.1			150
MACD001	343.0	343.1			180
MACD001	344.0	344.1			270
MACD001	345.0	345.1			190
MACD001	346.0	346.1			80
MACD001	347.0	347.1			150
MACD001	348.0	348.1			105
MACD001	349.0	349.1			120
MACD001	350.0	350.1			135
MACD001	351.0	351.1			145
MACD001	352.0	352.1			120
MACD001	353.0	353.1			100
MACD001	354.0	354.1			85
MACD001	355.0	355.1			125
MACD001	356.0	356.1			120
MACD001	357.0	357.1			100
MACD001	357.9	358.0			130
MACD002	0.0	0.1			
MACD002	1.0	1.1			
MACD002	2.0	2.1			
MACD002	3.0	3.1			
MACD002	4.0	4.1			
MACD002	5.0	5.1			30
MACD002	6.0	6.1			10
MACD002	7.0	7.1			
MACD002	8.0	8.1			
MACD002	9.0	9.1			
MACD002	10.0	10.1			
MACD002	11.0	11.1			20
MACD002	12.0	12.1			10
MACD002	13.0	13.1			
MACD002	14.0	14.1			
MACD002	15.0	15.1			10
MACD002	16.0	16.1			10
MACD002	17.0	17.1			10
MACD002	18.0	18.1			20
MACD002	19.0	19.1			30
MACD002	20.0	20.1			20
MACD002	21.0	21.1			20
MACD002	22.0	22.1			10
MACD002	23.0	23.1			30
MACD002	24.0	24.1			20
MACD002	25.0	25.1			10
MACD002	26.0	26.1			20
MACD002	27.0	27.1			20
MACD002	28.0	28.1			30
MACD002	29.0	29.1			20
MACD002	30.0	30.1			20
MACD002	31.0	31.1			10

599631

860

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD002	32.0	32.1			20
MACD002	33.0	33.1			
MACD002	34.0	34.1			
MACD002	35.0	35.1			
MACD002	36.0	36.1			10
MACD002	37.0	37.1			10
MACD002	38.0	38.1			20
MACD002	39.0	39.1			20
MACD002	40.0	40.1			30
MACD002	41.0	41.1			20
MACD002	42.0	42.1			20
MACD002	43.0	43.1			30
MACD002	44.0	44.1			
MACD002	45.0	45.1			20
MACD002	46.0	46.1			20
MACD002	47.0	47.1			20
MACD002	48.0	48.1			20
MACD002	49.0	49.1			30
MACD002	50.0	50.1			20
MACD002	51.0	51.1			30
MACD002	52.0	52.1			10
MACD002	53.0	53.1			20
MACD002	54.0	54.1			20
MACD002	55.0	55.1			20
MACD002	56.0	56.1			20
MACD002	57.0	57.1			10
MACD002	58.0	58.1			10
MACD002	59.0	59.1			20
MACD002	60.0	60.1			20
MACD002	61.0	61.1			
MACD002	62.0	62.1			
MACD002	63.0	63.1			20
MACD002	64.0	64.1			10
MACD002	65.0	65.1			20
MACD002	66.0	66.1			30
MACD002	67.0	67.1			20
MACD002	68.0	68.1			20
MACD002	69.0	69.1			20
MACD002	70.0	70.1			30
MACD002	71.0	71.1			20
MACD002	72.0	72.1			20
MACD002	73.0	73.1			20
MACD002	74.0	74.1			20
MACD002	75.0	75.1			
MACD002	76.0	76.1			
MACD002	77.0	77.1			
MACD002	78.0	78.1			
MACD002	79.0	79.1			30
MACD002	80.0	80.1			20
MACD002	81.0	81.1			30
MACD002	82.0	82.1			10
MACD002	83.0	83.1			20
MACD002	84.0	84.1			20

861

599632

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD002	85.0	85.1			20
MACD002	86.0	86.1			20
MACD002	87.0	87.1			30
MACD002	88.0	88.1			20
MACD002	89.0	89.1			20
MACD002	90.0	90.1			20
MACD002	91.0	91.1			30
MACD002	92.0	92.1			10
MACD002	93.0	93.1			20
MACD002	94.0	94.1			30
MACD002	95.0	95.1			20
MACD002	96.0	96.1			30
MACD002	97.0	97.1			30
MACD002	98.0	98.1			20
MACD002	99.0	99.1			30
MACD002	100.0	100.1			30
MACD002	101.0	101.1			30
MACD002	102.0	102.1			10
MACD002	103.0	103.1			20
MACD002	104.0	104.1			20
MACD002	105.0	105.1			20
MACD002	106.0	106.1			30
MACD002	107.0	107.1			20
MACD002	108.0	108.1			20
MACD002	109.0	109.1			30
MACD002	110.0	110.1			20
MACD002	111.0	111.1			10
MACD002	112.0	112.1			40
MACD002	113.0	113.1			50
MACD002	114.0	114.1			40
MACD002	115.0	115.1			30
MACD002	116.0	116.1			30
MACD002	117.0	117.1			70
MACD002	118.0	118.1			60
MACD002	119.0	119.1			30
MACD002	120.0	120.1			40
MACD002	121.0	121.1			20
MACD002	122.0	122.1			40
MACD002	123.0	123.1			40
MACD002	124.0	124.1			30
MACD002	125.0	125.1			20
MACD002	126.0	126.1			20
MACD002	127.0	127.1			30
MACD002	128.0	128.1			20
MACD002	129.0	129.1			10
MACD002	130.0	130.1			10
MACD002	131.0	131.1			20
MACD002	132.0	132.1			30
MACD002	133.0	133.1			20
MACD002	134.0	134.1			30
MACD002	135.0	135.1			20
MACD002	136.0	136.1			20
MACD002	137.0	137.1			40

862

599633

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD002	138.0	138.1			20
MACD002	139.0	139.1			20
MACD002	140.0	140.1			20
MACD002	141.0	141.1			20
MACD002	142.0	142.1			20
MACD002	143.0	143.1			10
MACD002	144.0	144.1			20
MACD002	145.0	145.1			20
MACD002	146.0	146.1			20
MACD002	147.0	147.1			20
MACD002	148.0	148.1			20
MACD002	149.0	149.1			40
MACD002	150.0	150.1			
MACD002	151.0	151.1			10
MACD002	152.0	152.1			20
MACD002	153.0	153.1			20
MACD002	154.0	154.1			20
MACD002	155.0	155.1			30
MACD002	156.0	156.1			30
MACD002	157.0	157.1			20
MACD002	158.0	158.1			20
MACD002	159.0	159.1			30
MACD002	160.0	160.1			20
MACD002	161.0	161.1			20
MACD002	162.0	162.1			0
MACD002	163.0	163.1			10
MACD002	164.0	164.1			30
MACD002	165.0	165.1			20
MACD002	166.0	166.1			30
MACD002	167.0	167.1			20
MACD002	168.0	168.1			40
MACD002	169.0	169.1			20
MACD002	170.0	170.1			10
MACD002	171.0	171.1			30
MACD002	172.0	172.1			20
MACD002	173.0	173.1			40
MACD002	174.0	174.1			30
MACD002	175.0	175.1			20
MACD002	176.0	176.1			40
MACD002	177.0	177.1			30
MACD002	178.0	178.1			40
MACD002	179.0	179.1			40
MACD002	180.0	180.1			30
MACD002	181.0	181.1			30
MACD002	182.0	182.1			20
MACD002	183.0	183.1			20
MACD002	184.0	184.1			40
MACD002	185.0	185.1			40
MACD002	186.0	186.1			30
MACD002	187.0	187.1			40
MACD002	188.0	188.1			30
MACD002	189.0	189.1			20
MACD002	190.0	190.1			20

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD002	191.0	191.1			20
MACD002	192.0	192.1			20
MACD002	193.0	193.1			20
MACD002	194.0	194.1			20
MACD002	195.0	195.1			10
MACD002	196.0	196.1			10
MACD002	197.0	197.1			20
MACD002	198.0	198.1			20
MACD002	199.0	199.1			40
MACD002	200.0	200.1			20
MACD002	201.0	201.1			30
MACD002	202.0	202.1			40
MACD002	203.0	203.1			30
MACD002	204.0	204.1			30
MACD002	205.0	205.1			30
MACD002	206.0	206.1			30
MACD002	207.0	207.1			30
MACD002	208.0	208.1			30
MACD002	209.0	209.1			20
MACD002	210.0	210.1			20
MACD002	211.0	211.1			20
MACD002	212.0	212.1			30
MACD002	213.0	213.1			30
MACD002	214.0	214.1			30
MACD002	215.0	215.1			20
MACD002	216.0	216.1			20
MACD002	217.0	217.1			30
MACD002	218.0	218.1			20
MACD002	219.0	219.1			30
MACD002	220.0	220.1			20
MACD002	221.0	221.1			30
MACD002	222.0	222.1			20
MACD002	223.0	223.1			20
MACD002	224.0	224.1			20
MACD002	225.0	225.1			30
MACD002	226.0	226.1			10
MACD002	227.0	227.1			20
MACD002	228.0	228.1			30
MACD002	229.0	229.1			40
MACD002	230.0	230.1			30
MACD002	231.0	231.1			20
MACD002	232.0	232.1			20
MACD002	233.0	233.1			30
MACD002	234.0	234.1			10
MACD002	235.0	235.1			20
MACD002	236.0	236.1			20
MACD002	237.0	237.1			20
MACD002	238.0	238.1			30
MACD002	239.0	239.1			20
MACD002	240.0	240.1			20
MACD002	241.0	241.1			30
MACD002	242.0	242.1			20
MACD002	243.0	243.1			30

OHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD002	244.0	244.1			20
MACD002	245.0	245.1			20
MACD002	246.0	246.1			30
MACD002	247.0	247.1			30
MACD002	248.0	248.1			20
MACD002	249.0	249.1			30
MACD002	250.0	250.1			30
MACD002	251.0	251.1			30
MACD002	252.0	252.1			30
MACD002	253.0	253.1			30
MACD002	254.0	254.1			20
MACD002	255.0	255.1			30
MACD002	256.0	256.1			20
MACD002	257.0	257.1			20
MACD002	258.0	258.1			20
MACD002	259.0	259.1			20
MACD002	260.0	260.1			30
MACD002	261.0	261.1			20
MACD002	262.0	262.1			20
MACD002	263.0	263.1			20
MACD002	264.0	264.1			40
MACD002	265.0	265.1			20
MACD002	266.0	266.1			20
MACD002	267.0	267.1			20
MACD002	268.0	268.1			20
MACD002	269.0	269.1			20
MACD002	270.0	270.1			20
MACD002	271.0	271.1			20
MACD002	272.0	272.1			60
MACD002	273.0	273.1			10
MACD002	274.0	274.1			30
MACD002	275.0	275.1			30
MACD002	276.0	276.1			30
MACD002	277.0	277.1			30
MACD002	278.0	278.1			20
MACD002	279.0	279.1			20
MACD002	280.0	280.1			10
MACD002	281.0	281.1			30
MACD002	282.0	282.1			30
MACD002	283.0	283.1			30
MACD002	284.0	284.1			30
MACD002	285.0	285.1			30
MACD002	286.0	286.1			30
MACD002	287.0	287.1			40
MACD002	288.0	288.1			30
MACD002	289.0	289.1			30
MACD002	290.0	290.1			20
MACD002	291.0	291.1			40
MACD002	292.0	292.1			30
MACD002	293.0	293.1			40
MACD002	294.0	294.1			30
MACD002	295.0	295.1			30
MACD002	296.0	296.1			20

599636

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD002	297.0	297.1			30
MACD002	298.0	298.1			50
MACD002	299.0	299.1			30
MACD002	300.0	300.1			40
MACD002	301.0	301.1			30
MACD002	302.0	302.1			30
MACD002	303.0	303.1			40
MACD002	304.0	304.1			40
MACD002	305.0	305.1			30
MACD002	306.0	306.1			30
MACD002	307.0	307.1			40
MACD002	308.0	308.1			30
MACD002	309.0	309.1			30
MACD002	310.0	310.1			30
MACD002	311.0	311.1			20
MACD002	312.0	312.1			0
MACD002	313.0	313.1			20
MACD002	314.0	314.1			30
MACD002	315.0	315.1			20
MACD002	316.0	316.1			30
MACD002	317.0	317.1			10
MACD002	318.0	318.1			10
MACD002	319.0	319.1			20
MACD002	320.0	320.1			20
MACD002	321.0	321.1			20
MACD002	322.0	322.1			20
MACD002	323.0	323.1			20
MACD002	324.0	324.1			10
MACD002	325.0	325.1			20
MACD002	326.0	326.1			30
MACD002	327.0	327.1			30
MACD002	328.0	328.1			30
MACD002	329.0	329.1			30
MACD002	330.0	330.1			30
MACD002	331.0	331.1			20
MACD002	332.0	332.1			20
MACD002	333.0	333.1			20
MACD002	334.0	334.1			30
MACD002	335.0	335.1			20
MACD002	336.0	336.1			20
MACD002	337.0	337.1			20
MACD002	338.0	338.1			20
MACD002	339.0	339.1			20
MACD002	340.0	340.1			30
MACD002	341.0	341.1			30
MACD002	342.0	342.1			40
MACD002	343.0	343.1			40
MACD002	344.0	344.1			30
MACD002	345.0	345.1			30
MACD002	346.0	346.1			30
MACD002	347.0	347.1			30
MACD002	348.0	348.1			40
MACD002	349.0	349.1			30

866

599637

DHID9	FROM9	TOTO9	ROCK	ALTNG	*SUSCPT
MACD002	350.0	350.1			40
MACD002	351.0	351.1			20
MACD002	352.0	352.1			40
MACD002	353.0	353.1			40
MACD002	354.0	354.1			30
MACD002	355.0	355.1			30
MACD002	356.0	356.1			30
MACD002	357.0	357.1			40
MACD002	358.0	358.1			30
MACD002	359.0	359.1			40
MACD002	360.0	360.1			40
MACD002	361.0	361.1			10
MACD002	362.0	362.1			50
MACD002	363.0	363.1			10
MACD002	364.0	364.1			30
MACD002	365.0	365.1			30
MACD002	366.0	366.1			40
MACD002	367.0	367.1			30
MACD002	368.0	368.1			40
MACD002	369.0	369.1			40
MACD002	370.0	370.1			30
MACD002	371.0	371.1			30
MACD002	372.0	372.1			30
MACD002	373.0	373.1			10
MACD002	374.0	374.1			30
MACD002	375.0	375.1			40
MACD002	376.0	376.1			30
MACD002	377.0	377.1			40
MACD002	378.0	378.1			10
MACD002	379.0	379.1			30
MACD002	380.0	380.1			20
MACD002	381.0	381.1			20
MACD002	382.0	382.1			30
MACD002	383.0	383.1			30
MACD002	384.0	384.1			40
MACD002	385.0	385.1			10
MACD002	386.0	386.1			30
MACD002	387.0	387.1			30
MACD002	388.0	388.1			30
MACD002	389.0	389.1			30
MACD002	390.0	390.1			30
MACD002	391.0	391.1			30
MACD002	392.0	392.1			30
MACD002	393.0	393.1			30
MACD002	394.0	394.1			30
MACD002	395.0	395.1			30
MACD002	396.0	396.1			30
MACD002	397.0	397.1			30
MACD002	398.0	398.1			20
MACD002	399.0	399.1			40
MACD002	400.0	400.1			40
MACD002	401.0	401.1			20

867

599638

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD003	0.0	0.1			
MACD003	1.0	1.1			
MACD003	2.0	2.1			
MACD003	3.0	3.1			
MACD003	4.0	4.1			
MACD003	5.0	5.1			
MACD003	6.0	6.1			
MACD003	7.0	7.1			
MACD003	8.0	8.1			
MACD003	9.0	9.1			
MACD003	10.0	10.1			
MACD003	11.0	11.1			
MACD003	12.0	12.1			
MACD003	13.0	13.1			
MACD003	14.0	14.1			
MACD003	15.0	15.1			
MACD003	16.0	16.1			
MACD003	17.0	17.1			
MACD003	18.0	18.1			
MACD003	19.0	19.1			
MACD003	20.0	20.1			
MACD003	21.0	21.1			
MACD003	22.0	22.1			
MACD003	23.0	23.1			
MACD003	24.0	24.1			
MACD003	25.0	25.1			
MACD003	26.0	26.1			
MACD003	27.0	27.1			
MACD003	28.0	28.1			
MACD003	29.0	29.1			
MACD003	30.0	30.1			
MACD003	31.0	31.1			20
MACD003	32.0	32.1			20
MACD003	33.0	33.1			
MACD003	34.0	34.1			
MACD003	35.0	35.1			20
MACD003	36.0	36.1			20
MACD003	37.0	37.1			20
MACD003	38.0	38.1			30
MACD003	39.0	39.1			30
MACD003	40.0	40.1			20
MACD003	41.0	41.1			10
MACD003	42.0	42.1			20
MACD003	43.0	43.1			20
MACD003	44.0	44.1			20
MACD003	45.0	45.1			20
MACD003	46.0	46.1			20
MACD003	47.0	47.1			20
MACD003	48.0	48.1			30
MACD003	49.0	49.1			30
MACD003	50.0	50.1			20
MACD003	51.0	51.1			20
MACD003	52.0	52.1			30

866

599639

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD003	53.0	53.1			30
MACD003	54.0	54.1			20
MACD003	55.0	55.1			10
MACD003	56.0	56.1			20
MACD003	57.0	57.1			10
MACD003	58.0	58.1			20
MACD003	59.0	59.1			30
MACD003	60.0	60.1			20
MACD003	61.0	61.1			20
MACD003	62.0	62.1			20
MACD003	63.0	63.1			20
MACD003	64.0	64.1			20
MACD003	65.0	65.1			10
MACD003	66.0	66.1			30
MACD003	67.0	67.1			20
MACD003	68.0	68.1			20
MACD003	69.0	69.1			30
MACD003	70.0	70.1			30
MACD003	71.0	71.1			30
MACD003	72.0	72.1			20
MACD003	73.0	73.1			20
MACD003	74.0	74.1			20
MACD003	75.0	75.1			20
MACD003	76.0	76.1			20
MACD003	77.0	77.1			30
MACD003	78.0	78.1			20
MACD003	79.0	79.1			20
MACD003	80.0	80.1			20
MACD003	81.0	81.1			20
MACD003	82.0	82.1			20
MACD003	83.0	83.1			10
MACD003	84.0	84.1			20
MACD003	85.0	85.1			10
MACD003	86.0	86.1			20
MACD003	87.0	87.1			20
MACD003	88.0	88.1			10
MACD003	89.0	89.1			20
MACD003	90.0	90.1			30
MACD003	91.0	91.1			30
MACD003	92.0	92.1			50
MACD003	93.0	93.1			20
MACD003	94.0	94.1			20
MACD003	95.0	95.1			40
MACD003	96.0	96.1			30
MACD003	97.0	97.1			60
MACD003	98.0	98.1			30
MACD003	99.0	99.1			20
MACD003	100.0	100.1			30
MACD003	101.0	101.1			30
MACD003	102.0	102.1			30
MACD003	103.0	103.1			30
MACD003	104.0	104.1			30
MACD003	105.0	105.1			40

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD003	106.0	106.1			
MACD003	107.0	107.1			30
MACD003	108.0	108.1			10
MACD003	109.0	109.1			10
MACD003	110.0	110.1			30
MACD003	111.0	111.1			30
MACD003	112.0	112.1			40
MACD003	113.0	113.1			20
MACD003	114.0	114.1			40
MACD003	115.0	115.1			20
MACD003	116.0	116.1			20
MACD003	117.0	117.1			20
MACD003	118.0	118.1			40
MACD003	119.0	119.1			20
MACD003	120.0	120.1			20
MACD003	121.0	121.1			20
MACD003	122.0	122.1			20
MACD003	123.0	123.1			30
MACD003	124.0	124.1			30
MACD003	125.0	125.1			20
MACD003	126.0	126.1			20
MACD003	127.0	127.1			30
MACD003	128.0	128.1			30
MACD003	129.0	129.1			30
MACD003	130.0	130.1			30
MACD003	131.0	131.1			20
MACD003	132.0	132.1			30
MACD003	133.0	133.1			10
MACD003	134.0	134.1			20
MACD003	135.0	135.1			20
MACD003	136.0	136.1			30
MACD003	137.0	137.1			30
MACD003	138.0	138.1			30
MACD003	139.0	139.1			30
MACD003	140.0	140.1			30
MACD003	141.0	141.1			40
MACD003	142.0	142.1			30
MACD003	143.0	143.1			30
MACD003	144.0	144.1			30
MACD003	145.0	145.1			30
MACD003	146.0	146.1			30
MACD003	147.0	147.1			30
MACD003	148.0	148.1			20
MACD003	149.0	149.1			20
MACD003	150.0	150.1			30
MACD003	151.0	151.1			30
MACD003	152.0	152.1			20
MACD003	153.0	153.1			30
MACD003	154.0	154.1			20
MACD003	155.0	155.1			30
MACD003	156.0	156.1			20
MACD003	157.0	157.1			40
MACD003	158.0	158.1			30

599641

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD007	186.0	186.1			10
MACD007	187.0	187.1			0
MACD007	188.0	188.1			10
MACD007	189.0	189.1			15
MACD007	190.0	190.1			10
MACD007	191.0	191.1			20
MACD007	192.0	192.1			5
MACD007	193.0	193.1			10
MACD007	194.0	194.1			10
MACD007	195.0	195.1			15
MACD007	196.0	196.1			10
MACD007	197.0	197.1			0
MACD007	198.0	198.1			10
MACD007	199.0	199.1			20
MACD007	200.0	200.1			15
MACD007	201.0	201.1			25
MACD007	202.0	202.1			10
MACD007	203.0	203.1			10
MACD007	204.0	204.1			10
MACD007	205.0	205.1			15
MACD007	206.0	206.1			10
MACD007	207.0	207.1			10
MACD007	208.0	208.1			20
MACD007	209.0	209.1			20
MACD007	210.0	210.1			20
MACD007	211.0	211.1			25
MACD007	212.0	212.1			25
MACD007	213.0	213.1			30
MACD007	214.0	214.1			20
MACD007	215.0	215.1			40
MACD007	216.0	216.1			30
MACD007	217.0	217.1			35
MACD007	218.0	218.1			30
MACD007	219.0	219.1			40
MACD007	220.0	220.1			40
MACD007	221.0	221.1			45
MACD007	222.0	222.1			10
MACD007	223.0	223.1			20
MACD007	224.0	224.1			
MACD007	225.0	225.1			25
MACD007	226.0	226.1			25
MACD007	227.0	227.1			40
MACD007	228.0	228.1			35
MACD007	229.0	229.1			35
MACD007	230.0	230.1			50
MACD007	231.0	231.1			20
MACD007	232.0	232.1			25
MACD007	233.0	233.1			40
MACD007	234.0	234.1			30
MACD007	235.0	235.1			40
MACD007	236.0	236.1			40
MACD007	237.0	237.1			30
MACD007	238.0	238.1			40

599642

871

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD007	239.0	239.1			30
MACD007	240.0	240.1			40
MACD007	241.0	241.1			35
MACD007	242.0	242.1			35
MACD007	243.0	243.1			30
MACD007	244.0	244.1			35
MACD007	245.0	245.1			40
MACD007	246.0	246.1			30
MACD007	247.0	247.1			35
MACD007	248.0	248.1			25
MACD007	249.0	249.1			30
MACD007	250.0	250.1			25
MACD007	251.0	251.1			40
MACD007	252.0	252.1			35
MACD007	253.0	253.1			35
MACD007	254.0	254.1			40
MACD007	255.0	255.1			30
MACD007	256.0	256.1			30
MACD007	257.0	257.1			10
MACD007	258.0	258.1			
MACD007	259.0	259.1			30
MACD007	260.0	260.1			30
MACD007	261.0	261.1			40
MACD007	262.0	262.1			40
MACD007	263.0	263.1			40
MACD007	264.0	264.1			30
MACD007	265.0	265.1			40
MACD007	266.0	266.1			
MACD007	267.0	267.1			
MACD007	268.0	268.1			
MACD007	269.0	269.1			
MACD007	270.0	270.1			
MACD007	271.0	271.1			
MACD007	272.0	272.1			30
MACD007	273.0	273.1			
MACD007	274.0	274.1			
MACD007	275.0	275.1			
MACD007	276.0	276.1			
MACD007	277.0	277.1			
MACD007	278.0	278.1			
MACD007	279.0	279.1			
MACD007	280.0	280.1			
MACD007	281.0	281.1			
MACD007	282.0	282.1			
MACD007	283.0	283.1			
MACD007	284.0	284.1			30
MACD007	285.0	285.1			25
MACD007	286.0	286.1			20
MACD007	287.0	287.1			30
MACD007	288.0	288.1			30
MACD007	289.0	289.1			40
MACD007	290.0	290.1			30
MACD007	291.0	291.1			

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD007	292.0	292.1			
MACD007	293.0	293.1			35
MACD007	294.0	294.1			40
MACD007	295.0	295.1			20
MACD007	296.0	296.1			20
MACD007	297.0	297.1			35
MACD007	298.0	298.1			30
MACD007	299.0	299.1			30
MACD007	300.0	300.1			25
MACD007	301.0	301.1			20
MACD007	302.0	302.1			10
MACD007	303.0	303.1			10
MACD007	304.0	304.1			10
MACD007	305.0	305.1			25
MACD007	306.0	306.1			15
MACD007	307.0	307.1			20
MACD007	308.0	308.1			15
MACD007	309.0	309.1			15
MACD007	310.0	310.1			30
MACD007	311.0	311.1			10
MACD007	312.0	312.1			20
MACD007	313.0	313.1			10
MACD007	314.0	314.1			5
MACD007	315.0	315.1			15
MACD007	316.0	316.1			30
MACD007	317.0	317.1			
MACD007	318.0	318.1			
MACD007	319.0	319.1			
MACD007	320.0	320.1			25
MACD007	321.0	321.1			35
MACD007	322.0	322.1			35
MACD007	323.0	323.1			30
MACD007	324.0	324.1			30
MACD007	325.0	325.1			
MACD007	326.0	326.1			25
MACD007	327.0	327.1			30
MACD007	328.0	328.1			5
MACD007	329.0	329.1			20
MACD007	330.0	330.1			20
MACD007	331.0	331.1			30
MACD007	332.0	332.1			15
MACD007	333.0	333.1			20
MACD007	334.0	334.1			20
MACD007	335.0	335.1			30
MACD007	336.0	336.1			30
MACD007	337.0	337.1			30
MACD007	338.0	338.1			25
MACD007	339.0	339.1			20
MACD007	340.0	340.1			30
MACD007	341.0	341.1			30
MACD007	342.0	342.1			20
MACD007	343.0	343.1			10
MACD007	344.0	344.1			20

599644

873

HID9	FROM9	TOT09	ROCK ALTNG	SUSCPT
MACD007	345.0	345.1		10
MACD007	346.0	346.1		25
MACD007	347.0	347.1		35
MACD007	348.0	348.1		30
MACD007	349.0	349.1		35
MACD007	350.0	350.1		
MACD007	351.0	351.1		25
MACD007	352.0	352.1		30
MACD007	353.0	353.1		30
MACD007	354.0	354.1		40
MACD007	355.0	355.1		500
MACD007	356.0	356.1		40
MACD007	357.0	357.1		60
MACD007	358.0	358.1		40
MACD007	359.0	359.1		25
MACD007	360.0	360.1		30
MACD007	361.0	361.1		20
MACD007	361.9	362.0		35
MACD008	0.0	0.1		
MACD008	1.0	1.1		
MACD008	2.0	2.1		
MACD008	3.0	3.1		
MACD008	4.0	4.1		
MACD008	5.0	5.1		
MACD008	6.0	6.1		
MACD008	7.0	7.1		
MACD008	8.0	8.1		
MACD008	9.0	9.1		
MACD008	10.0	10.1		45
MACD008	11.0	11.1		
MACD008	12.0	12.1		50
MACD008	13.0	13.1		
MACD008	14.0	14.1		
MACD008	15.0	15.1		
MACD008	16.0	16.1		
MACD008	17.0	17.1		
MACD008	18.0	18.1		35
MACD008	19.0	19.1		60
MACD008	20.0	20.1		
MACD008	21.0	21.1		
MACD008	22.0	22.1		
MACD008	23.0	23.1		
MACD008	24.0	24.1		
MACD008	25.0	25.1		
MACD008	26.0	26.1		40
MACD008	27.0	27.1		40
MACD008	28.0	28.1		40
MACD008	29.0	29.1		35
MACD008	30.0	30.1		30
MACD008	31.0	31.1		35
MACD008	32.0	32.1		40
MACD008	33.0	33.1		45

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD008	34.0	34.1			50
MACD008	35.0	35.1			30
MACD008	36.0	36.1			40
MACD008	37.0	37.1			40
MACD008	38.0	38.1			30
MACD008	39.0	39.1			30
MACD008	40.0	40.1			100
MACD008	41.0	41.1			70
MACD008	42.0	42.1			75
MACD008	43.0	43.1			50
MACD008	44.0	44.1			30
MACD008	45.0	45.1			40
MACD008	46.0	46.1			30
MACD008	47.0	47.1			20
MACD008	48.0	48.1			40
MACD008	49.0	49.1			30
MACD008	50.0	50.1			25
MACD008	51.0	51.1			20
MACD008	52.0	52.1			30
MACD008	53.0	53.1			30
MACD008	54.0	54.1			20
MACD008	55.0	55.1			15
MACD008	56.0	56.1			
MACD008	57.0	57.1			25
MACD008	58.0	58.1			30
MACD008	59.0	59.1			30
MACD008	60.0	60.1			10
MACD008	61.0	61.1			30
MACD008	62.0	62.1			20
MACD008	63.0	63.1			20
MACD008	64.0	64.1			25
MACD008	65.0	65.1			30
MACD008	66.0	66.1			30
MACD008	67.0	67.1			20
MACD008	68.0	68.1			20
MACD008	69.0	69.1			30
MACD008	70.0	70.1			20
MACD008	71.0	71.1			30
MACD008	72.0	72.1			25
MACD008	73.0	73.1			20
MACD008	74.0	74.1			30
MACD008	75.0	75.1			20
MACD008	76.0	76.1			30
MACD008	77.0	77.1			15
MACD008	78.0	78.1			20
MACD008	79.0	79.1			15
MACD008	80.0	80.1			10
MACD008	81.0	81.1			10
MACD008	82.0	82.1			20
MACD008	83.0	83.1			10
MACD008	84.0	84.1			25
MACD008	85.0	85.1			30
MACD008	86.0	86.1			35

599646

875

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD008	87.0	87.1			30
MACD008	88.0	88.1			30
MACD008	89.0	89.1			30
MACD008	90.0	90.1			30
MACD008	91.0	91.1			15
MACD008	92.0	92.1			10
MACD008	93.0	93.1			20
MACD008	94.0	94.1			50
MACD008	95.0	95.1			30
MACD008	96.0	96.1			30
MACD008	97.0	97.1			30
MACD008	98.0	98.1			30
MACD008	99.0	99.1			25
MACD008	100.0	100.1			20
MACD008	101.0	101.1			25
MACD008	102.0	102.1			30
MACD008	103.0	103.1			20
MACD008	104.0	104.1			30
MACD008	105.0	105.1			15
MACD008	106.0	106.1			30
MACD008	107.0	107.1			20
MACD008	108.0	108.1			20
MACD008	109.0	109.1			30
MACD008	110.0	110.1			
MACD008	111.0	111.1			20
MACD008	112.0	112.1			25
MACD008	113.0	113.1			30
MACD008	114.0	114.1			30
MACD008	115.0	115.1			
MACD008	116.0	116.1			20
MACD008	117.0	117.1			35
MACD008	118.0	118.1			25
MACD008	119.0	119.1			20
MACD008	120.0	120.1			25
MACD008	121.0	121.1			20
MACD008	122.0	122.1			20
MACD008	123.0	123.1			25
MACD008	124.0	124.1			20
MACD008	125.0	125.1			30
MACD008	126.0	126.1			25
MACD008	127.0	127.1			25
MACD008	128.0	128.1			40
MACD008	129.0	129.1			30
MACD008	130.0	130.1			40
MACD008	131.0	131.1			50
MACD008	132.0	132.1			30
MACD008	133.0	133.1			60
MACD008	134.0	134.1			50
MACD008	135.0	135.1			20
MACD008	136.0	136.1			30
MACD008	137.0	137.1			40
MACD008	138.0	138.1			30
MACD008	139.0	139.1			30

876

599647

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD008	140.0	140.1			30
MACD008	141.0	141.1			30
MACD008	142.0	142.1			40
MACD008	143.0	143.1			40
MACD008	144.0	144.1			30
MACD008	145.0	145.1			60
MACD008	146.0	146.1			30
MACD008	147.0	147.1			35
MACD008	148.0	148.1			40
MACD008	149.0	149.1			45
MACD008	150.0	150.1			50
MACD008	151.0	151.1			40
MACD008	152.0	152.1			30
MACD008	153.0	153.1			30
MACD008	154.0	154.1			45
MACD008	155.0	155.1			50
MACD008	156.0	156.1			50
MACD008	157.0	157.1			40
MACD008	158.0	158.1			30
MACD008	159.0	159.1			70
MACD008	160.0	160.1			30
MACD008	161.0	161.1			25
MACD008	162.0	162.1			20
MACD008	163.0	163.1			30
MACD008	164.0	164.1			30
MACD008	165.0	165.1			40
MACD008	166.0	166.1			25
MACD008	167.0	167.1			40
MACD008	168.0	168.1			30
MACD008	169.0	169.1			30
MACD008	170.0	170.1			45
MACD008	171.0	171.1			30
MACD008	172.0	172.1			35
MACD008	173.0	173.1			30
MACD008	174.0	174.1			30
MACD008	175.0	175.1			15
MACD008	176.0	176.1			30
MACD008	177.0	177.1			30
MACD008	178.0	178.1			20
MACD008	179.0	179.1			20
MACD008	180.0	180.1			20
MACD008	181.0	181.1			5
MACD008	182.0	182.1			10
MACD008	183.0	183.1			30
MACD008	184.0	184.1			15
ACD008	185.0	185.1			20
MACD008	186.0	186.1			20
MACD008	187.0	187.1			5
MACD008	188.0	188.1			10
MACD008	189.0	189.1			15
MACD008	190.0	190.1			20
MACD008	191.0	191.1			10
MACD008	192.0	192.1			0

877

599648

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD008	193.0	193.1			20
MACD008	194.0	194.1			15
MACD008	195.0	195.1			20
MACD008	196.0	196.1			10
MACD008	197.0	197.1			10
MACD008	198.0	198.1			20
MACD008	199.0	199.1			25
MACD008	200.0	200.1			20
MACD008	201.0	201.1			15
MACD008	202.0	202.1			15
MACD008	203.0	203.1			10
MACD008	204.0	204.1			15
MACD008	205.0	205.1			20
MACD008	206.0	206.1			10
MACD008	207.0	207.1			20
MACD008	208.0	208.1			20
MACD008	209.0	209.1			10
MACD008	210.0	210.1			10
MACD008	211.0	211.1			20
MACD008	212.0	212.1			25
MACD008	213.0	213.1			50
MACD008	214.0	214.1			20
MACD008	215.0	215.1			20
MACD008	216.0	216.1			25
MACD008	217.0	217.1			20
MACD008	218.0	218.1			20
MACD008	219.0	219.1			30
MACD008	220.0	220.1			25
MACD008	221.0	221.1			25
MACD008	222.0	222.1			30
MACD008	223.0	223.1			25
MACD008	224.0	224.1			20
MACD008	225.0	225.1			30
MACD008	226.0	226.1			10
MACD008	227.0	227.1			15
MACD008	228.0	228.1			30
MACD008	229.0	229.1			25
MACD008	230.0	230.1			30
MACD008	231.0	231.1			25
MACD008	232.0	232.1			30
MACD008	233.0	233.1			20
MACD008	234.0	234.1			35
MACD008	235.0	235.1			25
MACD008	236.0	236.1			30
MACD008	237.0	237.1			40
MACD008	238.0	238.1			20
MACD008	239.0	239.1			35
MACD008	240.0	240.1			25
MACD008	241.0	241.1			15
MACD008	242.0	242.1			40
MACD008	243.0	243.1			30
MACD008	244.0	244.1			30
MACD008	245.0	245.1			30

87a

599649

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD008	246.0	246.1			30
MACD008	247.0	247.1			30
MACD008	248.0	248.1			40
MACD008	249.0	249.1			35
MACD008	250.0	250.1			30
MACD008	251.0	251.1			30
MACD008	252.0	252.1			25
MACD008	253.0	253.1			25
MACD008	254.0	254.1			20
MACD008	255.0	255.1			20
MACD008	256.0	256.1			30
MACD008	257.0	257.1			30
MACD008	258.0	258.1			15
MACD008	259.0	259.1			20
MACD008	260.0	260.1			20
MACD008	261.0	261.1			25
MACD008	262.0	262.1			15
MACD008	263.0	263.1			30
MACD008	264.0	264.1			20
MACD008	265.0	265.1			25
MACD008	266.0	266.1			15
MACD008	267.0	267.1			25
MACD008	268.0	268.1			20
MACD008	269.0	269.1			30
MACD008	270.0	270.1			10
MACD008	271.0	271.1			30
MACD008	272.0	272.1			30
MACD008	273.0	273.1			20
MACD008	274.0	274.1			30
MACD008	275.0	275.1			20
MACD008	276.0	276.1			30
MACD008	277.0	277.1			25
MACD008	278.0	278.1			30
MACD008	279.0	279.1			20
MACD008	280.0	280.1			30
MACD008	281.0	281.1			25
MACD008	282.0	282.1			20
MACD008	283.0	283.1			25
MACD008	284.0	284.1			20
MACD008	285.0	285.1			20
MACD008	286.0	286.1			25
MACD008	287.0	287.1			25
MACD008	288.0	288.1			30
MACD008	289.0	289.1			25
MACD008	290.0	290.1			35
MACD008	291.0	291.1			35
MACD008	292.0	292.1			30
MACD008	293.0	293.1			25
MACD008	294.0	294.1			30
MACD008	295.0	295.1			30
MACD008	296.0	296.1			20
MACD008	297.0	297.1			30
MACD008	298.0	298.1			50

599650

879

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD008	299.0	299.1			40
MACD008	300.0	300.1			30
MACD008	301.0	301.1			30
MACD008	302.0	302.1			35
MACD008	303.0	303.1			25
MACD008	304.0	304.1			20
MACD008	305.0	305.1			30
MACD008	306.0	306.1			25
MACD008	307.0	307.1			20
MACD008	308.0	308.1			30
MACD008	309.0	309.1			15
MACD008	310.0	310.1			30
MACD008	311.0	311.1			30
MACD008	312.0	312.1			15
MACD008	313.0	313.1			20
MACD008	314.0	314.1			20
MACD008	315.0	315.1			40
MACD008	316.0	316.1			30
MACD008	317.0	317.1			40
MACD008	318.0	318.1			25
MACD008	319.0	319.1			30
MACD008	320.0	320.1			30
MACD008	321.0	321.1			25
MACD008	322.0	322.1			30
MACD008	323.0	323.1			30
MACD008	324.0	324.1			25
MACD008	325.0	325.1			25
MACD008	326.0	326.1			25
MACD008	327.0	327.1			25
MACD008	328.0	328.1			40
MACD008	329.0	329.1			30
MACD008	330.0	330.1			30
MACD008	331.0	331.1			30
MACD008	332.0	332.1			25
MACD008	333.0	333.1			30
MACD008	334.0	334.1			25
MACD008	335.0	335.1			25
MACD008	336.0	336.1			40
MACD008	337.0	337.1			20
MACD008	338.0	338.1			10
MACD008	339.0	339.1			10
MACD008	340.0	340.1			15
MACD008	341.0	341.1			15
MACD008	342.0	342.1			25
MACD008	343.0	343.1			20
MACD008	344.0	344.1			25
MACD008	345.0	345.1			20
MACD008	346.0	346.1			30
MACD008	347.0	347.1			20
MACD008	348.0	348.1			20
MACD008	349.0	349.1			20
MACD008	350.0	350.1			20
MACD008	351.0	351.1			20

880

599651

DHID9	FROM9	TOTG9	ROCK	ALTNG	SUSCPT
MACD008	352.0	352.1			20
MACD008	353.0	353.1			20
MACD008	354.0	354.1			20
MACD008	355.0	355.1			20
MACD008	356.0	356.1			20
MACD008	357.0	357.1			25
MACD008	358.0	358.1			20
MACD008	359.0	359.1			15
MACD008	360.0	360.1			20
MACD008	361.0	361.1			30
MACD008	362.0	362.1			25
MACD008	363.0	363.1			20
MACD008	364.0	364.1			20
MACD008	365.0	365.1			10
MACD008	366.0	366.1			10
MACD008	367.0	367.1			25
MACD008	368.0	368.1			20
MACD008	369.0	369.1			10
MACD008	370.0	370.1			10
MACD008	371.0	371.1			15
MACD008	372.0	372.1			25
MACD008	373.0	373.1			5
MACD008	374.0	374.1			10
MACD008	375.0	375.1			0
MACD008	376.0	376.1			20
MACD008	377.0	377.1			40
MACD008	378.0	378.1			15
MACD008	379.0	379.1			20
MACD008	380.0	380.1			20
MACD008	381.0	381.1			30
MACD008	382.0	382.1			30
MACD008	383.0	383.1			20
MACD008	384.0	384.1			20
MACD008	385.0	385.1			35
MACD008	386.0	386.1			25
MACD008	387.0	387.1			20
MACD008	388.0	388.1			20
MACD008	389.0	389.1			20
MACD008	390.0	390.1			30
MACD008	391.0	391.1			35
MACD008	392.0	392.1			15
MACD008	393.0	393.1			30
MACD008	394.0	394.1			10
MACD008	395.0	395.1			10
MACD008	396.0	396.1			15
MACD008	397.0	397.1			30
MACD008	398.0	398.1			15
MACD008	399.	399.1			25
MACD008	400.0	400.1			25
MACD008	401.0	401.1			30
MACD008	402.0	402.1			35
MACD008	403.0	403.1			30
MACD008	404.0	404.1			40

599652

[redacted]HID9	FROM9	TOT09	ROCK ALTNG	SUSCPT
[redacted]MACD008	405.0	405.1		40
[redacted]MACD008	406.0	406.1		40
[redacted]ACD008	407.0	407.1		25
[redacted]MACD008	408.0	408.1		25
[redacted]MACD008	409.0	409.1		0
[redacted]ACD008	410.0	410.1		20
[redacted]ACD008	411.0	411.1		30
[redacted]MACD008	412.0	412.1		25
[redacted]ACD008	413.0	413.1		30
[redacted]ACD008	414.0	414.1		20
[redacted]MACD008	415.0	415.1		30
[redacted]MACD008	416.0	416.1		30
[redacted]ACD008	417.0	417.1		25
[redacted]ACD008	418.0	418.1		45
[redacted]MACD008	419.0	419.1		30
[redacted]ACD008	420.0	420.1		35
[redacted]ACD008	421.0	421.1		30
[redacted]MACD008	422.0	422.1		35
[redacted]MACD008	423.0	423.1		30
[redacted]				
[redacted]MACD009	0.0	0.1		
[redacted]MACD009	1.0	1.1		
[redacted]MACD009	2.0	2.1		
[redacted]MACD009	3.0	3.1		
[redacted]MACD009	4.0	4.1		
[redacted]MACD009	5.0	5.1		
[redacted]MACD009	6.0	6.1		
[redacted]MACD009	7.0	7.1		
[redacted]MACD009	8.0	8.1		
[redacted]MACD009	9.0	9.1		20
[redacted]MACD009	10.0	10.1		
[redacted]MACD009	11.0	11.1		
[redacted]MACD009	12.0	12.1		
[redacted]MACD009	13.0	13.1		
[redacted]MACD009	14.0	14.1		
[redacted]MACD009	15.0	15.1		
[redacted]MACD009	16.0	16.1		
[redacted]MACD009	17.0	17.1		30
[redacted]MACD009	18.0	18.1		
[redacted]MACD009	19.0	19.1		
[redacted]MACD009	20.0	20.1		
[redacted]ACD009	21.0	21.1		
[redacted]MACD009	22.0	22.1		30
[redacted]ACD009	23.0	23.1		
[redacted]ACD009	24.0	24.1		10
[redacted]ACD009	25.0	25.1		30
[redacted]ACD009	26.0	26.1		30
[redacted]ACD009	27.0	27.1		30
[redacted]ACD009	28.0	28.1		30
[redacted]ACD009	29.0	29.1		
[redacted]ACD009	30.0	30.1		
[redacted]ACD009	31.0	31.1		
[redacted]ACD009	32.0	32.1		

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	33.0	33.1			
MACD009	34.0	34.1			
MACD009	35.0	35.1			
MACD009	36.0	36.1			
MACD009	37.0	37.1			
MACD009	38.0	38.1			10
MACD009	39.0	39.1			
MACD009	40.0	40.1			
MACD009	41.0	41.1			
MACD009	42.0	42.1			
MACD009	43.0	43.1			
MACD009	44.0	44.1			35
MACD009	45.0	45.1			30
MACD009	46.0	46.1			40
MACD009	47.0	47.1			40
MACD009	48.0	48.1			30
MACD009	49.0	49.1			30
MACD009	50.0	50.1			35
MACD009	51.0	51.1			30
MACD009	52.0	52.1			15
MACD009	53.0	53.1			30
MACD009	54.0	54.1			35
MACD009	55.0	55.1			20
MACD009	56.0	56.1			35
MACD009	57.0	57.1			25
MACD009	58.0	58.1			20
MACD009	59.0	59.1			25
MACD009	60.0	60.1			20
MACD009	61.0	61.1			30
MACD009	62.0	62.1			20
MACD009	63.0	63.1			35
MACD009	64.0	64.1			20
MACD009	65.0	65.1			30
MACD009	66.0	66.1			40
MACD009	67.0	67.1			20
MACD009	68.0	68.1			30
MACD009	69.0	69.1			30
MACD009	70.0	70.1			30
MACD009	71.0	71.1			20
MACD009	72.0	72.1			50
MACD009	73.0	73.1			25
MACD009	74.0	74.1			30
MACD009	75.0	75.1			25
MACD009	76.0	76.1			35
MACD009	77.0	77.1			30
MACD009	78.0	78.1			25
MACD009	79.0	79.1			25
MACD009	80.0	80.1			15
MACD009	81.0	81.1			35
MACD009	82.0	82.1			20
MACD009	83.0	83.1			30
MACD009	84.0	84.1			30
MACD009	85.0	85.1			20

599654

883

OHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
MACD009	86.0	86.1			25
MACD009	87.0	87.1			30
MACD009	88.0	88.1			30
MACD009	89.0	89.1			20
MACD009	90.0	90.1			30
MACD009	91.0	91.1			30
MACD009	92.0	92.1			25
MACD009	93.0	93.1			30
MACD009	94.0	94.1			20
MACD009	95.0	95.1			25
MACD009	96.0	96.1			25
MACD009	97.0	97.1			25
MACD009	98.0	98.1			20
MACD009	99.0	99.1			30
MACD009	100.0	100.1			30
MACD009	101.0	101.1			30
MACD009	102.0	102.1			30
MACD009	103.0	103.1			30
MACD009	104.0	104.1			30
MACD009	105.0	105.1			30
MACD009	106.0	106.1			35
MACD009	107.0	107.1			40
MACD009	108.0	108.1			40
MACD009	109.0	109.1			30
MACD009	110.0	110.1			30
MACD009	111.0	111.1			40
MACD009	112.0	112.1			35
MACD009	113.0	113.1			45
MACD009	114.0	114.1			40
MACD009	115.0	115.1			20
MACD009	116.0	116.1			20
MACD009	117.0	117.1			30
MACD009	118.0	118.1			40
MACD009	119.0	119.1			30
MACD009	120.0	120.1			35
MACD009	121.0	121.1			50
MACD009	122.0	122.1			40
MACD009	123.0	123.1			70
MACD009	124.0	124.1			30
MACD009	125.0	125.1			40
MACD009	126.0	126.1			10
MACD009	127.0	127.1			30
MACD009	128.0	128.1			40
MACD009	129.0	129.1			15
MACD009	130.0	130.1			45
MACD009	131.0	131.1			30
MACD009	132.0	132.1			20
MACD009	133.0	133.1			70
MACD009	134.0	134.1			90
MACD009	135.0	135.1			20
MACD009	136.0	136.1			40
MACD009	137.0	137.1			45
MACD009	138.0	138.1			40

884

599655

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	139.0	139.1			20
MACD009	140.0	140.1			15
MACD009	141.0	141.1			45
MACD009	142.0	142.1			25
MACD009	143.0	143.1			30
MACD009	144.0	144.1			130
MACD009	145.0	145.1			25
MACD009	146.0	146.1			20
MACD009	147.0	147.1			30
MACD009	148.0	148.1			30
MACD009	149.0	149.1			35
MACD009	150.0	150.1			25
MACD009	151.0	151.1			30
MACD009	152.0	152.1			20
MACD009	153.0	153.1			40
MACD009	154.0	154.1			10
MACD009	155.0	155.1			20
MACD009	156.0	156.1			25
MACD009	157.0	157.1			40
MACD009	158.0	158.1			25
MACD009	159.0	159.1			20
MACD009	160.0	160.1			20
MACD009	161.0	161.1			30
MACD009	162.0	162.1			25
MACD009	163.0	163.1			35
MACD009	164.0	164.1			40
MACD009	165.0	165.1			25
MACD009	166.0	166.1			45
MACD009	167.0	167.1			35
MACD009	168.0	168.1			20
MACD009	169.0	169.1			30
MACD009	170.0	170.1			20
MACD009	171.0	171.1			30
MACD009	172.0	172.1			25
MACD009	173.0	173.1			20
MACD009	174.0	174.1			40
MACD009	175.0	175.1			40
MACD009	176.0	176.1			30
MACD009	177.0	177.1			35
MACD009	178.0	178.1			40
MACD009	179.0	179.1			30
MACD009	180.0	180.1			30
MACD009	181.0	181.1			25
MACD009	182.0	182.1			20
MACD009	183.0	183.1			25
MACD009	184.0	184.1			80
MACD009	185.0	185.1			40
MACD009	186.0	186.1			35
MACD009	187.0	187.1			75
MACD009	188.0	188.1			20
MACD009	189.0	189.1			30
MACD009	190.0	190.1			40
MACD009	191.0	191.1			40

885

599656

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	192.0	192.1			45
MACD009	193.0	193.1			40
MACD009	194.0	194.1			45
MACD009	195.0	195.1			55
MACD009	196.0	196.1			60
MACD009	197.0	197.1			40
MACD009	198.0	198.1			20
MACD009	199.0	199.1			20
MACD009	200.0	200.1			30
MACD009	201.0	201.1			40
MACD009	202.0	202.1			30
MACD009	203.0	203.1			50
MACD009	204.0	204.1			30
MACD009	205.0	205.1			30
MACD009	206.0	206.1			30
MACD009	207.0	207.1			40
MACD009	208.0	208.1			25
MACD009	209.0	209.1			40
MACD009	210.0	210.1			30
MACD009	211.0	211.1			40
MACD009	212.0	212.1			30
MACD009	213.0	213.1			50
MACD009	214.0	214.1			30
MACD009	215.0	215.1			30
MACD009	216.0	216.1			30
MACD009	217.0	217.1			25
MACD009	218.0	218.1			30
MACD009	219.0	219.1			40
MACD009	220.0	220.1			35
MACD009	221.0	221.1			30
MACD009	222.0	222.1			40
MACD009	223.0	223.1			30
MACD009	224.0	224.1			45
MACD009	225.0	225.1			40
MACD009	226.0	226.1			40
MACD009	227.0	227.1			30
MACD009	228.0	228.1			40
MACD009	229.0	229.1			30
MACD009	230.0	230.1			35
MACD009	231.0	231.1			250
MACD009	232.0	232.1			170
MACD009	233.0	233.1			100
MACD009	234.0	234.1			170
MACD009	235.0	235.1			480
MACD009	236.0	236.1			420
MACD009	237.0	237.1			235
MACD009	238.0	238.1			30
MACD009	239.0	239.1			50
MACD009	240.0	240.1			30
MACD009	241.0	241.1			10
MACD009	242.0	242.1			10
MACD009	243.0	243.1			25
MACD009	244.0	244.1			130

[redacted]HID9	FROM9	TOT09	ROCK ALTNG	SUSCPT
MACD009	245.0	245.1		200
MACD009	246.0	246.1		70
[redacted]ACD009	247.0	247.1		30
[redacted]ACD009	248.0	248.1		35
MACD009	249.0	249.1		15
[redacted]ACD009	250.0	250.1		30
[redacted]ACD009	251.0	251.1		30
MACD009	252.0	252.1		25
MACD009	253.0	253.1		20
[redacted]ACD009	254.0	254.1		40
[redacted]ACD009	255.0	255.1		40
MACD009	256.0	256.1		30
[redacted]ACD009	257.0	257.1		35
[redacted]ACD009	258.0	258.1		40
MACD009	259.0	259.1		30
MACD009	260.0	260.1		35
[redacted]ACD009	261.0	261.1		30
[redacted]ACD009	262.0	262.1		30
MACD009	263.0	263.1		30
[redacted]ACD009	264.0	264.1		660
[redacted]ACD009	265.0	265.1		500
MACD009	266.0	266.1		45
MACD009	267.0	267.1		30
[redacted]ACD009	268.0	268.1		10
[redacted]ACD009	269.0	269.1		40
MACD009	270.0	270.1		20
[redacted]ACD009	271.0	271.1		40
[redacted]ACD009	272.0	272.1		30
MACD009	273.0	273.1		20
MACD009	274.0	274.1		20
[redacted]ACD009	275.0	275.1		25
[redacted]ACD009	276.0	276.1		30
MACD009	277.0	277.1		40
[redacted]ACD009	278.0	278.1		40
[redacted]ACD009	279.0	279.1		20
MACD009	280.0	280.1		35
MACD009	281.0	281.1		20
[redacted]ACD009	282.0	282.1		30
MACD009	283.0	283.1		20
MACD009	284.0	284.1		25
[redacted]ACD009	285.0	285.1		30
[redacted]ACD009	286.0	286.1		30
MACD009	287.0	287.1		20
[redacted]ACD009	288.0	288.1		10
[redacted]ACD009	289.0	289.1		50
MACD009	290.0	290.1		50
MACD009	291.0	291.1		40
[redacted]ACD009	291.0	291.1		40
[redacted]ACD009	292.0	292.1		20
MACD009	293.0	293.1		50
[redacted]ACD009	294.0	294.1		30
[redacted]ACD009	295.0	295.1		20
MACD009	296.0	296.1		40

599658

887

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	298.0	298.1			20
MACD009	299.0	299.1			30
MACD009	300.0	300.1			30
MACD009	301.0	301.1			30
MACD009	302.0	302.1			30
MACD009	303.0	303.1			30
MACD009	304.0	304.1			30
MACD009	305.0	305.1			25
MACD009	306.0	306.1			50
MACD009	307.0	307.1			30
MACD009	308.0	308.1			30
MACD009	309.0	309.1			30
MACD009	310.0	310.1			30
MACD009	311.0	311.1			40
MACD009	312.0	312.1			30
MACD009	313.0	313.1			30
MACD009	314.0	314.1			30
MACD009	315.0	315.1			35
MACD009	316.0	316.1			30
MACD009	317.0	317.1			35
MACD009	318.0	318.1			30
MACD009	319.0	319.1			35
MACD009	320.0	320.1			25
MACD009	321.0	321.1			25
MACD009	322.0	322.1			40
MACD009	323.0	323.1			30
MACD009	324.0	324.1			35
MACD009	325.0	325.1			50
MACD009	326.0	326.1			30
MACD009	327.0	327.1			50
MACD009	328.0	328.1			30
MACD009	329.0	329.1			25
MACD009	330.0	330.1			40
MACD009	331.0	331.1			20
MACD009	332.0	332.1			20
MACD009	333.0	333.1			30
MACD009	334.0	334.1			30
MACD009	335.0	335.1			25
MACD009	336.0	336.1			30
MACD009	337.0	337.1			30
MACD009	338.0	338.1			30
MACD009	339.0	339.1			20
MACD009	340.0	340.1			30
MACD009	341.0	341.1			40
MACD009	342.0	342.1			30
MACD009	343.0	343.1			30
MACD009	344.0	344.1			40
MACD009	345.0	345.1			50
MACD009	346.0	346.1			40
MACD009	347.0	347.1			40
MACD009	348.0	348.1			35
MACD009	349.0	349.1			30
MACD009	350.0	350.1			40

599659

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	351.0	351.1			30
MACD009	352.0	352.1			40
MACD009	353.0	353.1			20
MACD009	354.0	354.1			30
MACD009	355.0	355.1			40
MACD009	356.0	356.1			40
MACD009	357.0	357.1			40
MACD009	358.0	358.1			40
MACD009	359.0	359.1			60
MACD009	360.0	360.1			15
MACD009	361.0	361.1			40
MACD009	362.0	362.1			35
MACD009	363.0	363.1			30
MACD009	364.0	364.1			40
MACD009	365.0	365.1			30
MACD009	366.0	366.1			30
MACD009	367.0	367.1			30
MACD009	368.0	368.1			50
MACD009	369.0	369.1			50
MACD009	370.0	370.1			40
MACD009	371.0	371.1			40
MACD009	372.0	372.1			25
MACD009	373.0	373.1			30
MACD009	374.0	374.1			30
MACD009	375.0	375.1			40
MACD009	376.0	376.1			30
MACD009	377.0	377.1			60
MACD009	378.0	378.1			30
MACD009	379.0	379.1			40
MACD009	380.0	380.1			40
MACD009	381.0	381.1			30
MACD009	382.0	382.1			30
MACD009	383.0	383.1			30
MACD009	384.0	384.1			30
MACD009	385.0	385.1			30
MACD009	386.0	386.1			30
MACD009	387.0	387.1			30
MACD009	388.0	388.1			25
MACD009	389.0	389.1			30
MACD009	390.0	390.1			30
MACD009	391.0	391.1			30
MACD009	392.0	392.1			30
MACD009	393.0	393.1			40
MACD009	394.0	394.1			40
MACD009	395.0	395.1			50
MACD009	396.0	396.1			30
MACD009	397.0	397.1			60
MACD009	398.0	398.1			40
MACD009	399.0	399.1			40
MACD009	400.0	400.1			40
MACD009	401.0	401.1			20
MACD009	402.0	402.1			35
MACD009	403.0	403.1			30

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
MACD009	404.0	404.1			40
MACD009	405.0	405.1			35
MACD009	406.0	406.1			30
MACD009	407.0	407.1			30
MACD009	408.0	408.1			30
MACD009	409.0	409.1			30
MACD009	410.0	410.1			40
XMCD008	0.0	0.1			
XMCD008	1.0	1.1			
XMCD008	2.0	2.1			
XMCD008	3.0	3.1			
XMCD008	4.0	4.1			20
XMCD008	5.0	5.1			20
XMCD008	6.0	6.1			20
XMCD008	7.0	7.1			20
XMCD008	8.0	8.1			10
XMCD008	9.0	9.1			10
XMCD008	10.0	10.1			20
XMCD008	11.0	11.1			15
XMCD008	12.0	12.1			15
XMCD008	13.0	13.1			20
XMCD008	14.0	14.1			15
XMCD008	15.0	15.1			10
XMCD008	16.0	16.1			
XMCD008	17.0	17.1			10
XMCD008	18.0	18.1			15
XMCD008	19.0	19.1			10
XMCD008	20.0	20.1			10
XMCD008	21.0	21.1			10
XMCD008	22.0	22.1			10
XMCD008	23.0	23.1			15
XMCD008	24.0	24.1			15
XMCD008	25.0	25.1			10
XMCD008	26.0	26.1			20
XMCD008	27.0	27.1			10
XMCD008	28.0	28.1			10
XMCD008	29.0	29.1			10
XMCD008	30.0	30.1			15
XMCD008	31.0	31.1			20
XMCD008	32.0	32.1			10
XMCD008	33.0	33.1			40
XMCD008	34.0	34.1			15
XMCD008	35.0	35.1			20
XMCD008	36.0	36.1			15
XMCD008	37.0	37.1			25
XMCD008	38.0	38.1			5
XMCD008	39.0	39.1			15
XMCD008	40.0	40.1			20
XMCD008	41.0	41.1			10
XMCD008	42.0	42.1			15
XMCD008	43.0	43.1			10
XMCD008	44.0	44.1			

890

599661

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD008	45.0	45.1			15
XMCD008	46.0	46.1			10
XMCD008	47.0	47.1			20
XMCD008	48.0	48.1			15
XMCD008	49.0	49.1			20
XMCD008	50.0	50.1			20
XMCD008	51.0	51.1			20
XMCD008	52.0	52.1			30
XMCD008	53.0	53.1			20
XMCD008	54.0	54.1			20
XMCD008	55.0	55.1			20
XMCD008	56.0	56.1			15
XMCD008	57.0	57.1			20
XMCD008	58.0	58.1			20
XMCD008	59.0	59.1			20
XMCD008	60.0	60.1			10
XMCD008	61.0	61.1			50
XMCD008	62.0	62.1			30
XMCD008	63.0	63.1			10
XMCD008	64.0	64.1			20
XMCD008	65.0	65.1			20
XMCD008	66.0	66.1			20
XMCD008	67.0	67.1			15
XMCD008	68.0	68.1			30
XMCD008	69.0	69.1			15
XMCD008	70.0	70.1			10
XMCD008	71.0	71.1			20
XMCD008	72.0	72.1			10
XMCD008	73.0	73.1			15
XMCD008	74.0	74.1			25
XMCD008	75.0	75.1			20
XMCD008	76.0	76.1			15
XMCD008	77.0	77.1			15
XMCD008	78.0	78.1			10
XMCD008	79.0	79.1			15
XMCD008	80.0	80.1			10
XMCD008	81.0	81.1			5
XMCD008	82.0	92.1			10
XMCD008	83.0	83.1			10
XMCD008	84.0	84.1			20
XMCD008	85.0	85.1			5
XMCD008	86.0	86.1			10
XMCD008	87.0	87.1			10
XMCD008	88.0	88.1			5
XMCD008	89.0	89.1			5
XMCD008	90.0	90.1			10
XMCD008	91.0	91.1			10
XMCD008	92.0	92.1			5
XMCD008	93.0	93.1			5
XMCD008	94.0	94.1			10
XMCD008	95.0	95.1			15
XMCD008	96.0	96.1			10
XMCD008	97.0	97.1			5

599662

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD008	98.0	98.1			5
XMCD008	99.0	99.1			10
XMCD008	100.0	100.1			5
XMCD008	101.0	101.1			20
XMCD008	102.0	102.1			10
XMCD008	103.0	103.1			10
XMCD008	104.0	104.1			5
XMCD008	105.0	105.1			10
XMCD008	106.0	106.1			10
XMCD008	107.0	107.1			5
XMCD008	108.0	108.1			10
XMCD008	109.0	109.1			10
XMCD008	110.0	110.1			10
XMCD008	111.0	111.1			15
XMCD008	112.0	112.1			5
XMCD008	113.0	113.1			10
XMCD008	114.0	114.1			5
XMCD008	115.0	115.1			15
XMCD008	116.0	116.1			20
XMCD008	117.0	117.1			10
XMCD008	118.0	118.1			10
XMCD008	119.0	119.1			15
XMCD008	120.0	120.1			10
XMCD008	121.0	121.1			10
XMCD008	122.0	122.1			10
XMCD008	123.0	123.1			10
XMCD008	124.0	124.1			15
XMCD008	125.0	125.1			15
XMCD008	126.0	126.1			10
XMCD008	127.0	127.1			10
XMCD008	128.0	128.1			10
XMCD008	129.0	129.1			10
XMCD008	130.0	130.1			10
XMCD008	131.0	131.1			10
XMCD008	132.0	132.1			5
XMCD008	133.0	133.1			0
XMCD008	134.0	134.1			10
XMCD008	135.0	135.1			0
XMCD008	136.0	136.1			15
XMCD008	137.0	137.1			5
XMCD008	138.0	138.1			5
XMCD008	139.0	139.1			5
XMCD008	140.0	140.1			5
XMCD008	141.0	141.1			10
XMCD008	142.0	142.1			10
XMCD008	143.0	143.1			10
XMCD008	144.0	144.1			5
XMCD008	145.0	145.1			5
XMCD008	146.0	146.1			10
XMCD008	147.0	147.1			10
XMCD008	148.0	148.1			5
XMCD008	149.0	149.1			10
XMCD008	150.0	150.1			5

892

599663

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD008	151.0	151.1			5
XMCD008	152.0	152.1			5
XMCD008	153.0	153.1			0
XMCD008	154.0	154.1			5
XMCD008	155.0	155.1			0
XMCD008	156.0	156.1			5
XMCD008	157.0	157.1			0
XMCD008	158.0	158.1			0
XMCD008	159.0	159.1			0
XMCD008	160.0	160.1			0
XMCD008	161.0	161.1			10
XMCD008	162.0	162.1			10
XMCD008	163.0	163.1			5
XMCD008	164.0	164.1			10
XMCD008	165.0	165.1			10
XMCD008	166.0	166.1			5
XMCD008	167.0	167.1			10
XMCD008	168.0	168.1			5
XMCD008	169.0	169.1			10
XMCD008	170.0	170.1			10
XMCD008	171.0	171.1			10
XMCD008	172.0	172.1			10
XMCD008	173.0	173.1			10
XMCD008	174.0	174.1			15
XMCD008	175.0	175.1			15
XMCD008	176.0	176.1			5
XMCD008	177.0	177.1			5
XMCD008	178.0	178.1			5
XMCD008	179.0	179.1			10
XMCD008	180.0	180.1			5
XMCD008	181.0	181.1			0
XMCD008	182.0	182.1			10
XMCD008	183.0	183.1			10
XMCD008	184.0	184.1			0
XMCD008	185.0	185.1			10
XMCD008	186.0	186.1			5
XMCD008	187.0	187.1			10
XMCD008	188.0	188.1			5
XMCD008	189.0	189.1			5
XMCD008	190.0	190.1			5
XMCD008	191.0	191.1			10
XMCD008	192.0	192.1			0
XMCD008	193.0	193.1			10
XMCD008	194.0	194.1			5
XMCD008	195.0	195.1			5
XMCD008	196.0	196.1			5
XMCD008	197.0	197.1			5
XMCD008	198.0	198.1			0
XMCD008	199.0	199.1			10
XMCD008	200.0	200.1			5
XMCD008	201.0	201.1			0
XMCD008	202.0	202.1			0
XMCD008	203.0	203.1			5

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD008	204.0	204.1			5
XMCD008	205.0	205.1			0
XMCD008	206.0	206.1			0
XMCD008	207.0	207.1			0
XMCD008	208.0	208.1			5
XMCD008	209.0	209.1			0
XMCD008	210.0	210.1			10
XMCD008	211.0	211.1			5
XMCD008	212.0	212.1			10
XMCD008	213.0	213.1			5
XMCD008	214.0	214.1			10
XMCD008	215.0	215.1			5
XMCD008	216.0	216.1			5
XMCD008	217.0	217.1			5
XMCD008	218.0	218.1			10
XMCD008	219.0	219.1			5
XMCD008	220.0	220.1			10
XMCD008	221.0	221.1			0
XMCD008	222.0	222.1			10
XMCD008	223.0	223.1			10
XMCD008	224.0	224.1			10
XMCD008	225.0	225.1			10
XMCD008	226.0	226.1			5
XMCD008	227.0	227.1			5
XMCD008	228.0	228.1			5
XMCD008	229.0	229.1			5
XMCD008	230.0	230.1			10
XMCD008	231.0	231.1			5
XMCD008	232.0	232.1			5
XMCD008	233.0	233.1			5
XMCD008	234.0	234.1			10
XMCD008	235.0	235.1			10
XMCD009	0.0	0.1			25
XMCD009	1.0	1.1			
XMCD009	2.0	2.1			
XMCD009	3.0	3.1			20
XMCD009	4.0	4.1			
XMCD009	5.0	5.1			30
XMCD009	6.0	6.1			20
XMCD009	7.0	7.1			
XMCD009	8.0	8.1			
XMCD009	9.0	9.1			
XMCD009	10.0	10.1			30
XMCD009	11.0	11.1			10
XMCD009	12.0	12.1			25
XMCD009	13.0	13.1			25
XMCD009	14.0	14.1			40
XMCD009	15.0	15.1			
XMCD009	16.0	16.1			25
XMCD009	17.0	17.1			
XMCD009	18.0	18.1			
XMCD009	19.0	19.1			

599665

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD009	20.0	20.1			
XMCD009	21.0	21.1			20
XMCD009	22.0	22.1			40
XMCD009	23.0	23.1			30
XMCD009	24.0	24.1			15
XMCD009	25.0	25.1			20
XMCD009	26.0	26.1			
XMCD009	27.0	27.1			30
XMCD009	28.0	28.1			
XMCD009	29.0	29.1			30
XMCD009	30.0	30.1			20
XMCD009	31.0	31.1			40
XMCD009	32.0	32.1			35
XMCD009	33.0	33.1			40
XMCD009	34.0	34.1			40
XMCD009	35.0	35.1			
XMCD009	36.0	36.1			40
XMCD009	37.0	37.1			30
XMCD009	38.0	38.1			20
XMCD009	39.0	39.1			50
XMCD009	40.0	40.1			20
XMCD009	41.0	41.1			
XMCD009	42.0	42.1			30
XMCD009	43.0	43.1			30
XMCD009	44.0	44.1			30
XMCD009	45.0	45.1			20
XMCD009	46.0	46.1			30
XMCD009	47.0	47.1			40
XMCD009	48.0	48.1			10
XMCD009	49.0	49.1			20
XMCD009	50.0	50.1			25
XMCD009	51.0	51.1			30
XMCD009	52.0	52.1			
XMCD009	53.0	53.1			20
XMCD009	54.0	54.1			20
XMCD009	55.0	55.1			30
XMCD009	56.0	56.1			35
XMCD009	57.0	57.1			30
XMCD009	58.0	58.1			30
XMCD009	59.0	59.1			35
XMCD009	60.0	60.1			30
XMCD009	61.0	61.1			30
XMCD009	62.0	62.1			40
XMCD009	63.0	63.1			40
XMCD009	64.0	64.1			40
XMCD009	65.0	65.1			40
XMCD009	66.0	66.1			40
XMCD009	67.0	67.1			30
XMCD009	68.0	68.1			20
XMCD009	69.0	69.1			40
XMCD009	70.0	70.1			50
XMCD009	71.0	71.1			40
XMCD009	72.0	72.1			

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD009	73.0	73.1			30
XMCD009	74.0	74.1			
XMCD009	75.0	75.1			30
XMCD009	76.0	76.1			30
XMCD009	77.0	77.1			40
XMCD009	78.0	78.1			
XMCD009	79.0	79.1			35
XMCD009	80.0	80.1			40
XMCD009	81.0	81.1			45
XMCD009	82.0	82.1			40
XMCD009	83.0	83.1			40
XMCD009	84.0	84.1			40
XMCD009	85.0	85.1			50
XMCD009	86.0	86.1			60
XMCD009	87.0	87.1			40
XMCD009	88.0	88.1			40
XMCD009	89.0	89.1			40
XMCD009	90.0	90.1			50
XMCD009	91.0	91.1			
XMCD009	92.0	92.1			
XMCD009	93.0	93.1			40
XMCD009	94.0	94.1			80
XMCD009	95.0	95.1			35
XMCD009	96.0	96.1			40
XMCD009	97.0	97.1			40
XMCD009	98.0	98.1			40
XMCD009	99.0	99.1			35
XMCD009	100.0	100.1			45
XMCD009	101.0	101.1			40
XMCD009	102.0	102.1			70
XMCD009	103.0	103.1			40
XMCD009	104.0	104.1			40
XMCD009	105.0	105.1			50
XMCD009	106.0	106.1			30
XMCD009	107.0	107.1			35
XMCD009	108.0	108.1			40
XMCD009	109.0	109.1			30
XMCD009	110.0	110.1			30
XMCD009	111.0	111.1			30
XMCD009	112.0	112.1			30
XMCD009	113.0	113.1			
XMCD009	114.0	114.1			
XMCD009	115.0	115.1			35
XMCD009	116.0	116.1			35
XMCD009	117.0	117.1			30
XMCD009	118.0	118.1			
XMCD009	119.0	119.1			
XMCD009	120.0	120.1			40
XMCD009	121.0	121.1			40
XMCD009	122.0	122.1			50
XMCD009	123.0	123.1			20
XMCD009	124.0	124.1			35
XMCD009	125.0	125.1			40

DHID9	FROM9	TO09	ROCK	ALTNG	SUSCPT
XMCD009	126.0	126.1			40
XMCD009	127.0	127.1			30
XMCD009	128.0	128.1			10
XMCD009	129.0	129.1			30
XMCD009	130.0	130.1			30
XMCD009	131.0	131.1			
XMCD009	132.0	132.1			35
XMCD009	133.0	133.1			30
XMCD009	134.0	134.1			25
XMCD009	135.0	135.1			35
XMCD009	136.0	136.1			30
XMCD009	137.0	137.1			25
XMCD009	138.0	138.1			40
XMCD009	139.0	139.1			20
XMCD009	140.0	140.1			30
XMCD009	141.0	141.1			40
XMCD009	142.0	142.1			30
XMCD009	143.0	143.1			20
XMCD009	144.0	144.1			30
XMCD009	145.0	145.1			35
XMCD009	146.0	146.1			50
XMCD009	147.0	147.1			10
XMCD009	148.0	148.1			30
XMCD009	149.0	149.1			30
XMCD009	150.0	150.1			40
XMCD009	151.0	151.1			35
XMCD009	152.0	152.1			20
XMCD009	153.0	153.1			40
XMCD009	154.0	154.1			30
XMCD009	155.0	155.1			40
XMCD009	156.0	156.1			35
XMCD009	157.0	157.1			35
XMCD009	158.0	158.1			35
XMCD009	159.0	159.1			35
XMCD009	160.0	160.1			10
XMCD009	161.0	161.1			20
XMCD009	162.0	162.1			10
XMCD009	163.0	163.1			20
XMCD009	164.0	164.1			10
XMCD009	165.0	165.1			10
XMCD009	166.0	166.1			20
XMCD009	167.0	167.1			20
XMCD009	168.0	168.1			10
XMCD009	169.0	169.1			10
XMCD009	170.0	170.1			40
XMCD009	171.0	171.1			10
XMCD009	172.0	172.1			10
XMCD009	173.0	173.1			10
XMCD009	174.0	174.1			10
XMCD009	175.0	175.1			20
XMCD009	176.0	176.1			20
XMCD009	177.0	177.1			20
XMCD009	178.0	178.1			15

897

599668

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD009	179.0	179.1			20
XMCD009	180.0	180.1			20
XMCD009	181.0	181.1			20
XMCD009	182.0	182.1			10
XMCD009	183.0	183.1			20
XMCD009	184.0	184.1			25
XMCD009	185.0	185.1			20
XMCD009	186.0	186.1			25
XMCD009	187.0	187.1			40
XMCD009	188.0	188.1			25
XMCD009	189.0	189.1			25
XMCD009	190.0	190.1			30
XMCD009	191.0	191.1			20
XMCD009	192.0	192.1			20
XMCD009	193.0	193.1			20
XMCD009	194.0	194.1			20
XMCD009	195.0	195.1			10
XMCD009	196.0	196.1			
XMCD009	197.0	197.1			10
XMCD009	198.0	198.1			10
XMCD009	199.0	199.1			25
XMCD009	200.0	200.1			20
XMCD009	201.0	201.1			20
XMCD009	202.0	202.1			20
XMCD009	203.0	203.1			10
XMCD009	204.0	204.1			20
XMCD009	205.0	205.1			20
XMCD009	206.0	206.1			20
XMCD009	207.0	207.1			10
XMCD009	208.0	208.1			10
XMCD009	209.0	209.1			10
XMCD009	210.0	210.1			10
XMCD009	211.0	211.1			20
XMCD009	212.0	212.1			10
XMCD009	213.0	213.1			10
XMCD009	214.0	214.1			20
XMCD009	215.0	215.1			5
XMCD009	216.0	216.1			10
XMCD009	217.0	217.1			20
XMCD009	218.0	218.1			20
XMCD009	219.0	219.1			20
XMCD009	220.0	220.1			20
XMCD009	221.0	221.1			10
XMCD009	222.0	222.1			20
XMCD009	223.0	223.1			30
XMCD009	224.0	224.1			20
XMCD009	225.0	225.1			30
XMCD009	226.0	226.1			25
XMCD009	227.0	227.1			15
XMCD009	228.0	228.1			25
XMCD009	229.0	229.1			25
XMCD009	230.0	230.1			20
XMCD009	231.0	231.1			20

898

599669

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD009	232.0	232.1			30
XMCD009	233.0	233.1			30
XMCD009	234.0	234.1			25
XMCD009	235.0	235.1			20
XMCD009	236.0	236.1			20
XMCD009	237.0	237.1			25
XMCD009	238.0	238.1			20
XMCD009	239.0	239.1			20
XMCD009	240.0	240.1			30
XMCD009	241.0	241.1			15
XMCD009	242.0	242.1			15
XMCD009	243.0	243.1			10
XMCD009	244.0	244.1			20
XMCD009	245.0	245.1			20
XMCD009	246.0	246.1			20
XMCD009	247.0	247.1			20
XMCD009	248.0	248.1			10
XMCD010	0.0	0.1			30
XMCD010	1.0	1.1			
XMCD010	2.0	2.1			
XMCD010	3.0	3.1			60
XMCD010	4.0	4.1			50
XMCD010	5.0	5.1			20
XMCD010	6.0	6.1			40
XMCD010	7.0	7.1			40
XMCD010	8.0	8.1			30
XMCD010	9.0	9.1			30
XMCD010	10.0	10.1			30
XMCD010	11.0	11.1			20
XMCD010	12.0	12.1			30
XMCD010	13.0	13.1			20
XMCD010	14.0	14.1			30
XMCD010	15.0	15.1			20
XMCD010	16.0	16.1			30
XMCD010	17.0	17.1			40
XMCD010	18.0	18.1			50
XMCD010	19.0	19.1			30
XMCD010	20.0	20.1			40
XMCD010	21.0	21.1			40
XMCD010	22.0	22.1			40
XMCD010	23.0	23.1			35
XMCD010	24.0	24.1			30
XMCD010	25.0	25.1			40
XMCD010	26.0	26.1			40
XMCD010	27.0	27.1			30
XMCD010	28.0	28.1			30
XMCD010	29.0	29.1			30
XMCD010	30.0	30.1			40
XMCD010	31.0	31.1			35
XMCD010	32.0	32.1			30
XMCD010	33.0	33.1			30
XMCD010	34.0	34.1			30

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD010	35.0	35.1			50
XMCD010	36.0	36.1			20
XMCD010	37.0	37.1			30
XMCD010	38.0	38.1			50
XMCD010	39.0	39.1			50
XMCD010	40.0	40.1			30
XMCD010	41.0	41.1			40
XMCD010	42.0	42.1			50
XMCD010	43.0	43.1			25
XMCD010	44.0	44.1			25
XMCD010	45.0	45.1			30
XMCD010	46.0	46.1			15
XMCD010	47.0	47.1			40
XMCD010	48.0	48.1			30
XMCD010	49.0	49.1			40
XMCD010	50.0	50.1			30
XMCD010	51.0	51.1			30
XMCD010	52.0	52.1			35
XMCD010	53.0	53.1			25
XMCD010	54.0	54.1			30
XMCD010	55.0	55.1			40
XMCD010	56.0	56.1			30
XMCD010	57.0	57.1			
XMCD010	58.0	58.1			30
XMCD010	59.0	59.1			20
XMCD010	60.0	60.1			30
XMCD010	61.0	61.1			30
XMCD010	62.0	62.1			25
XMCD010	63.0	63.1			30
XMCD010	64.0	64.1			20
XMCD010	65.0	65.1			40
XMCD010	66.0	66.1			40
XMCD010	67.0	67.1			20
XMCD010	68.0	68.1			15
XMCD010	69.0	69.1			20
XMCD010	70.0	70.1			20
XMCD010	71.0	71.1			20
XMCD010	72.0	72.1			
XMCD010	73.0	73.1			20
XMCD010	74.0	74.1			20
XMCD010	75.0	75.1			90
XMCD010	76.0	76.1			
XMCD010	77.0	77.1			80
XMCD010	78.0	78.1			20
XMCD010	79.0	79.1			
XMCD010	80.0	80.1			20
XMCD010	81.0	81.1			20
XMCD010	82.0	82.1			20
XMCD010	83.0	83.1			20
XMCD010	84.0	84.1			15
XMCD010	85.0	85.1			20
XMCD010	86.0	86.1			20
XMCD010	87.0	87.1			25

599671

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD010	88.0	88.1			20
XMCD010	89.0	89.1			10
XMCD010	90.0	90.1			10
XMCD010	91.0	91.1			20
XMCD010	92.0	92.1			30
XMCD010	93.0	93.1			30
XMCD010	94.0	94.1			20
XMCD010	95.0	95.1			35
XMCD010	96.0	96.1			30
XMCD010	97.0	97.1			25
XMCD010	98.0	98.1			40
XMCD010	99.0	99.1			50
XMCD010	100.0	100.1			20
XMCD010	101.0	101.1			10
XMCD010	102.0	102.1			25
XMCD010	103.0	103.1			20
XMCD010	104.0	104.1			30
XMCD010	105.0	105.1			30
XMCD010	106.0	106.1			40
XMCD010	107.0	107.1			25
XMCD010	108.0	108.1			50
XMCD010	109.0	109.1			40
XMCD010	110.0	110.1			10
XMCD010	111.0	111.1			20
XMCD010	112.0	112.1			30
XMCD010	113.0	113.1			30
XMCD010	114.0	114.1			30
XMCD010	115.0	115.1			30
XMCD010	116.0	116.1			20
XMCD010	117.0	117.1			60
XMCD010	118.0	118.1			50
XMCD010	119.0	119.1			20
XMCD010	120.0	120.1			20
XMCD010	121.0	121.1			40
XMCD010	122.0	122.1			30
XMCD010	123.0	123.1			40
XMCD010	124.0	124.1			40
XMCD010	125.0	125.1			40
XMCD010	126.0	126.1			40
XMCD010	127.0	127.1			40
XMCD010	128.0	128.1			20
XMCD010	129.0	129.1			40
XMCD010	130.0	130.1			40
XMCD010	131.0	131.1			50
XMCD010	132.0	132.1			40
XMCD010	133.0	133.1			50
XMCD010	134.0	134.1			30
XMCD010	135.0	135.1			35
XMCD010	136.0	136.1			40
XMCD010	137.0	137.1			40
XMCD010	138.0	138.1			50
XMCD010	139.0	139.1			40
XMCD010	140.0	140.1			40

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD010	141.0	141.1			50
XMCD010	142.0	142.1			40
XMCD010	143.0	143.1			45
XMCD010	144.0	144.1			40
XMCD010	145.0	145.1			20
XMCD010	146.0	146.1			40
XMCD010	147.0	147.1			30
XMCD010	148.0	148.1			40
XMCD010	149.0	149.1			30
XMCD010	150.0	150.1			35
XMCD010	151.0	151.1			40
XMCD010	152.0	152.1			20
XMCD010	153.0	153.1			30
XMCD010	154.0	154.1			35
XMCD010	155.0	155.1			50
XMCD010	156.0	156.1			20
XMCD010	157.0	157.1			30
XMCD010	158.0	158.1			45
XMCD010	159.0	159.1			20
XMCD010	160.0	160.1			15
XMCD010	161.0	161.1			20
XMCD010	162.0	162.1			5
XMCD010	163.0	163.1			30
XMCD010	164.0	164.1			30
XMCD010	165.0	165.1			20
XMCD010	166.0	166.1			20
XMCD010	167.0	167.1			30
XMCD010	168.0	168.1			20
XMCD010	169.0	169.1			40
XMCD010	170.0	170.1			20
XMCD010	171.0	171.1			30
XMCD010	172.0	172.1			30
XMCD010	173.0	173.1			35
XMCD010	174.0	174.1			30
XMCD010	175.0	175.1			30
XMCD010	176.0	176.1			35
XMCD010	177.0	177.1			30
XMCD010	178.0	178.1			15
XMCD010	179.0	179.1			40
XMCD010	180.0	180.1			30
XMCD010	181.0	181.1			20
XMCD010	182.0	182.1			40
XMCD010	183.0	183.1			30
XMCD010	184.0	184.1			30
XMCD010	185.0	185.1			30
XMCD010	186.0	186.1			20
XMCD010	187.0	187.1			25
XMCD010	188.0	188.1			20
XMCD010	189.0	189.1			40
XMCD010	190.0	190.1			30
XMCD010	191.0	191.1			30
XMCD010	192.0	192.1			20
XMCD010	193.0	193.1			30

902

599673

DHID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
XMCD010	194.0	194.1		45
XMCD010	195.0	195.1		50
XMCD010	196.0	196.1		20
XMCD010	197.0	197.1		30
XMCD010	198.0	198.1		30
XMCD010	199.0	199.1		30
XMCD010	200.0	200.1		30
XMCD010	201.0	201.1		20
XMCD010	202.0	202.1		30
XMCD010	203.0	203.1		30
XMCD010	204.0	204.1		15
XMCD010	205.0	205.1		30
XMCD010	206.0	206.1		30
XMCD010	207.0	207.1		25
XMCD010	208.0	208.1		30
XMCD010	209.0	209.1		30
XMCD010	210.0	210.1		20
XMCD010	211.0	211.1		30
XMCD010	212.0	212.1		30
XMCD010	213.0	213.1		30
XMCD010	214.0	214.1		30
XMCD010	215.0	215.1		30
XMCD010	216.0	216.1		20
XMCD010	217.0	217.1		45
XMCD010	218.0	218.1		25
XMCD010	219.0	219.1		30
XMCD010	220.0	220.1		30
XMCD010	221.0	221.1		30
XMCD010	222.0	222.1		25
XMCD010	223.0	223.1		30
XMCD010	224.0	224.1		20
XMCD010	225.0	225.1		20
XMCD010	226.0	226.1		30
XMCD010	227.0	227.1		35
XMCD010	228.0	228.1		10
XMCD010	229.0	229.1		20
XMCD010	230.0	230.1		25
XMCD010	231.0	231.1		20
XMCD010	232.0	232.1		25
XMCD010	233.0	233.1		15
XMCD010	234.0	234.1		20
XMCD010	235.0	235.1		30
XMCD010	236.0	236.1		20
XMCD010	237.0	237.1		30
XMCD010	238.0	238.1		20
XMCD010	239.0	239.1		35
XMCD010	240.0	240.1		20
XMCD010	241.0	241.1		20
XMCD010	242.0	242.1		40
XMCD010	243.0	243.1		35
XMCD010	244.0	244.1		30
XMCD010	245.0	245.1		20
XMCD010	246.0	246.1		25

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD010	247.0	247.1			15
XMCD010	248.0	248.1			25
XMCD010	249.0	249.1			30
XMCD010	250.0	250.1			30
XMCD010	251.0	251.1			15
XMCD010	252.0	252.1			10
XMCD010	253.0	253.1			20
XMCD010	254.0	254.1			20
XMCD010	255.0	255.1			30
XMCD010	256.0	256.1			30
XMCD010	257.0	257.1			25
XMCD010	258.0	258.1			25
XMCD010	259.0	259.1			20
XMCD010	260.0	260.1			20
XMCD010	261.0	261.1			20
XMCD010	262.0	262.1			20
XMCD010	263.0	263.1			20
XMCD010	264.0	264.1			40
XMCD014	0.0	0.1			
XMCD014	1.0	1.1			
XMCD014	2.0	2.1			
XMCD014	3.0	3.1			
XMCD014	4.0	4.1			
XMCD014	5.0	5.1			
XMCD014	6.0	6.1			
XMCD014	7.0	7.1			
XMCD014	8.0	8.1			
XMCD014	9.0	9.1			
XMCD014	10.0	10.1			
XMCD014	11.0	11.1			
XMCD014	12.0	12.1			
XMCD014	13.0	13.1			
XMCD014	14.0	14.1			
XMCD014	15.0	15.1			
XMCD014	16.0	16.1			
XMCD014	17.0	17.1			
XMCD014	18.0	18.1			
XMCD014	19.0	19.1			
XMCD014	20.0	20.1			
XMCD014	21.0	21.1			
XMCD014	22.0	22.1			
XMCD014	23.0	23.1			20
XMCD014	24.0	24.1			
XMCD014	25.0	25.1			
XMCD014	26.0	26.1			30
XMCD014	27.0	27.1			30
XMCD014	28.0	28.1			
XMCD014	29.0	29.1			
XMCD014	30.0	30.1			
XMCD014	31.0	31.1			30
XMCD014	32.0	32.1			20
XMCD014	33.0	33.1			25

(904

599675

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD014	34.0	34.1			30
XMCD014	35.0	35.1			30
XMCD014	36.0	36.1			35
XMCD014	37.0	37.1			30
XMCD014	38.0	38.1			
XMCD014	39.0	39.1			25
XMCD014	40.0	40.1			30
XMCD014	41.0	41.1			30
XMCD014	42.0	42.1			40
XMCD014	43.0	43.1			30
XMCD014	44.0	44.1			30
XMCD014	45.0	45.1			20
XMCD014	46.0	46.1			20
XMCD014	47.0	47.1			20
XMCD014	48.0	48.1			35
XMCD014	49.0	49.1			35
XMCD014	50.0	50.1			30
XMCD014	51.0	51.1			35
XMCD014	52.0	52.1			30
XMCD014	53.0	53.1			30
XMCD014	54.0	54.1			25
XMCD014	55.0	55.1			25
XMCD014	56.0	56.1			25
XMCD014	57.0	57.1			25
XMCD014	58.0	58.1			20
XMCD014	59.0	59.1			20
XMCD014	60.0	60.1			10
XMCD014	61.0	61.1			10
XMCD014	62.0	62.1			
XMCD014	63.0	63.1			
XMCD014	64.0	64.1			
XMCD014	65.0	65.1			
XMCD014	66.0	66.1			
XMCD014	67.0	67.1			
XMCD014	68.0	68.1			
XMCD014	69.0	69.1			
XMCD014	70.0	70.1			
XMCD014	71.0	71.1			
XMCD014	72.0	72.1			
XMCD014	73.0	73.1			
XMCD014	74.0	74.1			10
XMCD014	75.0	75.1			10
XMCD014	76.0	76.1			20
XMCD014	77.0	77.1			
XMCD014	78.0	78.1			
XMCD014	79.0	79.1			55
XMCD014	80.0	80.1			30
XMCD014	81.0	81.1			10
XMCD014	82.0	82.1			15
XMCD014	83.0	83.1			10
XMCD014	84.0	84.1			
XMCD014	85.0	85.1			
XMCD014	86.0	86.1			

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD014	87.0	87.1			
XMCD014	88.0	88.1			
XMCD014	89.0	89.1			
XMCD014	90.0	90.1			
XMCD014	91.0	91.1			
XMCD014	92.0	92.1			
XMCD014	93.0	93.1			
XMCD014	94.0	94.1			
XMCD014	95.0	95.1			
XMCD014	96.0	96.1			
XMCD014	97.0	97.1			
XMCD014	98.0	98.1			
XMCD014	99.0	99.1			
XMCD014	100.0	100.1			15
XMCD014	101.0	101.1			10
XMCD014	102.0	102.1			20
XMCD014	103.0	103.1			10
XMCD014	104.0	104.1			20
XMCD014	105.0	105.1			
XMCD014	106.0	106.1			
XMCD014	107.0	107.1			20
XMCD014	108.0	108.1			20
XMCD014	109.0	109.1			15
XMCD014	110.0	110.1			10
XMCD014	111.0	111.1			
XMCD014	112.0	112.1			
XMCD014	113.0	113.1			
XMCD014	114.0	114.1			
XMCD014	115.0	115.1			15
XMCD014	116.0	116.1			20
XMCD014	117.0	117.1			25
XMCD014	118.0	118.1			10
XMCD014	119.0	119.1			20
XMCD014	120.0	120.1			20
XMCD014	121.0	121.1			20
XMCD014	122.0	122.1			35
XMCD014	123.0	123.1			20
XMCD014	124.0	124.1			15
XMCD014	125.0	125.1			15
XMCD014	126.0	126.1			15
XMCD014	127.0	127.1			20
XMCD014	128.0	128.1			30
XMCD014	129.0	129.1			15
XMCD014	130.0	130.1			10
XMCD014	131.0	131.1			10
XMCD014	132.0	132.1			10
XMCD014	133.0	133.1			10
XMCD014	134.0	134.1			10
XMCD014	135.0	135.1			20
XMCD014	136.0	136.1			10
XMCD014	137.0	137.1			10
XMCD014	138.0	138.1			10
XMCD014	139.0	139.1			10

599677

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD014	140.0	140.1			10
XMCD014	141.0	141.1			10
XMCD014	142.0	142.1			15
XMCD014	143.0	143.1			20
XMCD014	144.0	144.1			20
XMCD014	145.0	145.1			10
XMCD014	146.0	146.1			10
XMCD014	147.0	147.1			0
XMCD014	148.0	148.1			
XMCD014	149.0	149.1			10
XMCD014	150.0	150.1			15
XMCD014	151.0	151.1			10
XMCD014	152.0	152.1			15
XMCD014	153.0	153.1			10
XMCD014	154.0	154.1			40
XMCD014	155.0	155.1			30
XMCD014	156.0	156.1			40
XMCD014	157.0	157.1			40
XMCD014	158.0	158.1			30
XMCD014	159.0	159.1			30
XMCD014	160.0	160.1			
XMCD014	161.0	161.1			30
XMCD014	162.0	162.1			20
XMCD014	163.0	163.1			30
XMCD014	164.0	164.1			20
XMCD014	165.0	165.1			10
XMCD014	166.0	166.1			30
XMCD014	167.0	167.1			30
XMCD014	168.0	168.1			30
XMCD014	169.0	169.1			30
XMCD014	170.0	170.1			40
XMCD014	171.0	171.1			35
XMCD014	172.0	172.1			10
XMCD014	173.0	173.1			30
XMCD014	174.0	174.1			30
XMCD014	175.0	175.1			20
XMCD014	176.0	176.1			30
XMCD014	177.0	177.1			40
XMCD014	178.0	178.1			30
XMCD014	179.0	179.1			30
XMCD014	180.0	180.1			20
XMCD014	181.0	181.1			30
XMCD014	182.0	182.1			40
XMCD014	183.0	183.1			30
XMCD014	184.0	184.1			40
XMCD014	185.0	185.1			30
XMCD014	186.0	186.1			40
XMCD014	187.0	187.1			40
XMCD014	188.0	188.1			25
XMCD014	189.0	189.1			40
XMCD014	190.0	190.1			30
XMCD014	191.0	191.1			30
XMCD014	192.0	192.1			20

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD014	193.0	193.1			30
XMCD014	194.0	194.1			30
XMCD014	195.0	195.1			20
XMCD014	196.0	196.1			30
XMCD014	197.0	197.1			40
XMCD014	198.0	198.1			25
XMCD014	199.0	199.1			10
XMCD014	200.0	200.1			30
XMCD014	201.0	201.1			40
XMCD014	202.0	202.1			25
XMCD014	203.0	203.1			50
XMCD014	204.0	204.1			30
XMCD014	205.0	205.1			30
XMCD014	206.0	206.1			30
XMCD014	207.0	207.1			30
XMCD014	208.0	208.1			30
XMCD014	209.0	209.1			30
XMCD014	210.0	210.1			40
XMCD014	211.0	211.1			30
XMCD014	212.0	212.1			40
XMCD014	213.0	213.1			30
XMCD014	214.0	214.1			40
XMCD014	215.0	215.1			40
XMCD014	216.0	216.1			30
XMCD014	217.0	217.1			30
XMCD014	218.0	218.1			40
XMCD014	219.0	219.1			30
XMCD014	220.0	220.1			40
XMCD014	221.0	221.1			40
XMCD014	222.0	222.1			50
XMCD014	223.0	223.1			40
XMCD014	224.0	224.1			50
XMCD014	225.0	225.1			30
XMCD014	226.0	226.1			40
XMCD014	227.0	227.1			40
XMCD014	228.0	228.1			30
XMCD014	229.0	229.1			
XMCD014	230.0	230.1			30
XMCD014	231.0	231.1			20
XMCD014	232.0	232.1			
XMCD014	233.0	233.1			30
XMCD014	234.0	234.1			30
XMCD014	235.0	235.1			30
XMCD014	236.0	236.1			40
XMCD014	237.0	237.1			30
XMCD014	238.0	238.1			20
XMCD014	239.0	239.1			20
XMCD014	240.0	240.1			20
XMCD014	241.0	241.1			10
XMCD014	242.0	242.1			20
XMCD014	243.0	243.1			30
XMCD014	244.0	244.1			40
XMCD014	245.0	245.1			30

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD014	246.0	246.1			45
XMCD014	247.0	247.1			40
XMCD014	248.0	248.1			40
XMCD014	249.0	249.1			40
XMCD014	250.0	250.1			50
XMCD014	251.0	251.1			40
XMCD014	252.0	252.1			20
XMCD014	253.0	253.1			30
XMCD014	254.0	254.1			40
XMCD014	255.0	255.1			30
XMCD014	256.0	256.1			30
XMCD014	257.0	257.1			35
XMCD014	258.0	258.1			20
XMCD014	259.0	259.1			50
XMCD014	260.0	260.1			40
XMCD014	261.0	261.1			30
XMCD014	262.0	262.1			20
XMCD014	263.0	263.1			30
XMCD014	264.0	264.1			30
XMCD014	265.0	265.1			20
XMCD014	266.0	266.1			30
XMCD014	267.0	267.1			40
XMCD014	268.0	268.1			30
XMCD014	269.0	269.1			40
XMCD014	270.0	270.1			30
XMCD014	271.0	271.1			30
XMCD014	272.0	272.1			30
XMCD014	273.0	273.1			30
XMCD014	274.0	274.1			20
XMCD014	275.0	275.1			30
XMCD014	276.0	276.1			20
XMCD014	277.0	277.1			40
XMCD014	278.0	278.1			30
XMCD014	279.0	279.1			40
XMCD014	280.0	280.1			30
XMCD014	281.0	281.1			30
XMCD014	282.0	282.1			30
XMCD014	283.0	283.1			30
XMCD014	284.0	284.1			20
XMCD014	285.0	285.1			30
XMCD014	286.0	286.1			30
XMCD014	287.0	287.1			30
XMCD014	288.0	288.1			30
XMCD014	289.0	289.1			40
XMCD014	290.0	290.1			30
XMCD014	291.0	291.1			30
XMCD014	292.0	292.1			40
XMCD014	293.0	293.1			30
XMCD014	294.0	294.1			25
XMCD014	295.0	295.1			20
XMCD014	296.0	296.1			40
XMCD014	297.0	297.1			20
XMCD014	298.0	298.1			20

599680

909

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD014	299.0	299.1			10
XMCD014	300.0	300.1			30
XMCD014	301.0	301.1			20
XMCD014	302.0	302.1			30
XMCD014	303.0	303.1			30
XMCD014	304.0	304.1			10
XMCD014	305.0	305.1			20
XMCD014	306.0	306.1			20
XMCD014	307.0	307.1			15
XMCD014	308.0	308.1			30
XMCD014	309.0	309.1			20
XMCD014	310.0	310.1			30
XMCD014	311.0	311.1			30
XMCD014	312.0	312.1			20
XMCD014	313.0	313.1			30
XMCD014	314.0	314.1			30
XMCD014	315.0	315.1			30
XMCD014	316.0	316.1			30
XMCD014	317.0	317.1			20
XMCD014	318.0	318.1			10
XMCD014	319.0	319.1			30
XMCD014	320.0	320.1			10
XMCD014	321.0	321.1			30
XMCD014	322.0	322.1			30
XMCD014	323.0	323.1			30
XMCD014	324.0	324.1			10
XMCD014	325.0	325.1			10
XMCD014	326.0	326.1			30
XMCD014	327.0	327.1			30
XMCD014	328.0	328.1			30
XMCD014	329.0	329.1			20
XMCD014	330.0	330.1			30
XMCD014	331.0	331.1			30
XMCD014	332.0	332.1			20
XMCD014	333.0	333.1			10
XMCD014	334.0	334.1			20
XMCD014	335.0	335.1			20
XMCD014	336.0	336.1			40
XMCD014	337.0	337.1			20
XMCD014	338.0	338.1			20
XMCD014	339.0	339.1			20
XMCD014	340.0	340.1			30
XMCD014	341.0	341.1			30
XMCD014	342.0	342.1			10
XMCD014	343.0	343.1			30
XMCD014	344.0	344.1			40
XMCD014	345.0	345.1			20
XMCD014	346.0	346.1			10
XMCD014	347.0	347.1			20
XMCD014	348.0	348.1			20
XMCD014	349.0	349.1			
XMCD014	350.0	350.1			
XMCD014	351.0	351.1			

599681

	DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
D						
	XMCD014	352.0	352.1			
X	XMCD014	353.0	353.1			20
X	XMCD014	354.0	354.1			20
X	XMCD014	355.0	355.1			30
X	XMCD014	356.0	356.1			40
X	XMCD014	357.0	357.1			20
X	XMCD014	358.0	358.1			20
X	XMCD014	359.0	359.1			20
X	XMCD014	360.0	360.1			20
X	XMCD014	361.0	361.1			30
X	XMCD014	362.0	362.1			20
)	XMCD014	363.0	363.1			20
)	XMCD014	364.0	364.1			20
;	XMCD014	365.0	365.1			20
;	XMCD014	366.0	366.1			30
;	XMCD014	367.0	367.1			30
;	XMCD014	368.0	368.1			20
	XMCD014	369.0	369.1			20
;	XMCD014	370.0	370.1			20
	XMCD014	371.0	371.1			40
	XMCD014	372.0	372.1			20
	XMCD014	373.0	373.1			30
	XMCD014	374.0	374.1			20
	XMCD014	375.0	375.1			40
	XMCD014	376.0	376.1			30
	XMCD014	377.0	377.1			20
	XMCD014	378.0	378.1			30
	XMCD014	379.0	379.1			40
	XMCD014	380.0	380.1			20
	XMCD014	381.0	381.1			30
	XMCD014	382.0	382.1			30
	XMCD014	383.0	383.1			30
	XMCD014	384.0	384.1			40
	XMCD014	385.0	385.1			30
	XMCD014	386.0	386.1			30
	XMCD014	387.0	387.1			20
	XMCD014	388.0	388.1			30
	XMCD014	389.0	389.1			20
	XMCD014	390.0	390.1			20
	XMCD014	391.0	391.1			30
	XMCD014	392.0	392.1			10
	XMCD014	393.0	393.1			40
	XMCD014	394.0	394.1			50
	XMCD014	395.0	395.1			40
	XMCD014	396.0	396.1			35
	XMCD014	397.0	397.1			40
	XMCD014	398.0	398.1			30
	XMCD014	399.0	399.1			30
	XMCD014	400.0	400.1			40
	XMCD014	401.0	401.1			30
	XMCD014	402.0	402.1			30
	XMCD014	403.0	403.1			20
	XMCD014	404.0	404.1			30

911

599682

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD014	405.0	405.1			40
XMCD014	406.0	406.1			40
XMCD014	407.0	407.1			40
XMCD014	408.0	408.1			20
XMCD014	409.0	409.1			40
XMCD014	410.0	410.1			30
XMCD014	411.0	411.1			30
XMCD014	412.0	412.1			30
XMCD014	413.0	413.1			30
XMCD014	414.0	414.1			30
XMCD014	415.0	415.1			10
XMCD014	416.0	416.1			30
XMCD014	417.0	417.1			40
XMCD014	418.0	418.1			40
XMCD014	419.0	419.1			40
XMCD014	420.0	420.1			40
XMCD014	421.0	421.1			40
XMCD014	422.0	422.1			40
XMCD014	423.0	423.1			30
XMCD014	424.0	424.1			30
XMCD014	425.0	425.1			20
XMCD014	426.0	426.1			10
XMCD014	427.0	427.1			30
XMCD014	428.0	428.1			20
XMCD014	429.0	429.1			20
XMCD014	430.0	430.1			40
XMCD014	431.0	431.1			30
XMCD014	432.0	432.1			30
XMCD014	433.0	433.1			40
XMCD014	434.0	434.1			30
XMCD014	435.0	435.1			30
XMCD014	436.0	436.1			30
XMCD014	437.0	437.1			40
XMCD014	438.0	438.1			30
XMCD014	439.0	439.1			40
XMCD014	440.0	440.1			30
XMCD014	441.0	441.1			30
XMCD014	442.0	442.1			40
XMCD014	443.0	443.1			30
XMCD014	444.0	444.1			50
XMCD014	445.0	445.1			40
XMCD014	446.0	446.1			30
XMCD014	447.0	447.1			40
XMCD014	448.0	448.1			30
XMCD014	449.0	449.1			40
XMCD014	450.0	450.1			30
XMCD014	451.0	451.1			40
XMCD014	452.0	452.1			30
XMCD014	453.0	453.1			30
XMCD014	454.0	454.1			30
XMCD014	455.0	455.1			30
XMCD014	456.0	456.1			20
XMCD014	457.0	457.1			20

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD014	458.0	458.1			30
XMCD014	459.0	459.1			30
XMCD014	460.0	460.1			30
XMCD014	461.0	461.1			30
XMCD014	462.0	462.1			20
XMCD014	463.0	463.1			30
XMCD014	464.0	464.1			20
XMCD014	465.0	465.1			30
XMCD014	466.0	466.1			40
XMCD014	467.0	467.1			30
XMCD014	468.0	468.1			40
XMCD014	469.0	469.1			20
XMCD014	470.0	470.1			20
XMCD014	471.0	471.1			20
XMCD014	472.0	472.1			30
XMCD014	473.0	473.1			10
XMCD014	474.0	474.1			40
XMCD014	475.0	475.1			50
XMCD014	476.0	476.1			40
XMCD014	477.0	477.1			30
XMCD014	478.0	478.1			40
XMCD014	479.0	479.1			30
XMCD014	480.0	480.1			50
XMCD014	481.0	481.1			60
XMCD014	482.0	482.1			50
XMCD014	483.0	483.1			50
XMCD014	484.0	484.1			20
XMCD014	485.0	485.1			30
XMCD014	486.0	486.1			30
XMCD014	487.0	487.1			30
XMCD014	488.0	488.1			30
XMCD014	489.0	489.1			20
XMCD014	490.0	490.1			30
XMCD014	491.0	491.1			30
XMCD014	492.0	492.1			40
XMCD014	493.0	493.1			30
XMCD014	494.0	494.1			30
XMCD014	495.0	495.1			30
XMCD014	496.0	496.1			40
XMCD014	497.0	497.1			40
XMCD014	498.0	498.1			40
XMCD014	499.0	499.1			40
XMCD014	500.0	500.1			30
XMCD014	501.0	501.1			40
XMCD014	502.0	502.1			40
XMCD014	503.0	503.1			40
XMCD014	504.0	504.1			30
XMCD014	505.0	505.1			40
XMCD014	506.0	506.1			30
XMCD014	507.0	507.1			40
XMCD014	508.0	508.1			20
XMCD014	509.0	509.1			10
XMCD014	510.0	510.1			30

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD014	511.0	511.1			20
XMCD014	512.0	512.1			10
XMCD014	513.0	513.1			20
XMCD014	514.0	514.1			30
XMCD014	515.0	515.1			20
XMCD014	516.0	516.1			20
XMCD014	517.0	517.1			20
XMCD014	518.0	518.1			30
XMCD014	519.0	519.1			20
XMCD014	520.0	520.1			40
XMCD014	521.0	521.1			20
XMCD014	522.0	522.1			20
XMCD014	523.0	523.1			20
XMCD014	524.0	524.1			20
XMCD014	525.0	525.1			20
XMCD014	526.0	526.1			
XMCD014	527.0	527.1			
XMCD014	528.0	528.1			
XMCD014	529.0	529.1			
XMCD015	407.0	407.1			40
XMCD015	408.0	408.1			30
XMCD015	409.0	409.1			20
XMCD015	410.0	410.1			20
XMCD015	411.0	411.1			30
XMCD015	412.0	412.1			10
XMCD015	413.0	413.1			
XMCD015	414.0	414.1			20
XMCD015	415.0	415.1			
XMCD015	416.0	416.1			
XMCD015	417.0	417.1			10
XMCD015	418.0	418.1			20
XMCD015	419.0	419.1			30
XMCD015	420.0	420.1			
XMCD015	421.0	421.1			
XMCD015	422.0	422.1			
XMCD015	423.0	423.1			
XMCD015	424.0	424.1			
XMCD015	425.0	425.1			30
XMCD015	426.0	426.1			20
XMCD015	427.0	427.1			20
XMCD015	428.0	428.1			25
XMCD015	429.0	429.1			20
XMCD015	430.0	430.1			20
XMCD015	431.0	431.1			20
XMCD015	432.0	432.1			20
XMCD015	433.0	433.1			20
XMCD015	434.0	434.1			20
XMCD015	435.0	435.1			20
XMCD015	436.0	436.1			20
XMCD015	437.0	437.1			20
XMCD015	438.0	438.1			20
XMCD015	439.0	439.1			20

599685

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD015	440.0	440.1			20
XMCD015	441.0	441.1			10
XMCD015	442.0	442.1			10
XMCD015	443.0	443.1			20
XMCD015	444.0	444.1			20
XMCD015	445.0	445.1			30
XMCD015	446.0	446.1			20
XMCD015	447.0	447.1			20
XMCD015	448.0	448.1			30
XMCD015	449.0	449.1			30
XMCD015	450.0	450.1			20
XMCD015	451.0	451.1			20
XMCD015	452.0	452.1			20
XMCD015	453.0	453.1			20
XMCD015	454.0	454.1			10
XMCD015	455.0	455.1			20
XMCD015	456.0	456.1			20
XMCD015	457.0	457.1			10
XMCD015	458.0	458.1			20
XMCD015	459.0	459.1			10
XMCD015	460.0	460.1			20
XMCD015	461.0	461.1			20
XMCD015	462.0	462.1			20
XMCD015	463.0	463.1			20
XMCD015	464.0	464.1			30
XMCD015	465.0	465.1			20
XMCD015	466.0	466.1			20
XMCD015	467.0	467.1			30
XMCD015	468.0	468.1			20
XMCD015	469.0	469.1			30
XMCD015	470.0	470.1			20
XMCD015	471.0	471.1			20
XMCD015	472.0	472.1			20
XMCD015	473.0	473.1			20
XMCD015	474.0	474.1			40
XMCD015	475.0	475.1			20
XMCD015	476.0	476.1			20
XMCD015	477.0	477.1			30
XMCD015	478.0	478.1			30
XMCD015	479.0	479.1			30
XMCD015	480.0	480.1			20
XMCD015	481.0	481.1			30
XMCD015	482.0	482.1			10
XMCD015	483.0	483.1			20
XMCD015	484.0	484.1			10
XMCD015	485.0	485.1			10
XMCD015	486.0	486.1			20
XMCD015	487.0	487.1			10
XMCD015	488.0	488.1			10
XMCD015	489.0	489.1			10
XMCD015	490.0	490.1			10
XMCD015	491.0	491.1			10
XMCD015	492.0	492.1			20

915

599686

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD015	493.0	493.1			10
XMCD015	494.0	494.1			10
XMCD015	495.0	495.1			10
XMCD015	496.0	496.1			10
XMCD015	497.0	497.1			20
XMCD015	498.0	498.1			30
XMCD015	499.0	499.1			40
XMCD015	500.0	500.1			10
XMCD015	501.0	501.1			20
XMCD015	502.0	502.1			20
XMCD015	503.0	503.1			20
XMCD015	504.0	504.1			20
XMCD015	505.0	505.1			10
XMCD015	506.0	506.1			10
XMCD015	507.0	507.1			20
XMCD015	508.0	508.1			20
XMCD015	509.0	509.1			10
XMCD015	510.0	510.1			10
XMCD015	511.0	511.1			10
XMCD015	512.0	512.1			20
XMCD015	513.0	513.1			10
XMCD015	514.0	514.1			20
XMCD015	515.0	515.1			20
XMCD015	516.0	516.1			20
XMCD015	517.0	517.1			10
XMCD015	518.0	518.1			20
XMCD015	519.0	519.1			20
XMCD015	520.0	520.1			20
XMCD015	521.0	521.1			20
XMCD015	522.0	522.1			30
XMCD015	523.0	523.1			20
XMCD015	524.0	524.1			20
XMCD015	525.0	525.1			20
XMCD015	526.0	526.1			20
XMCD015	527.0	527.1			10
XMCD015	528.0	528.1			30
XMCD015	529.0	529.1			30
XMCD015	530.0	530.1			40
XMCD015	531.0	531.1			30
XMCD015	532.0	532.1			40
XMCD015	533.0	533.1			30
XMCD015	534.0	534.1			20
XMCD015	535.0	535.1			20
XMCD015	536.0	536.1			30
XMCD015	537.0	537.1			30
XMCD015	538.0	538.1			40
XMCD015	539.0	539.1			30
XMCD015	540.0	540.1			30
XMCD015	541.0	541.1			30
XMCD015	542.0	542.1			20
XMCD015	543.0	543.1			20
XMCD015	544.0	544.1			30
XMCD015	545.0	545.1			30

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD015	546.0	546.1			20
XMCD015	547.0	547.1			20
XMCD015	548.0	548.1			20
XMCD015	549.0	549.1			20
XMCD015	550.0	550.1			20
XMCD015	551.0	551.1			30
XMCD015	552.0	552.1			20
XMCD015	553.0	553.1			30
XMCD015	554.0	554.1			20
XMCD015	555.0	555.1			10
XMCD015	556.0	556.1			10
XMCD015	557.0	557.1			20
XMCD015	558.0	558.1			10
XMCD015	559.0	559.1			10
XMCD015	560.0	560.1			10
XMCD015	561.0	561.1			10
XMCD015	562.0	562.1			10
XMCD015	563.0	563.1			10
XMCD015	564.0	564.1			20
XMCD015	565.0	565.1			10
XMCD015	566.0	566.1			10
XMCD015	567.0	567.1			10
XMCD015	568.0	568.1			10
XMCD015	569.0	569.1			10
XMCD015	570.0	570.1			
XMCD015	571.0	571.1			20
XMCD015	572.0	572.1			20
XMCD015	573.0	573.1			20
XMCD015	574.0	574.1			10
XMCD015	575.0	575.1			10
XMCD015	576.0	576.1			20
XMCD015	577.0	577.1			20
XMCD015	578.0	578.1			20
XMCD015	579.0	579.1			10
XMCD015	580.0	580.1			10
XMCD015	581.0	581.1			10
XMCD015	582.0	582.1			10
XMCD015	583.0	583.1			10
XMCD015	584.0	584.1			10
XMCD015	585.0	585.1			10
XMCD015	586.0	586.1			20
XMCD015	587.0	587.1			10
XMCD015	588.0	588.1			10
XMCD015	589.0	589.1			10
XMCD015	590.0	590.1			10
XMCD015	591.0	591.1			20
XMCD015	592.0	592.1			20
XMCD015	593.0	593.1			20
XMCD015	594.0	594.1			10
XMCD015	595.0	595.1			20
XMCD015	596.0	596.1			10
XMCD015	597.0	597.1			10
XMCD015	598.0	598.1			20

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XMCD015	599.0	599.1			20
XMCD015	600.0	600.1			20
XMCD015	601.0	601.1			10
XMCD015	602.0	602.1			10
XMCD015	603.0	603.1			20
XMCD015	604.0	604.1			20
XMCD015	605.0	605.1			10
XMCD015	606.0	606.1			20
XMCD017	186.0	186.1			30
XMCD017	189.0	189.1			20
XMCD017	190.0	190.1			20
XMCD017	191.0	191.1			20
XMCD017	192.0	192.1			20
XMCD017	193.0	193.1			20
XMCD017	194.0	194.1			20
XMCD017	195.0	195.1			20
XMCD017	196.0	196.1			10
XMCD017	197.0	197.1			20
XMCD017	198.0	198.1			20
XMCD017	199.0	199.1			20
XMCD017	200.0	200.1			10
XMCD017	201.0	201.1			10
XMCD017	202.0	202.1			20
XMCD017	203.0	203.1			10
XMCD017	204.0	204.1			20
XMCD017	205.0	205.1			10
XMCD017	206.0	206.1			10
XMCD017	207.0	207.1			10
XMCD017	208.0	208.1			10
XMCD017	209.0	209.1			10
XMCD017	210.0	210.1			20
XMCD017	211.0	211.1			20
XMCD017	212.0	212.1			20
XMCD017	213.0	213.1			20
XMCD017	214.0	214.1			20
XMCD017	215.0	215.1			10
XMCD017	216.0	216.1			20
XMCD017	217.0	217.1			20
XMCD017	218.0	218.1			10
XMCD017	219.0	219.1			10
XMCD017	220.0	220.1			10
XMCD017	221.0	221.1			10
XMCD017	222.0	222.1			10
XMCD017	223.0	223.1			10
XMCD017	224.0	224.1			10
XMCD017	225.0	225.1			10
XMCD017	226.0	226.1			10
XMCD017	227.0	227.1			10
XMCD017	228.0	228.1			10
XMCD017	229.0	229.1			10
XMCD017	230.0	230.1			10
XMCD017	231.0	231.1			20

599689

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD017	232.0	232.1			10
XMCD017	233.0	233.1			10
XMCD017	234.0	234.1			10
XMCD017	235.0	235.1			10
XMCD017	236.0	236.1			10
XMCD017	237.0	237.1			10
XMCD017	238.0	238.1			10
XMCD017	239.0	239.1			10
XMCD017	240.0	240.1			10
XMCD017	241.0	241.1			10
XMCD017	242.0	242.1			10
XMCD017	243.0	243.1			20
XMCD017	244.0	244.1			10
XMCD017	245.0	245.1			10
XMCD017	246.0	246.1			10
XMCD017	247.0	247.1			10
XMCD017	248.0	248.1			10
XMCD017	249.0	249.1			10
XMCD017	250.0	250.1			10
XMCD017	251.0	251.1			10
XMCD017	252.0	252.1			10
XMCD017	253.0	253.1			10
XMCD017	254.0	254.1			20
XMCD017	255.0	255.1			10
XMCD017	256.0	256.1			10
XMCD017	257.0	257.1			20
XMCD017	258.0	258.1			20
XMCD017	259.0	259.1			20
XMCD017	260.0	260.1			20
XMCD017	261.0	261.1			20
XMCD017	262.0	262.1			20
XMCD017	263.0	263.1			20
XMCD017	264.0	264.1			20
XMCD017	265.0	265.1			20
XMCD017	266.0	266.1			10
XMCD017	267.0	267.1			10
XMCD017	268.0	268.1			10
XMCD017	269.0	269.1			20
XMCD017	270.0	270.1			10
XMCD017	271.0	271.1			20
XMCD017	272.0	272.1			20
XMCD017	273.0	273.1			10
XMCD017	274.0	274.1			10
XMCD017	275.0	275.1			20
XMCD017	276.0	276.1			10
XMCD017	277.0	277.1			10
XMCD017	278.0	279.1			30
XMCD017	279.0	279.1			10
XMCD017	280.0	280.1			10
XMCD017	281.0	281.1			30
XMCD017	282.0	282.1			20
XMCD017	283.0	283.1			30
XMCD017	284.0	284.1			20

599690

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD017	285.0	285.1			30
XMCD017	286.0	286.1			20
XMCD017	287.0	287.1			20
XMCD017	288.0	288.1			20
XMCD017	289.0	289.1			20
XMCD017	290.0	290.1			20
XMCD017	291.0	291.1			40
XMCD017	292.0	292.1			10
XMCD017	293.0	293.1			20
XMCD017	294.0	294.1			20
XMCD017	295.0	295.1			20
XMCD017	296.0	296.1			20
XMCD017	297.0	297.1			10
XMCD017	298.0	298.1			10
XMCD017	299.0	299.1			10
XMCD017	300.0	300.1			20
XMCD017	301.0	301.1			
XMCD017	302.0	302.1			10
XMCD017	303.0	303.1			20
XMCD017	304.0	304.1			10
XMCD017	305.0	305.1			20
XMCD017	306.0	306.1			10
XMCD017	307.0	307.1			10
XMCD017	308.0	308.1			20
XMCD017	309.0	309.1			10
XMCD017	310.0	310.1			30
XMCD017	311.0	311.1			20
XMCD017	312.0	312.1			30
XMCD017	313.0	313.1			30
XMCD017	314.0	314.1			30
XMCD017	315.0	315.1			20
XMCD017	316.0	316.1			30
XMCD017	317.0	317.1			20
XMCD017	318.0	318.1			40
XMCD017	319.0	319.1			30
XMCD017	320.0	320.1			30
XMCD017	321.0	321.1			30
XMCD017	322.0	322.1			
XMCD017	323.0	323.1			20
XMCD017	324.0	324.1			40
XMCD017	325.0	325.1			30
XMCD017	326.0	326.1			30
XMCD017	327.0	327.1			10
XMCD017	328.0	328.1			
XMCD017	329.0	329.1			20
XMCD017	330.0	330.1			20
XMCD017	331.0	331.1			30
XMCD017	332.0	332.1			30
XMCD017	333.0	333.1			30
XMCD017	334.0	334.1			30
XMCD017	335.0	335.1			50
XMCD017	336.0	336.1			
XMCD017	337.0	337.1			40

920

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XMCD017	338.0	338.1			30
XMCD017	339.0	339.1			
XMCD017	340.0	340.1			
XMCD017	341.0	341.1			20
XMCD017	342.0	342.1			
XMCD017	343.0	343.1			
XMCD017	344.0	344.1			
XMCD017	345.0	345.1			
XMCD017	346.0	346.1			
XMCD017	347.0	347.1			
XMCD017	348.0	348.1			
XMCD017	349.0	349.1			
XMCD017	350.0	350.1			30
XMCD017	351.0	351.1			
XMCD017	352.0	352.1			30
XMCD017	353.0	353.1			20
XMCD017	354.0	354.1			20
XMCD017	355.0	355.1			20
XMCD017	356.0	356.1			20
XMCD017	357.0	357.1			20
XMCD017	358.0	358.1			20
XMCD017	359.0	359.1			20
XMCD017	360.0	360.1			30
XMCD017	361.0	361.1			20
XMCD017	362.0	362.1			20
XMCD017	363.0	363.1			
XMCD017	364.0	364.1			20
XMCD017	365.0	365.1			20
XMCD017	366.0	366.1			
XMCD017	367.0	367.1			30
XMCD017	368.0	368.1			20
XMCD017	369.0	369.1			30
XMCD017	370.0	370.1			30
XMCD017	371.0	371.1			20
XMCD017	372.0	372.1			10
XMCD017	373.0	373.1			10
XMCD017	374.0	374.1			40
XMCD017	375.0	375.1			20
XMCD017	376.0	376.1			20
XQRD081	0.0	0.1			
XQRD081	1.0	1.1			
XQRD081	2.0	2.1			
XQRD081	3.0	3.1			
XQRD081	4.0	4.1			20
XQRD081	5.0	5.1			10
XQRD081	6.0	6.1			20
XQRD081	7.0	7.1			10
XQRD081	8.0	8.1			20
XQRD081	9.0	9.1			20
XQRD081	10.0	10.1			20
XQRD081	11.0	11.1			20
XQRD081	12.0	12.1			20

921

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XQRD081	13.0	13.1			20
XQRD081	14.0	14.1			20
XQRD081	15.0	15.1			10
XQRD081	16.0	16.1			20
XQRD081	17.0	17.1			20
XQRD081	18.0	18.1			10
XQRD081	19.0	19.1			10
XQRD081	20.0	20.1			20
XQRD081	21.0	21.1			30
XQRD081	22.0	22.1			60
XQRD081	23.0	23.1			10
XQRD081	24.0	24.1			20
XQRD081	25.0	25.1			40
XQRD081	26.0	26.1			10
XQRD081	27.0	27.1			20
XQRD081	28.0	28.1			20
XQRD081	29.0	29.1			20
XQRD081	30.0	30.1			20
XQRD081	31.0	31.1			30
XQRD081	32.0	32.1			20
XQRD081	33.0	33.1			20
XQRD081	34.0	34.1			
XQRD081	35.0	35.1			
XQRD081	36.0	36.1			
XQRD081	37.0	37.1			
XQRD081	38.0	38.1			
XQRD081	39.0	39.1			10
XQRD081	40.0	40.1			10
XQRD081	41.0	41.1			10
XQRD081	42.0	42.1			10
XQRD081	43.0	43.1			10
XQRD081	44.0	44.1			10
XQRD081	45.0	45.1			10
XQRD081	46.0	46.1			0
XQRD081	47.0	47.1			10
XQRD081	48.0	48.1			10
XQRD081	49.0	49.1			0
XQRD081	50.0	50.1			10
XQRD081	51.0	51.1			10
XQRD081	52.0	52.1			10
XQRD081	53.0	53.1			10
XQRD081	54.0	54.1			10
XQRD081	55.0	55.1			10
XQRD081	56.0	56.1			10
XQRD081	57.0	57.1			10
XQRD081	58.0	58.1			10
XQRD081	59.0	59.1			10
XQRD081	60.0	60.1			20
XQRD081	61.0	61.1			20
XQRD081	62.0	62.1			20
XQRD081	63.0	63.1			10
XQRD081	64.0	64.1			20
XQRD081	65.0	65.1			20

DHID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
XQRD081	66.0	66.1		10
XQRD081	67.0	67.1		20
XQRD081	68.0	68.1		10
XQRD081	69.0	69.1		20
XQRD081	70.0	70.1		10
XQRD081	71.0	71.1		10
XQRD081	72.0	72.1		20
XQRD081	73.0	73.1		10
XQRD081	74.0	74.1		10
XQRD081	75.0	75.1		10
XQRD081	76.0	76.1		20
XQRD081	77.0	77.1		20
XQRD081	78.0	78.1		10
XQRD081	79.0	79.1		10
XQRD081	80.0	80.1		10
XQRD081	81.0	81.1		10
XQRD081	82.0	82.1		10
XQRD081	83.0	83.1		10
XQRD081	84.0	84.1		20
XQRD081	85.0	85.1		0
XQRD081	86.0	86.1		10
XQRD081	87.0	87.1		
XQRD081	88.0	88.1		
XQRD081	89.0	89.1		
XQRD081	90.0	90.1		
XQRD081	91.0	91.1		
XQRD081	92.0	92.1		
XQRD081	93.0	93.1		
XQRD081	94.0	94.1		10
XQRD081	95.0	95.1		20
XQRD081	96.0	96.1		10
XQRD081	97.0	97.1		10
XQRD081	98.0	98.1		10
XQRD081	99.0	99.1		10
XQRD081	100.0	100.1		0
XQRD081	101.0	101.1		10
XQRD081	102.0	102.1		10
XQRD081	103.0	103.1		10
XQRD081	104.0	104.1		10
XQRD081	105.0	105.1		
XQRD081	106.0	106.1		10
XQRD081	107.0	107.1		10
XQRD081	108.0	108.1		10
XQRD081	109.0	109.1		10
XQRD081	110.0	110.1		10
XQRD081	111.0	111.1		20
XQRD081	112.0	112.1		10
XQRD081	113.0	113.1		10
XQRD081	114.0	114.1		20
XQRD081	115.0	115.1		10
XQRD081	116.0	116.1		20
XQRD081	117.0	117.1		30
XQRD081	118.0	118.1		10

923

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XQRD081	119.0	119.1			10
XQRD081	120.0	120.1			10
XQRD081	121.0	121.1			10
XQRD081	122.0	122.1			10
XQRD081	123.0	123.1			10
XQRD081	124.0	124.1			10
XQRD081	125.0	125.1			10
XQRD081	126.0	126.1			20
XQRD081	127.0	127.1			20
XQRD081	128.0	128.1			30
XQRD081	129.0	129.1			20
XQRD081	130.0	130.1			20
XQRD081	131.0	131.1			10
XQRD081	132.0	132.1			10
XQRD081	133.0	133.1			20
XQRD081	134.0	134.1			10
XQRD081	135.0	135.1			10
XQRD081	136.0	136.1			10
XQRD081	137.0	137.1			20
XQRD081	138.0	138.1			10
XQRD081	139.0	139.1			20
XQRD081	140.0	140.1			20
XQRD081	141.0	141.1			20
XQRD081	142.0	142.1			10
XQRD081	143.0	143.1			10
XQRD081	144.0	144.1			20
XQRD081	145.0	145.1			10
XQRD081	146.0	146.1			10
XQRD081	147.0	147.1			20
XQRD081	148.0	148.1			10
XQRD081	149.0	149.1			20
XQRD081	150.0	150.1			20
XQRD081	151.0	151.1			30
XQRD081	152.0	152.1			10
XQRD081	153.0	153.1			20
XQRD081	154.0	154.1			
XQRD081	155.0	155.1			10
XQRD081	156.0	156.1			20
XQRD081	157.0	157.1			10
XQRD081	158.0	158.1			10
XQRD081	159.0	159.1			10
XQRD081	160.0	160.1			10
XQRD081	161.0	161.1			10
XQRD081	162.0	162.1			0
XQRD081	163.0	163.1			0
XQRD081	164.0	164.1			0
XQRD081	165.0	165.1			0
XQRD081	166.0	166.1			0
XQRD081	167.0	167.1			10
XQRD081	168.0	168.1			10
XQRD081	169.0	169.1			
XQRD081	170.0	170.1			
XQRD081	171.0	171.1			10

924

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XQRD081	172.0	172.1			0
XQRD081	173.0	173.1			0
XQRD081	174.0	174.1			0
XQRD081	175.0	175.1			0
XQRD081	176.0	176.1			0
XQRD081	177.0	177.1			0
XQRD081	178.0	178.1			10
XQRD081	179.0	179.1			0
XQRD081	180.0	180.1			10
XQRD081	181.0	181.1			0
XQRD081	182.0	182.1			0
XQRD081	183.0	183.1			10
XQRD081	184.0	184.1			10
XQRD081	185.0	185.1			0
XQRD081	186.0	186.1			0
XQRD081	187.0	187.1			0
XQRD081	188.0	188.1			0
XQRD081	189.0	189.1			10
XQRD081	190.0	190.1			0
XQRD109	0.0	0.1			
XQRD109	1.0	1.1			
XQRD109	2.0	2.1			
XQRD109	3.0	3.1			
XQRD109	4.0	4.1			
XQRD109	5.0	5.1			
XQRD109	6.0	6.1			
XQRD109	7.0	7.1			
XQRD109	8.0	8.1			
XQRD109	9.0	9.1			
XQRD109	10.0	10.1			
XQRD109	11.0	11.1			
XQRD109	12.0	12.1			
XQRD109	13.0	13.1			
XQRD109	14.0	14.1			
XQRD109	15.0	15.1			
XQRD109	16.0	16.1			
XQRD109	17.0	17.1			
XQRD109	18.0	18.1			
XQRD109	19.0	19.1			
XQRD109	20.0	20.1			
XQRD109	21.0	21.1			
XQRD109	22.0	22.1			
XQRD109	23.0	23.1			
XQRD109	24.0	24.1			
XQRD109	25.0	25.1			10
XQRD109	26.0	26.1			20
XQRD109	27.0	27.1			10
XQRD109	28.0	28.1			10
XQRD109	29.0	29.1			10
XQRD109	30.0	30.1			10
XQRD109	31.0	31.1			20
XQRD109	32.0	32.1			20

599696

925

DH	DHID9	FROM9	TOTO9	ROCK ALTNG	SUSCPT
XQ	XQRD109	33.0	33.1		20
XQ	XQRD109	34.0	34.1		10
XQ	XQRD109	35.0	35.1		20
XQ	XQRD109	36.0	36.1		20
XQ	XQRD109	37.0	37.1		20
XQ	XQRD109	38.0	38.1		20
XQ	XQRD109	39.0	39.1		10
XQ	XQRD109	40.0	40.1		10
XQ	XQRD109	41.0	41.1		20
X	XQRD109	42.0	42.1		20
X	XQRD109	43.0	43.1		10
X	XQRD109	44.0	44.1		20
X	XQRD109	45.0	45.1		20
X	XQRD109	46.0	46.1		10
X	XQRD109	47.0	47.1		10
X	XQRD109	48.0	48.1		10
X	XQRD109	49.0	49.1		10
X	XQRD109	50.0	50.1		10
X	XQRD109	51.0	51.1		10
X	XQRD109	52.0	52.1		20
X	XQRD109	53.0	53.1		30
X	XQRD109	54.0	54.1		20
X	XQRD109	55.0	55.1		30
X	XQRD109	56.0	56.1		10
X	XQRD109	57.0	57.1		20
X	XQRD109	58.0	58.1		30
X	XQRD109	59.0	59.1		20
X	XQRD109	60.0	60.1		20
X	XQRD109	61.0	61.1		20
X	XQRD109	62.0	62.1		20
X	XQRD109	63.0	63.1		20
X	XQRD109	64.0	64.1		20
X	XQRD109	65.0	65.1		20
X	XQRD109	66.0	66.1		20
X	XQRD109	67.0	67.1		10
X	XQRD109	68.0	68.1		20
X	XQRD109	69.0	69.1		20
X	XQRD109	70.0	70.1		20
X	XQRD109	71.0	71.1		30
X	XQRD109	72.0	72.1		30
X	XQRD109	73.0	73.1		20
X	XQRD109	74.0	74.1		20
X	XQRD109	75.0	75.1		20
X	XQRD109	76.0	76.1		20
X	XQRD109	77.0	77.1		20
X	XQRD109	78.0	78.1		10
X	XQRD109	79.0	79.1		30
X	XQRD109	80.0	80.1		10
X	XQRD109	81.0	81.1		20
X	XQRD109	82.0	82.1		20
X	XQRD109	83.0	83.1		10
X	XQRD109	84.0	84.1		20
X	XQRD109	85.0	85.1		20

599697

926

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XQRD109	86.0	86.1			20
XQRD109	87.0	87.1			10
XQRD109	88.0	88.1			20
XQRD109	89.0	89.1			20
XQRD109	90.0	90.1			30
XQRD109	91.0	91.1			10
XQRD109	92.0	92.1			20
XQRD109	93.0	93.1			10
XQRD109	94.0	94.1			20
XQRD109	95.0	95.1			30
XQRD109	96.0	96.1			30
XQRD109	97.0	97.1			40
XQRD109	98.0	98.1			40
XQRD109	99.0	99.1			40
XQRD109	100.0	100.1			30
XQRD109	101.0	101.1			30
XQRD109	102.0	102.1			30
XQRD109	103.0	103.1			30
XQRD109	104.0	104.1			40
XQRD109	105.0	105.1			40
XQRD109	106.0	106.1			30
XQRD109	107.0	107.1			40
XQRD109	108.0	108.1			30
XQRD109	109.0	109.1			30
XQRD109	110.0	110.1			40
XQRD109	111.0	111.1			40
XQRD109	112.0	112.1			40
XQRD109	113.0	113.1			30
XQRD109	114.0	114.1			30
XQRD109	115.0	115.1			30
XQRD109	116.0	116.1			40
XQRD109	117.0	117.1			40
XQRD109	118.0	118.1			30
XQRD109	119.0	119.1			30
XQRD109	120.0	120.1			40
XQRD109	121.0	121.1			40
XQRD109	122.0	122.1			40
XQRD109	123.0	123.1			40
XQRD109	124.0	124.1			40
XQRD109	125.0	125.1			40
XQRD109	126.0	126.1			40
XQRD109	127.0	127.1			40
XQRD109	128.0	128.1			30
XQRD109	129.0	129.1			30
XQRD109	130.0	130.1			20
XQRD109	131.0	131.1			30
XQRD109	132.0	132.1			20
XQRD109	133.0	133.1			40
XQRD109	134.0	134.1			30
XQRD109	135.0	135.1			30
XQRD109	136.0	136.1			10
XQRD109	137.0	137.1			30
XQRD109	138.0	138.1			20

927

DHID9	FROM9	TOTO9	ROCK	ALTNG	SUSCPT
XQRD109	139.0	139.1			20
XQRD109	140.0	140.1			30
XQRD109	141.0	141.1			30
XQRD109	142.0	142.1			30
XQRD109	143.0	143.1			40
XQRD109	144.0	144.1			40
XQRD109	145.0	145.1			20
XQRD109	146.0	146.1			20
XQRD109	147.0	147.1			30
XQRD109	148.0	148.1			20
XQRD109	149.0	149.1			20
XQRD109	150.0	150.1			20
XQRD109	151.0	151.1			40
XQRD109	152.0	152.1			10
XQRD109	153.0	153.1			20
XQRD109	154.0	154.1			20
XQRD109	155.0	155.1			20
XQRD109	156.0	156.1			20
XQRD109	157.0	157.1			20
XQRD109	158.0	158.1			20
XQRD109	159.0	159.1			30
XQRD109	160.0	160.1			20
XQRD109	161.0	161.1			30
XQRD109	162.0	162.1			20
XQRD109	163.0	163.1			30
XQRD109	164.0	164.1			20
XQRD109	165.0	165.1			20
XQRD109	166.0	166.1			10
XQRD109	167.0	167.1			20
XQRD109	168.0	168.1			20
XQRD109	169.0	169.1			20
XQRD109	170.0	170.1			20
XQRD109	171.0	171.1			30
XQRD109	172.0	172.1			10
XQRD109	173.0	173.1			20
XQRD109	174.0	174.1			20
XQRD109	175.0	175.1			30
XQRD109	176.0	176.1			30
XQRD109	177.0	177.1			30
XQRD109	178.0	178.1			20
XQRD109	179.0	179.1			30
XQRD109	180.0	180.1			30
XQRD109	181.0	181.1			40
XQRD109	182.0	182.1			30
XQRD109	183.0	183.1			20
XQRD109	184.0	184.1			20
XQRD109	185.0	185.1			30
XQRD109	186.0	186.1			20
XQRD109	187.0	187.1			20
XQRD109	188.0	188.1			30
XQRD109	189.0	189.1			30
XQRD109	190.0	190.1			10
XQRD109	191.0	191.1			20

928

DHID9	FROM9	TOT09	ROCK	ALTNG	SUSCPT
XQRD109	192.0	192.1			20
XQRD109	193.0	193.1			30
XQRD109	194.0	194.1			30
XQRD109	195.0	195.1			20
XQRD109	196.0	196.1			30
XQRD109	197.0	197.1			20
XQRD109	198.0	198.1			20
XQRD109	199.0	199.1			20
XQRD109	200.0	200.1			10
XQRD109	201.0	201.1			10
XQRD109	202.0	202.1			20
XQRD109	203.0	203.1			30
XQRD109	204.0	204.1			20
XQRD109	205.0	205.1			20
XQRD109	206.0	206.1			30
XQRD109	207.0	207.1			20
XQRD109	208.0	208.1			30
XQRD109	209.0	209.1			30
XQRD109	210.0	210.1			30
XQRD109	211.0	211.1			30
XQRD109	212.0	212.1			40
XQRD109	213.0	213.1			20
XQRD109	214.0	214.1			20
XQRD109	215.0	215.1			20
XQRD109	216.0	216.1			20
XQRD109	217.0	217.1			20
XQRD109	218.0	218.1			30
XQRD109	219.0	219.1			20
XQRD109	220.0	220.1			20
XQRD109	222.0	222.1			20
XQRD109	223.0	223.1			20
XQRD109	224.0	224.1			20
XQRD109	225.0	225.1			20
XQRD109	226.0	226.1			20
XQRD109	227.0	227.1			20
XQRD109	228.0	228.1			20
XQRD109	229.0	229.1			20
XQRD109	230.0	230.1			30
XQRD109	231.0	231.1			20
XQRD109	232.0	232.1			10
XQRD109	233.0	233.1			30
XQRD109	234.0	234.1			20
XQRD109	235.0	235.1			20
XQRD109	236.0	236.1			20
XQRD109	237.0	237.1			20
XQRD109	238.0	238.1			10
XQRD109	239.0	239.1			10
XQRD109	240.0	240.1			20
XQRD109	241.0	241.1			20
XQRD109	242.0	242.1			30
XQRD109	243.0	243.1			30
XQRD109	244.0	244.1			20
XQRD109	245.0	245.1			30

DHID9	FROM9	TOT09	ROCK ALTNG	SUSCPT
XQRD109	246.0	246.1		20
XQRD109	247.0	247.1		30
XQRD109	248.0	248.1		30
XQRD109	249.0	249.1		20
XQRD109	250.0	250.1		30
XQRD109	251.0	251.1		10
XQRD109	252.0	252.1		30
XQRD109	253.0	253.1		30
XQRD109	254.0	254.1		20
XQRD109	255.0	255.1		20
XQRD109	256.0	256.1		10
XQRD109	257.0	257.1		20
XQRD109	258.0	258.1		20
XQRD109	259.0	259.1		30
XQRD109	260.0	260.1		10
XQRD109	261.0	261.1		20
XQRD109	262.0	262.1		10
XQRD109	263.0	263.1		30
XQRD109	264.0	264.1		30
XQRD109	265.0	265.1		20
XQRD109	266.0	266.1		30
XQRD109	267.0	267.1		20
XQRD109	268.0	268.1		
XQRD109	268.9	269.0		

APPENDIX 34.

Physical Data Samples

Sample No:	DDH	Depth	Lithology
379429	MAC 10	48.5	Que River shale
379430	MAC 10	135.6	Vesicular pillow basalt
379431	MAC 10	143.3	Poorly vesicular basalt
379432	MAC 10	299.1	Altered andesitic feldspar-phyric lava breccia
379433	MAC 10	346.1	Unaltered andesitic feldspar-phyric lava breccia
379434	MAC 10	377.6	Basalt
379435	MAC 10	386.4	Andesitic lava breccia
379436	MAC 10	434.1	Andesitic lava
379437	MAC 10	449.2	Interbedded shale and sandstone
379438	MAC 10	486.0	Sediment
379439	MAC 10	494.3	Layered sediment
379440	MAC 10	504.5	Sandstone
379441	HAT 5	453.5	Basement mica sandstone
379442	MC 14	53.7	Dolerite

770 599703

PETROPHYSICAL DATA RECORD SHEET — PRELIMINARY

Date: 10 July, 1987

Reference: Aberfoyle Lot 87/1
A.M. Hespe - Wivenhoe
J. Silic - Melbourne

D.W. Emerson, Dept. Geology & Geophysics
The University of Sydney, NSW. 2006
Phone: (02) 692 2031 692-2912

Samples		Physical Properties: ← Textural → DBD	P_A	Velocity V_p	← Electrical → ρ	Φ
No		g/cc (t/m^3)	%	m/s	DC ohm m	
379	429	2.73	0.9	4673	210	73
	430	2.80	0.3	6800	5710	11
	431	2.58	1.9	6182	840	11
	432	2.69	0.3	5303	5240	9
	433	2.68	0.2	6442	12220	16
	434	2.78	0.1	6576	17610	5
	435	2.73	0.7	6084	1740	2
	436	2.70	0.1	6185	6930	3
	437	2.77	0.2	6136	3670	2
	438	2.74	0.3	5767	1160	9
	439	2.73	0.3	5833	1540	2
	440	2.69	0.2	6281	3550	3
	441	2.70	0.7	5971	5250	16
379	442	2.84	0.9	6310	5270	19

Comments :

DBD : Dry bulk density

P_A : apparent (water accessible) porosity

V_p : compressional wave velocity 63 k Hz ultrasonic; measured on core 'as is' i.e. not saturated

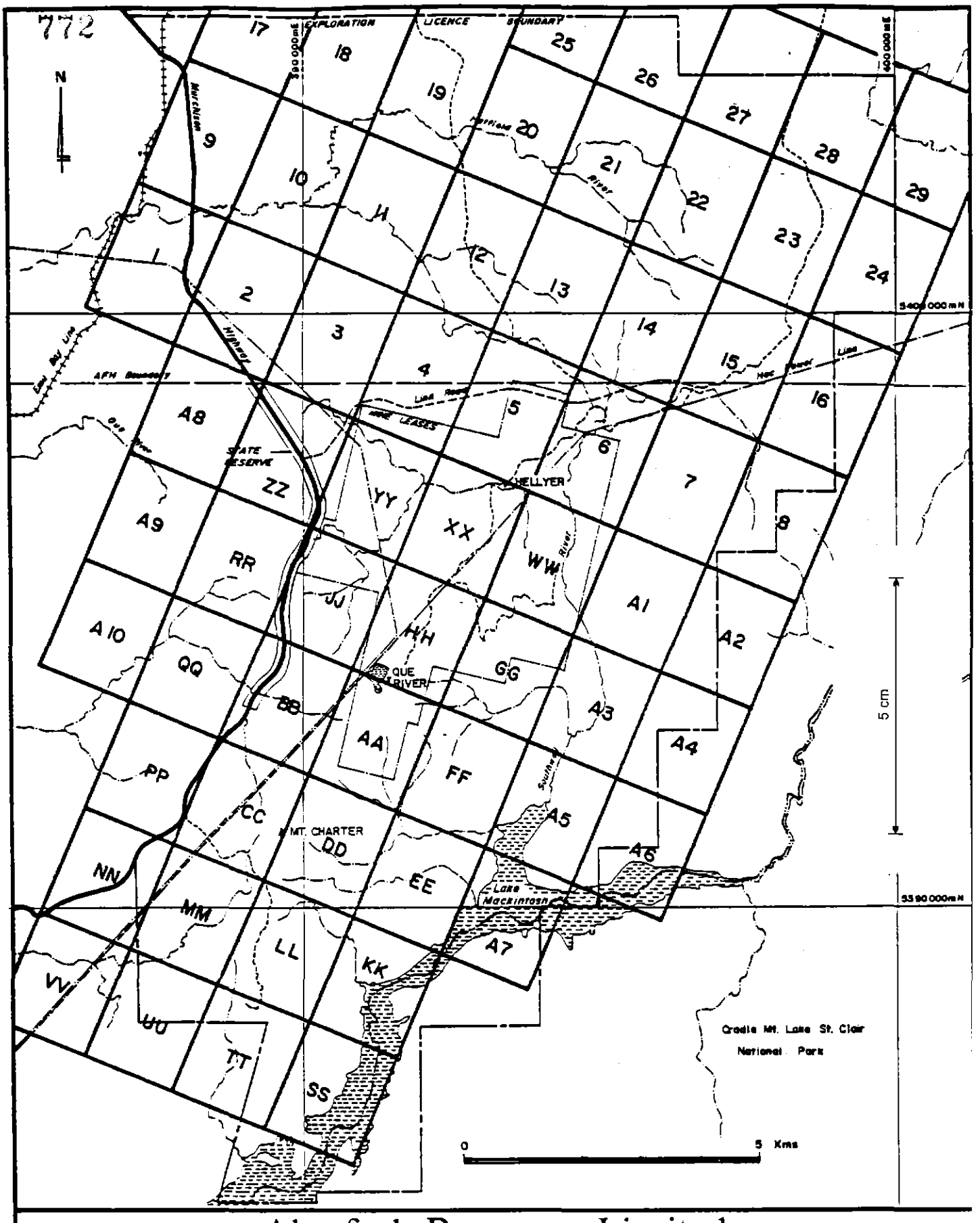
ρ : resistivity - cores vacuum saturated with 60 ohmm tap water (DC) 20°C

Φ : phase lag (negative) @ 0.1 hz

APPENDIX 35.

599705

772



Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

MACKINTOSH DISTRICT

1: 2500 MAP SHEETS — INDEX

Compiled :

Drawn : RJE

Traced :

Checked :

Location Code : K55/6/44

Scale : As shown

Date : February, 1988

Plate No. : MAC 181

Abundant	abn
Adularia	Adl
Agglomerate	agg
Albite	Ab
Alkali feldspar	Afd
Altered	alt
Amphibole	Amb
Amygdaloidal	amg
Andesite	A
Angular	ang
Aplite	Ap
Approximate	apx
Arcuate	ar
Arenaceous	arn
Argillaceous	arg
Argillite	Arg
Arkose	Ak
Arkosic	ak
Arsenopyrite	Ap
Ash volcaniclastic	av
Autobrecciated	aub
Average	ave
Banded	bnd
Barite	Ba
Basalt	B
Bedded	bd
Black	bk
Black shale	Bsh
Blue	bl
Boulder	bld
Breccia	b
Breccia volcaniclastic	bv
Bright	brt
Brown	br
Calcareous	cc
Calcite	Cc
Carbonaceous	g
Carbonate	Co
Cavernous	cav
Chalcopyrite	Cp
Chert	Ch
Chlorite	Cl
Chromite	Cr
Chromitiferous	cr
Clay	cy
Coarse	c
Coarse grained	cg
Colour	col
Common	com
Conglomerate	Cg
Conglomeratic	cg
Crystal	x
Crystal volcaniclastic	xv
Dacite	D
Dark	dk
Dense	dns
Devitrification	dv
Diorite	Di
Disseminated	dis
Dolerite	Dol
Dolomite	Dm
Dyke	dy
Elongated	el
Emphasised	emp
Epiclastic (adj.)	e
Epiclastic (noun)	E
Epidote	Ep
Euhedral	euh
Eutaxitic	eux
Fabric	fab
Fault	F
Fault zone	FZ
Feldspar	Fd
Feldspar phyric	fp
Felspathic	fel
Ferruginous	fer
Fibrous	fb
Fine	f
Fine grained	fg
Fissile	fis
Flowbanded	fbn
Fragments	fr
Fuchsite	Fu
Galena	Gn
Glass	Gl
Glassy	gl
Granular	glr
Graphite	Gt
Graphitic	gt
Green	gn
Grey	gy
Greywacke	Gw
Haematite	Hmt
Hornblende	Hb
Ignimbrite	Ig
Illite	Ill
Interbedded	ibd
Intercalated	icl
Intrusive	int
Jurassic	Ju
K-Feldspar	Kfd
Khaki	kh
Laminated	lm
Lapilli volcaniclastic	lv
Lava	l
Lava breccia	lb
Leached	lch
Limonitic	Lim
Light	lgt
Limestone	Lst
Lithic	lh
Magnetite	Mt
Massive	mas
Matrix	mtx
Matrix dominated	md
Medium	med
Medium grained	mg
Metamorphosed	meta
Mica	Mic
Micaceous	mic
Minor	mnr
Mixed	mxd
Mottled	mtl
Mudstone	Mst
Nodule	nd
Off white	ow
Olivine	Ol
Orange	or
Ordovician	O
Oxidised	ox
Patchy	pat
Peperitic	pep
Perlitic	prl
Pervasive	per
Phenocrysts	phn
Phyllite	phyl
Phyric	p
Picrite	Pic
Pillow lava	pl
Pink	pk
Polymict	Y
Porphyritic	por
Pumice	Pu
Pumiceous	pu
Purple	pp
Pyrite	Py
Pyritic	py
Pyroxene	Px
Quartz	Q
Quartzite	Qtz
Quellite	Qll
Questionable	?
Recrystallised	rx
Red	rd
Rehealed	rhd
Reworked	rw
Rhyodacite	RD
Rhyolite	R
Ripple marks	rmk
Round	rnd
Rubble	rbb
Sandstone	Ss
Schist	Sch
Schistose	sch
Sediment	sed
Selected fragments	sfr
Sericite	Se
Serpentine	Srp
Shale	Sh
Sheared	shd
Siderite	Sid
Silica	Si
Siliceous	sil
Siltstone	Slt
Slickenside	slk
Sphalerite	Sp
Spotted	spt
Sporty	spt
Stockwork	stw
Strong	str
Structure controlled	stc
Talc	Tc
Tertiary	T
Trace	tr
Trachyte	Tr
Tuff	Tf
Tuffaceous	tf
Variolitic	vr
Vein	vn
Vein concordant to bedd	cV
Vein discordant to bedd	dV
Very	v
Vesicular	ves
Vitric	vtr
Volcanic	vlc
Volcaniclastic	vlcl
Weak	wk
Weathered	wth
White	wh
Yellow	yw

ABERFOYLE EXPLORATION

PROJECT : HATFIELD

PROSPECT: MT CHALMERS

571

DIAMOND DRILL LOG

HOLE NO : MC-19
PAGE : 6 of 11
LOGGED : AMH
DATE : MAY '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
212												
214												
216												
218												
220												
222												
224												
226					226.4 RARE AMPHIBOLE CLASTS ASS. TO WHITE SILICA + MINOR PY.							
228												
230												
232												
234				SHARP CONTACT WITH FABRIC OF FOLLOWING UNIT 50cm UPHOLE								
236			236.2		236.2							
238			TUFF LAVA	GREEN-GREY VERY SPARSELY PORPH. LAVA. SIMILAR TO 186.5-190.8. NON-VESICULAR. SIMILAR TO UPHOLE COMPS								
240			239.5 PHENOCRYSTALLINE AMPHIBOLE LAVA BRECCIA	AS FOR 190.8-226.2 EXCEPT FOR MATRIX: — TWO PHASES: • LIGHT TO DARK GREY PRIMARY CLASTS SIMILAR AS IN 190.8-226.2 • PALE BROWN-PINK-GREY FELS. (?) ALTERATION WITH DIFFUSE SIMILAR AND BLENDS TO "DISSOLVED" CLASTS	239.5 PALE BROWN-PINK-GREY FELS. (?) ALTERATION WITH DIFFUSE SIMILAR AND BLENDS TO "DISSOLVED" CLASTS								
242												
244												
246												
248												
250												
252												

240.66

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Charles

572

HOLE NO : MC-19

PAGE : 7 of 11

LOGGED : AMH

DATE : May '97

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
254														
256														
260														
262														
264														
266														
268														
270														
272														
274														
276														
278														
280														
282														
284														
286														
288														
290														
292														
294														

" 3

" 3

" 3

599708

573

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Hatfield

PROSPECT: Mt Chalmers

HOLE NO: MC-19

PAGE: 8 of 11

LOGGED: AMH

DATE: May '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING: TYPE / INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
296												
298												
300								F? 300.0 m; 1.0m. Sericitic-chloritic rubble.				
302												
304												
306												
308												
310												
312												
314				315.3 ↓ No primary clastic textures in matrix fabric seen to EOH. Andesite has a chaotic breccia texture with some zones vaguely fluxion. Feldspar phenocrysts content very variable	315.3 Weak patchy 2% - 5% pink-brown talc mx.							
316												
318												
320												
322												
324												
326												
328												
330												
332												
334												
336												

60.666

574

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HARFIELD

PROSPECT: MT CHARTER

HOLE NO: MC-19

PAGE: 9 of 11

LOGGED: AMH

DATE: May '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE	ALTERATION: INTENSITY	VEINING: TYPE	VEINING: INTENSITY	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
338						2								
340														
342														
344														
346														
348														
350														
352														
354														
356														
358						2								
360														
362														
364				364.6										
366				Thin zone of clear breccia texture with c:a = 40:60										
368														
370														
372														
374														
376														
378						2								

- 367.0 - Broken zone to 369.5 Chloritic - sericitic rubble. Pyr on fault plane at 10° to C.A.
- 372.0, 0.5cm wide; <10° C.A. Pyr on fault plane

59610

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : Harfiews

PROSPECT: Mt Chalmers

575

HOLE NO: MC-19

PAGE: 10 of 11

LOGGED: AMH

DATE: May '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION (Type Intensity)	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
380					" 2							
382				382.4 ▼								
384												
386												
390												
392												
394					" 2							
396												
398												
400												
402												
404												
406												
408												
410												
412												
414												
416												
417												
420					" 2							

f? [illegible]

3693.1

ABERFOYLE EXPLORATION

DIAMOND DRILL LOG

PROJECT : HARFIELDS

PROSPECT: MT CHARLES

576

HOLE NO: MC-19

PAGE: 11 of 11

LOGGED: AMH

DATE: MAY '87

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION: TYPE / INTENSITY	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
422												
424												
426												
428												
430												
432												
434												
436												
438												
440												
442				443.2 EOH.								
444												

599712

SAMPLE NO : 378367
LOCATION MC-19/30.3
REPRESENTATIVE OF : 6.3 - 40.4
REMARKS : Flow banded andesite lava.

SAMPLE NO : 378368
LOCATION : MC-19/80.0
REPRESENTATIVE OF : 56.0 - 118.0
REMARKS : Typical Mt. Charter feldsparphyric andesite lava breccia. Describe pink alteration.

SAMPLE NO : 378369
LOCATION : MC-19/146.9
REPRESENTATIVE OF : 118.0 - 149.2
REMARKS : Similar to 378367 but not flow banded.

SAMPLE NO : 378370
LOCATION : MC-19/189.4
REPRESENTATIVE OF : 186.5 - 190.8
REMARKS : Non-feldsparphyric lava, possibly a basalt.

SAMPLE NO : 378371
LOCATION : MC-19/222.5
REPRESENTATIVE OF : 190.8 - 236.2
REMARKS : Strongly feldsparphyric andesite lava breccia with grey cherty matrix.

SAMPLE NO : 378372
LOCATION : MC-19/238.4
REPRESENTATIVE OF : 236.2 - 239.5
REMARKS : Similar to 378370. Possibly a basalt.

SAMPLE NO : 378373
LOCATION : MC-19/269.8
REPRESENTATIVE OF : 239.5 - 315.3
REMARKS : FP. Andesite lava breccia with cherty matrix replaced by grey-green feldspar-silica alteration.

SAMPLE NO : 378374
LOCATION : MC-19/312.0
REPRESENTATIVE OF : 239.5 - 315.3
REMARKS : As for 378373. FD/Si alteration is more pinkish.

SAMPLE NO : 378375
LOCATION : MC-19/407.7
REPRESENTATIVE OF : 315.3 - 443.2
REMARKS : Andesite lava vlcl

SAMPLE NO : 378376
LOCATION : MC-19/439.1
REPRESENTATIVE OF : 315.3 - 443.2
REMARKS : Andesite lava.

599714 23 JUN REC'D

578

Central Mineralogical Services

39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

FAX. 08-363 1820

Mr. A.M. Hespe
Project Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

19th June, 1987

REPORT CMS 87/5/20

YOUR REFERENCE:	Letter dated 14.5.1987
DATE RECEIVED:	19th May, 1987
SAMPLE NOS.:	378367 - 378376
SUBMITTED BY:	A.M. Hespe
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 87/5/20

Ten drill core samples from DDH/MC-19 in the Mt. Charter area were received for routine petrological description. 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 tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

As sampled, this drilled sequence is dominated by andesitic volcanics (lavas, lava breccias, lithic tuffs), with minor intercalated leuco-andesites, basalts and dacites.

Andesites exhibit an essentially normal range of textural variants, including massive lavas and breccias, including moulded, lithic fragmental- and cherty argillite-matrixed variants. One example (sample 378374) exhibits slumped-reworked characteristics, with a minor volcanomict-polymict sandstone matrix component.

Volcanics in general exhibit sericite-chlorite-carbonate-quartz-albite alteration assemblages, supplemented by pyrite and, locally, traces of sphalerite. Basal zones, as sampled, tend to exhibit sericitic quartz alteration "overprints". In detail, this assemblage is temporally near-contemporaneous with the pervasive assemblage and, as noted previously, tends to develop in relatively primarily porous lithologies, typically initially as an interclast matrix ("hydrothermal cement") and then progressively replacing clasts, in some cases compositionally selectively, but elsewhere essentially pervasively.

Relatively silicified rocks tend to pinkish mottled colourations, as previously noted, as are similarly albitic alteration-overprinted facies in the Que/Hellyer area.

Perhaps significantly, perlitic-devitrified andesites, which appear relatively abundant in the Mt. Charter area, are absent from this suite, at least as sampled.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
378367 (T.S. 57981) 300.3	Leuco-Andesite. Albitised/sericite-stained to pseudomorphed feldspar phenocrysts, minor chloritised ferromagnesian (amphibole) microphenocrysts in a sericite-chlorite-stained/partly silicified felsic groundmass. Minor cherty quartz veinlets.	Porphyritic/trend glomeroporphyritic, flow-banded, felsitic.	Sporadic clots, minor amygdales of Fe-calcite. Leucoxenised opaques, minor traces of pyrite.	Devitrified, sericite-chlorite-albite-quartz-calcite-altered, flow-banded, felsic (leuco-)andesite. Colour variations reflect variable Fe-pigmentation (primary).
378368 50.0	Andesitic Breccia. Clasts of albitised to sericitised feldspar/weakly silicified-carbonated pyroxene-porphyritic, sericitised-chloritised felsite-groundmassed lava. Matrix of sericite-chlorite-calcite-stained microcrystalline quartz.	Psammite to agglomerate grade, weakly flow-structured, semi-moulded lithoclastic. Corrosive matrix.	Leucoxenised opaques, rare pyrite. Minor chlorite and Fe-pigmented calcite amygdales.	Typical altered andesitic lava breccia. Pinkish mottlings reflect Fe-pigmented feldspar (primary), secondary carbonate, and corrosive quartz matrix.
378369 146.9	Andesite. Albitised to calcite-chlorite-pseudomorphed feldspar and chloritised ferromagnesian phenocrysts, minor quartz-calcite amygdales in a chloritic/partly silicified felsic groundmass.	Similar to 378367, but unbanded, relatively porphyritic, with a feldspar-microlitic semi-felsitic groundmass.	Leucoxenised opaques, sporadic calcite-quartz veinlets.	Similarities with 378367, but in detail exhibits andesitic rather than leuco-andesitic characteristics. Similarly altered, but relatively chloritic.
378370 39.4	Amygdaloidal Basalt. Frequent chlorite-calcite-pseudomorphed ferromagnesian phenocrysts, quartz micro-amygdales in a cloudy carbonate-sericite-chlorite-altered, feldspar-microlathic, chlorite-mesostasised groundmass.	Strongly porphyritic, micro-amygdaloidal, basaltic, with a phyllitic overprint.	Traces of chromite (concentrated in altered ?orthopyroxene phenocrysts). Minor cloudy epidote-selvedged calcite veinlets.	Thoroughly chlorite-carbonate-sericite-altered, relatively sheared/phyllitic micro-amygdaloidal porphyritic lava; distinct relict basaltic characteristics.
378371 222.5	Andesitic Breccia. Clasts of albitised/sericitic plagioclase-/sericite-calcite-quartz-pseudomorphed ferromagnesian porphyritic lava. Matrix of kaolin-illite-altered fine silty micaceous cherty argillite.	"Andesitic"-textured, sericite-quartz-altered, weakly felsitic clasts. Vaguely slumped, weakly tuffaceous pelitic matrix.	Leucoxenised opaques, cloudy microcrystalline saussuritic epidote (clasts). Minor pyrite, rare sphalerite.	Cherty argillitic matrix includes minor clastic quartz, altered feldspar and sericitic shard fragments. Typical subaqueous sediment-matrixed andesitic breccia characteristics.
378372 ~328.4	Amygdaloidal "Dacite". Albitised/sericite-chlorite-stained plagioclase-, subordinate corroded quartz phenocrysts, chloritised amphibole microphenocrysts, quartz-calcite-chlorite amygdales. Sericite-carbonate-chlorite-altered felsic groundmass.	Porphyritic amygdaloidal, flow-structured, with an altered feldspar-microlitic to microlathic groundmass.	Leucoxenised opaques, minor weakly stressed, discontinuous calcite veinlets.	Texturally unusual (feldspar-microlathic) felsic lava. Leuco-andesitic/dacitic characteristics, with sufficient phenocrystal quartz to warrant dacitic classification.
378373 ~60.4	Andesitic Breccia. Clasts of sericite-chlorite-albite-quartz-carbonate-altered andesitic lava; minor albitised/sericitic feldspar grains with zones of silty-micaceous cherty argillite matrix, sporadic vugs of calcite.	Moulded to pelite/calcite-matrixed, psammite to agglomerate grade, lithoclastic.	Leucoxenised opaques, minor, but semi-pervasive pyrite, minor traces of sphalerite.	Framework includes andesitic and subordinate, relatively silicified "leuco-andesitic" clasts; semi-hybrid, relatively moulded, subaqueous lava breccia characteristics.
378374 312.0	"Andesitic Breccia". Clasts of sericite-chlorite-altered andesitic lava with erratic marginal silicified zones. Matrix of sericitic shale with interspersed zones, lenses of quartzofeldspathic sericitic sandy pelite/argillaceous sandstone.	Lapilli to agglomerate grade lava clasts, slumped psammopelitic matrix. Weakly sheared/phyllitic.	Leucoxenised opaques, minor pyrite (concentrated in lava clasts). Minor muscovite flakes, carbonaceous pelite clasts (matrix).	Strictly a volcanomict sedimentary breccia. Exhibits lava clast-marginal silicification in contrast to selective alteration of felsic clasts in 378373.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
378375	Andesitic "Breccia". Clasts of sericite-chlorite-albite-altered andesitic lava. Matrix of psammitic breccia witb a cement/ semi-pervasive replacements of sericitic microcrystalline quartz.	Poorly sorted psammite to lapilli grade lithoclastic; corrosive/ replacive sericitic quartz cement.	Leucoxenised opaques. Minor discontinuous sericitic quartz and late calcite veinlets.	Strictly a psammite to lapilli grade andesitic lithic tuff. Alteration pattern analogous to 378373 and 378374, but with a relatively sericitic silicification overprint.
378376 (T.S. 57990)	Andesitic Breccia. Clasts of sericite-chlorite-albite-carbonate-altered andesitic lava with zones of psammitic breccia matrix; irregular zones/replacements of micro-crystalline quartz, sericite, minor calcite.	Similar to 378375, but locally moulded and flow-structured. Incipiently sheared.	Leucoxenised opaques, minor traces of pyrite.	Essentially a composite of moulded lava breccia and lithic tuff. Alteration pattern similar to 378375, but with a relatively sericitic cement/replacive overprint.

CENTRAL MINERALOGICAL SERVICES

599717

582

ANALABS

599718

A division of MacDonald Hamilton & Co. Pty. Ltd.
Phone (09) 458 7999 — 52 Murray Road, Welshpool, W.A. 6106 — Telex AA92560
TLX: AA 97224

ANALYTICAL REPORT No. 23.3.08.04486

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
2385	

DATE RECEIVED	RESULTS REQUIRED
15/05/87	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	27/05/87	1	10

STATE OF SAMPLES		PRE-TREATMENT							ANALYSIS		
REFER BELOW	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	378367/76	PU	Prep: 016						Cu,Pb,Zn,Ag,Ni/101,As/114		
	378367/76	PU							Ba,Cr,Zr,Ti/401		
	378367/76	PU							Au/309		

RESULTS TO

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

RESULTS TO

REMARKS

MC-19
Petrology 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

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599719

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04486	27/05/87	2385	2 OF 2

TUBE No.	SAMPLE No.	Ti	Au	Cr	Zr/Ti					
1	378367	1350	<0.008	<5	.148					
2	378368	2100	<0.008	<5	.086					
3	378369	2150	<0.008	<5	.084					
4	378370	1800	<0.008	40	.033					
5	378371	2500	<0.008	30	.072					
6	378372	4050	<0.008	7	.039					
7	378373	2700	<0.008	10	.063					
8	378374	3250	<0.008	15	.055					
9	378375	2900	<0.008	<5	.055					
10	378376	2250	<0.008	5	.071					
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	0.008							
24	UNITS	PPM	PPM							
25	METHOD	401	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

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534

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599720

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.04486	27/05/87	2385	1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ni	As	Ba	Cr	Zr
1	378367	35	95	395	<0.5	20	3	1300	<5	200
2	378368	10	20	90	0.5	20	2	670	<5	180
3	378369	<5	10	95	<0.5	15	21	1650	<5	180
4	378370	25	20	75	1.0	145	3	900	400	60
5	378371	20	65	110	0.5	35	18	1050	30	180
6	378372	35	15	95	0.5	25	4	1250	7	160
7	378373	35	45	380	0.5	25	15	1100	10	170
8	378374	20	35	55	0.5	30	48	1300	15	180
9	378375	20	<5	70	<0.5	20	3	550	<5	160
10	378376	15	10	75	<0.5	20	3	1800	5	160
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	5	1	10	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	101	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

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
aux	autoxitic
fbn	flowbanded
gnlr	granular
lbd	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	64	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	16	Quellite
Q-lv, Q-bv	17	Quellite fragmental

ALTERATION SYMBOLS Overprint on "HA" symbol

(Combinations can be used)

Carbonate, Chlorite, Fuchsite, Sericite, Illite, Feldspar, Pyrite, Silica

EIOM PARTIAL STRATIGRAPHIC COLUMN

TB	8	TERTIARY BASALT
JD	32	JURASSIC DOLERITE
OCG	20	ORDOVICIAN SILICICLASTICS
URS	66	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

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 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

89-3005

599884

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

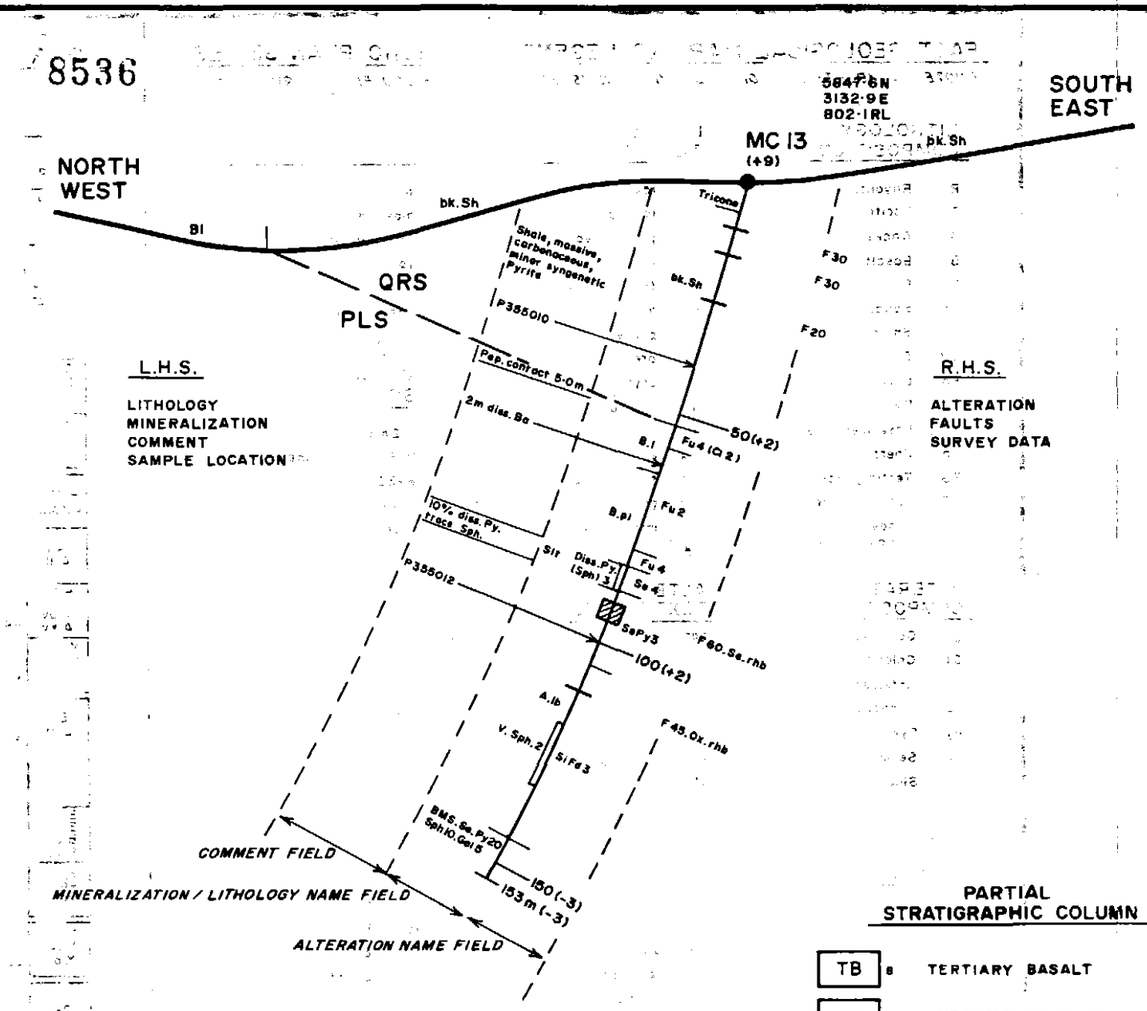
SURFACE GEOLOGICAL MAPPING LEGEND

Compiled:	AMH
Drawn:	AMH
Traced:	GLC
Checked:	AMH
Plate No:	MAC 114

Location Code: K55/6/44 — Scale: ——— — Date: November, 1985

RMO 554

8536



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/)*

8.pl — Lithology abbreviation classification, colour on adjoining table *(/50)*

QRS — Stratigraphic classification *(/100)*

Fu4 (C12) — 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 *(/80)*

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	6	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	49	ANDESITE FELDSPAR PHYRIC SEQUENCE

VOLCANICS

R.l / R.lb	86	Rhyolite lava, lava breccia
R.av / R.lv / R.bv / R.xv	85	Rhyolite volcaniclastic
YR.av / YR.lv / YR.bv	88	Rhyolitic Polymict volcaniclastic
D.l / D.l b	63	Dacite lava, lava breccia
D.av / D.lv / D.bv / D.xv	64	Dacite volcaniclastic
YD.av / YD.lv / YD.bv	86	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	62	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	6	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

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

599885

Aberfoyle Exploration Pty Ltd

REVISIONS			
Init	Date	Init	Date
GLC	12-85		

Location Code: K55/6/44

NORTH WEST TASMANIA

MACKINTOSH E.L.2/70, HATFIELD E.L.15/73

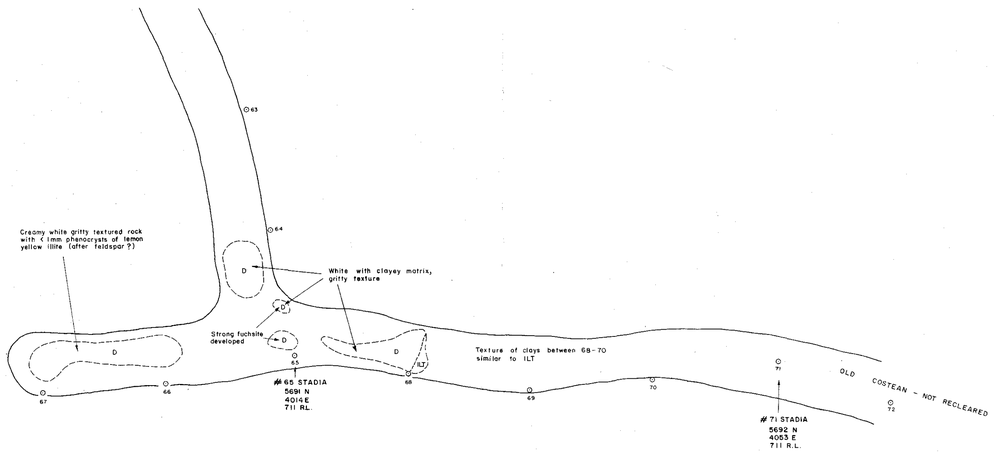
GEOLOGICAL LEGEND
1:1000 SCALE DDH SECTIONS

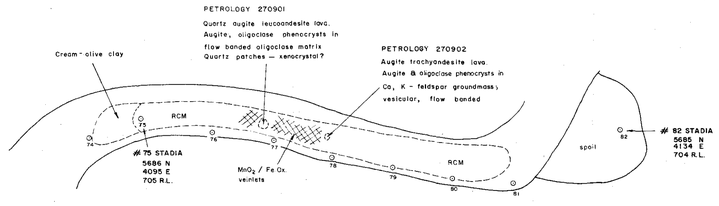
Scale: ———— Date: November, 1985

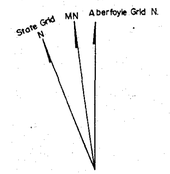
Compiled:	AMH
Drawn:	AMH
Traced:	GLC
Checked:	AMH
Plate No:	MAC 115

RMO 554

8538

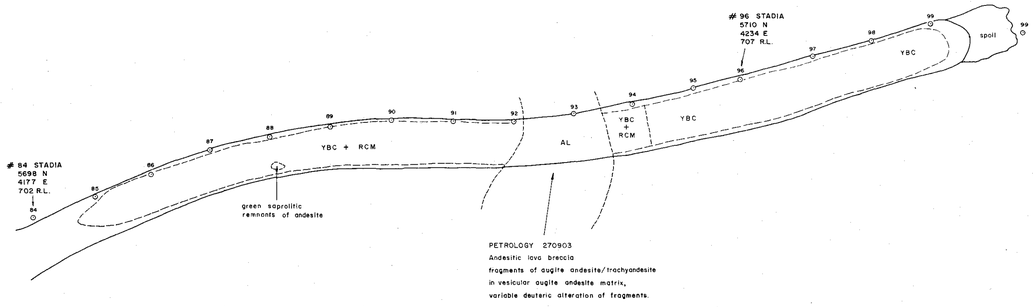






		270805	270806	270807	270808	270809	270810	270811
	ppm Cu	30	50	115	125	145	95	125
	ppm Pb	20	50	55	45	415	455	325
	ppm Zn	205	385	555	490	720	895	390
5 metre channel samples	ppm Ag	1·5	1·5	2·0	2·0	2·0	1·0	1·0
	ppm As	24	87	29	24	28	75	16
	ppm Ba	942	553	357	253	703	206	462
	ppm Cr		440		580		490	
	ppm Ni		55		95		155	
	ppm Zr		180		160		120	
	ppm Tl		4150		2900		5450	

		270812	270813	270814	270815	270816	270817	270818	270819	270820	270821	270822	270823	270824	270825
ppm	Cu	125	140	100	115	135	125	115	120	130	45	25	20	20	35
ppm	Pb	325	190	250	185	440	190	305	275	970	135	30	35	20	25
ppm	Zn	390	575	325	315	490	380	375	440	590	305	210	115	160	200
ppm	Ag	1·0	1·0	1·0	1·0	1·5	1·0	1·5	1·0	1·5	1·0	0·5	0·5	1·0	1·0
ppm	As	16	18	12	18	7	11	22	15	19	3	8	4	3	8
ppm	Ba	462	711	247	188	354	134	418	241	503	330	366	333	353	501
ppm	Cr	690		630		600		730		750		55		28	
ppm	Ni	250		160		220		165		185		34		10	
ppm	Zr	130		125		125		140		105		190		185	
ppm	Tl	5800		6050		4600		7100		4900		4900		9000	



89-3005

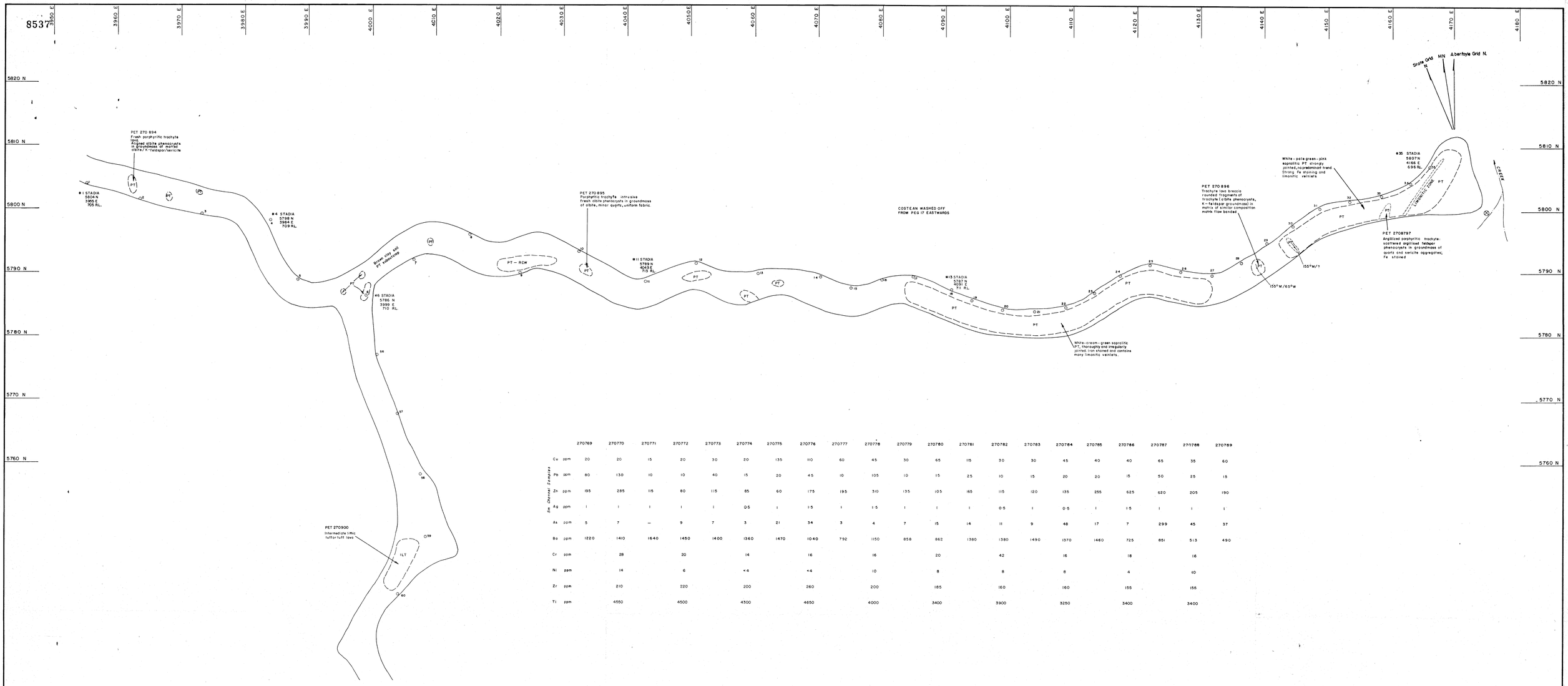
599886

FOR LEGEND SEE PLATE NO. 47e

5 cm

Aberfoyle Exploration Pty Ltd	
Geology: AMH	NORTH WEST TASMANIA
Drawn: AMH	HATFIELD E.L. 15/73
Traced: JB	UTEM ZONE I,
Checked:	COSTEAN 5700N
Revised by: TN Date: 16·6·86	Location code:
	Date: JULY 1984
	Scale: 1:250
	Plate No HT 47d.

8537



		270769	270770	270771	270772	270773	270774	270775	270776	270777	270778	270779	270780	270781	270782	270783	270784	270785	270786	270787	270788	270789
Sn Chrome Spectro	Cu ppm	20	20	15	20	30	20	135	110	60	45	30	65	115	30	30	45	40	40	65	35	60
	Pb ppm	80	130	10	10	40	15	20	45	10	105	10	15	25	10	15	20	20	15	50	25	15
	Zn ppm	195	285	115	80	115	85	60	175	195	310	135	105	165	115	120	135	255	625	620	205	190
	Ag ppm	1	1	1	1	1	0·5	1	1·5	1	1·5	1	1	1	0·5	1	0·5	1	1·5	1	1	1
	As ppm	5	7	—	9	7	3	21	34	3	4	7	15	14	11	9	48	17	7	299	45	37
	Ba ppm	1220	1410	1640	1450	1400	1360	1470	1040	792	1150	858	862	1380	1380	1490	1370	1460	725	851	513	490
	Cr ppm		28		20		14		16		16		20		42		16		18		16	
	Ni ppm		14		6		<4		<4		10		8		8		8		4		10	
	Zr ppm		210		220		200		260		200		185		160		160		155		155	
	Ti ppm		4550		4500		4300		4650		4000		3400		3900		3250		3400		3400	

		270790	270791	270792	270793	270794	270795	270796	270797	270798	270799
Sn Chrome Spectro	Cu ppm	25	30	30	35	85	35	20	20	30	85
	Pb ppm	15	10	5	5	30	10	10	15	30	100
	Zn ppm	280	270	260	270	495	175	90	95	120	380
	Ag ppm	0·5	1	1	1	1·5	1	1	1·5	1	1·5
	As ppm	11	9	14	14	7	63	17	32	25	23
	Ba ppm	354	338	230	278	568	538	1170	785	652	384
	Cr ppm	34		28		350		28		75	
	Ni ppm	24		36		48		10		20	
	Zr ppm	175		195		175		165		165	
	Ti ppm	4600		5150		6700		2300		4450	

	270800	270801	270802	270803	270804
	30	25	30	30	25
	25	25	30	40	25
	155	145	140	135	100
	1·5	1	1·5	1	1·5
	8	–	11	4	7
	684	662	643	672	636
	65		60		50
	26		18		14
	165		180		170
	4350		5450		4900

5 cm

LEGEND

- Limit of exposure in costean
- Geological Contact
- O Survey peg with number. Geochemical sampling is between survey pegs.
- ⊗ Location of UTEM anomaly or extrapolated UTEM axis

GEOLOGY

- Pt — Porphyritic trachyte: homogenous fine grained felted dark green groundmass with bright pink patches. Lava, lava breccia, ? intrusive
- RCM — Brick red MnO_2 stained clay after andesite
- YBC — Yellow brown clay after andesite
- ILT — Intermediate lithic tuff
- D — Dacite

599887

89-3005

Aberfoyle Exploration Pty Ltd

REVISIONS			
Init.	Date	Init.	Date
TN	16.6.86		
Location Code:			

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
UTEM ZONE I,
COSTEAN 5800 N

Scale: 1:250 | Date: July 1984

Compiled: AMH
Drawn: AMH
Traced: ACD
Checked:
Plate No: HT 47e

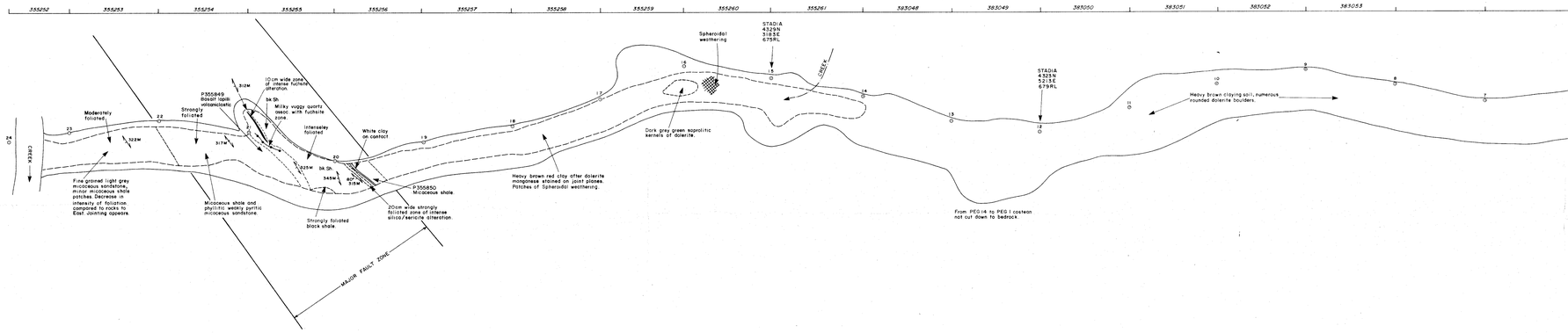
RMO 556

8539

Stone Grid N. | MN | Aberfoyle Grid N.

	355252	355253	355254	355255	355256	355257	355258	355259	355260	355261	383048	383049	383050	383051	383052	383053	383054	383055
Cu	25	15	25	40	45	75	80	50	50	30	42	20	30	34	38	40	26	36
Pb	65	45	35	70	325	615	790	190	450	600	140	175	115	105	345	250	180	650
Zn	215	190	250	305	1500	1550	1450	975	2100	2130	240	50	280	240	330	300	320	650
Ag	X	X	X	X	0·5	X	X	0·5	X	1·0	<1	<1	<1	1	<1	1	1	8
As	18	8	X	11	31	37	147	2730	X	1500	10	10	16	5	10	5	5	150
Ba	342	264	240	135	796	330	647	1500	1150	1080	850	390	280	280	440	620	670	650
Cr	469	486	595	1030	976	1150	1290	1180	1150	1080	550	150	280	630	690	720	120	185
Au	X	X	X	X	X	X	X	X	X	X	125	150	135	120	145	155	100	95
											105	115	140	130	150	85	5200	5000
											4550	5000	5650	5850	4050	4400		

10m CHANNEL SAMPLES



4350N
4340N
4330N
4320N
4310N
4300N

5 cm

LEGEND

- Limit of exposure in costean
- Geological contact
- Quartz vein
- Survey peg with number
- Strike/dip, foliation

355252 – 355261	Cu, Pb, Zn, Ag	Method 101	Perchloric Acid, AAS.
	As, Ba, Cr	Method 401	Pressed Powder, XRF.
	Au	Method 309	Fire Assay Fusion, AAS.
383048 – 383055	Cu, Pb, Zn	Method AAS.1	
	Ag	Method AAS.3	
	As, Ba, Zr	Method XRF 1	
	Ni, Cr	Method AAS.1B	
	Ti	Method C01. 4	

Analyses by Analabs

Analyses by Comlabs

599888

3090E | 3100E | 3110E | 3120E | 3130E | 3140E | 3150E | 3160E | 3170E | 3180E | 3190E | 3200E | 3210E | 3220E | 3230E | 3240E | 3250E | 3260E | 3270E

Aberfoyle Exploration Pty Ltd

REVISIONS			
Init.	Date	Init.	Date
Rob'll Int	7.7.86		
Adm.Ser.			

NORTH WEST TASMANIA

HATFIELD E.L. 15/73

4300N/3200E COSTEAN

Location Code : K55/3

Scale: 1:250 | Date: September 1985

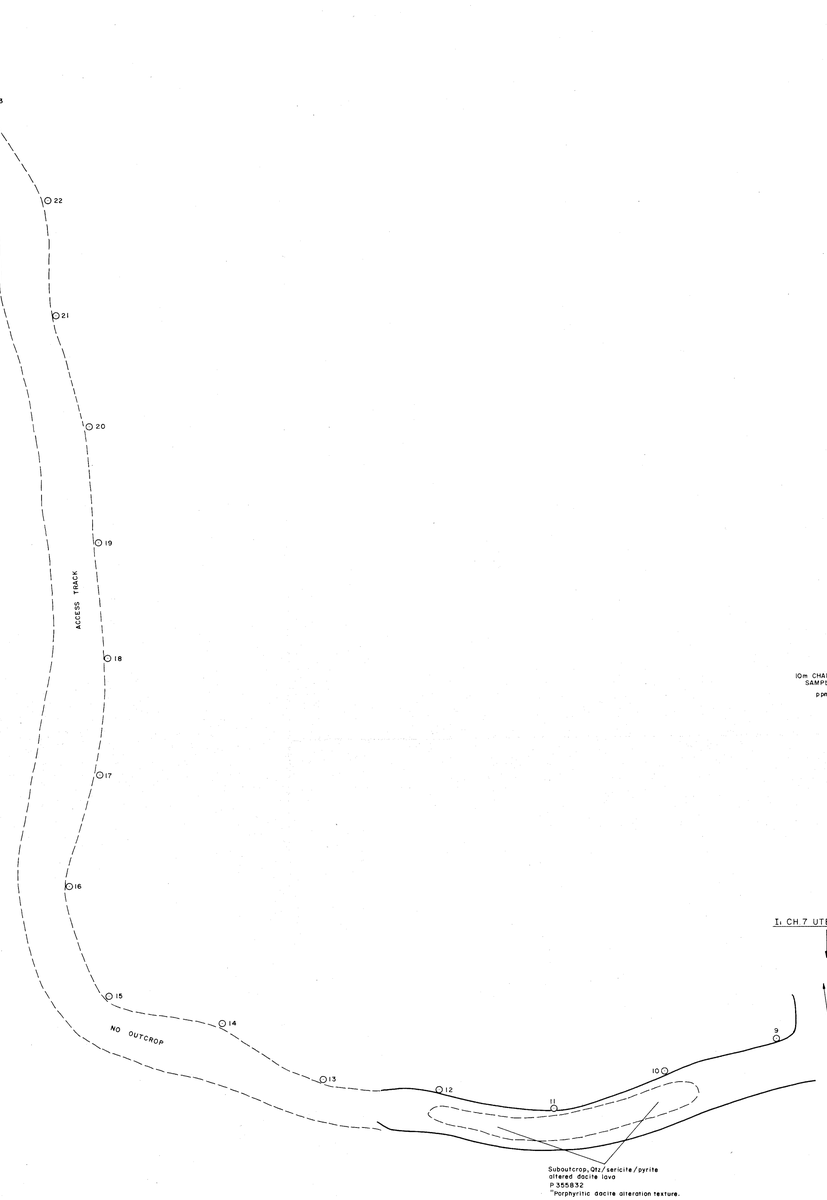
Compiled: AMH
Drawn: AMH
Traced: KJO
Checked:
Plate No: HT 47g

RMO 556

8540

4025E 4050E 4075E 4100E 4125E 4150E 4175E 4200E

5675 N
5650 N
5625 N
5600 N
5575 N



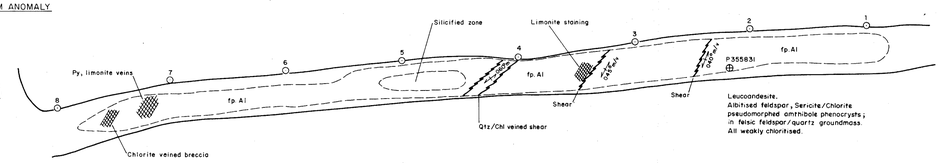
10m CHANNEL SAMPLES ppm

	377867	377868	377869	377870	377871	377872	377873
Cu	20	3	3	6	8	12	24
Pb	20	20	16	28	20	26	50
Zn	75	34	50	145	130	175	130
Ag	<1	<1	<1	<1	<1	<1	<1
As	60	34	8	55	22	20	30
Ba	155	540	250	330	140	370	220
Ni	4	4	<4	14	8	8	38
Cr	12	18	22	24	38	32	230
Ti	2150	2150	1750	1950	2150	2300	3200
Zr	155	170	170	170	165	200	175
Zr/Ti	0·072	0·079	0·097	0·087	0·077	0·087	0·055

ANALYSES IN PPM.
COMLABS JOB NO.
COM 860822

From P1 to P7 rock type is pale grey green, fine grained, sparsely feldsporphyric, non-vesicular well jointed lava (fp.A.l.) weathers to yellow/brown, white clay.
Chlorite common on joint planes.

CH 5 UTEM ANOMALY AT 4220E (SWAMP)



5 cm

599889

89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
GLC	8·86		

Location Code:

NORTH WEST TASMANIA
HATFIELD E.L.15/73
UTEM ZONE I: / 5600 N COSTEAN

Scale: 1: 250 | Date: July. 1986

Compiled: AMH
Drawn: AMH
Traced: TN
Checked:
Plate No: HAT 82

RMO 554

8541

4000 E | 4100 E | 4200 E | 4300 E | 4400 E | 4500 E | 4600 E | 4700 E | 4800 E

700 m RL

SURFACE

B.I.

HAT-6 7178.9N 4364.9E 707.6 m RL

B.I.

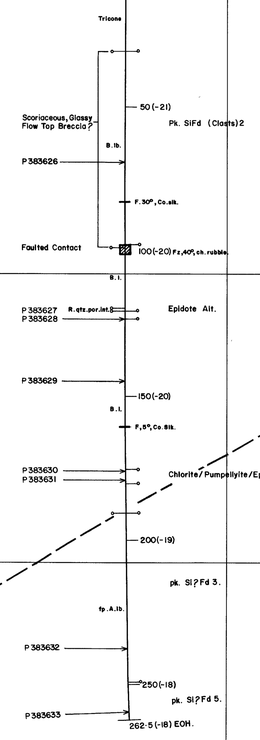
A?

600 m RL

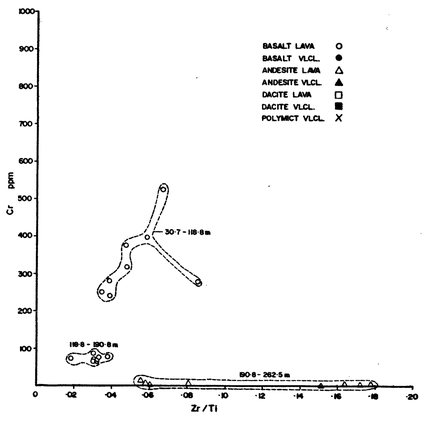
500 m RL

400 m RL

300 m RL



CORE GRINDS



5 cm

89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION
599890

REVISIONS				
Init.	Date	Init.	Date	

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
CROSS SECTION DDH HAT 6
7200 N

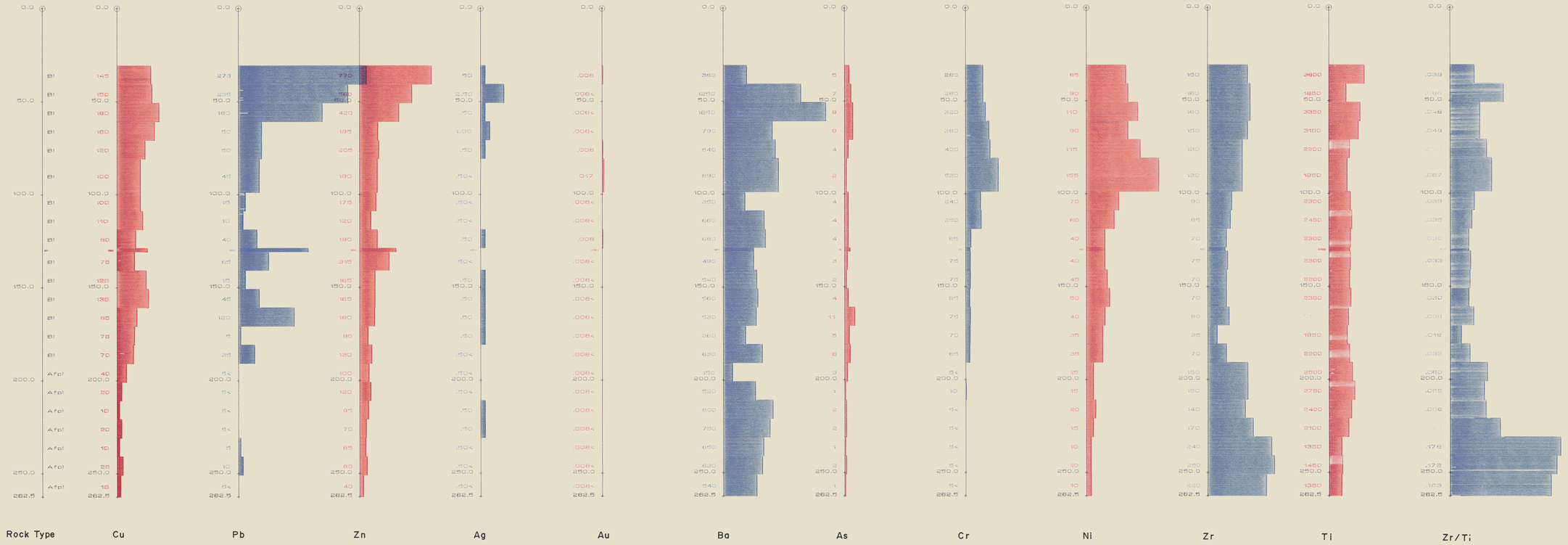
Location Code:

Scale: 1:1000 | Date: Oct' 1986.

Compiled: AMH
Drawn: AMH
Traced: BAN
Checked: AMH
Plate No: HAT 83

RMO 554

8542



89-3005

SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : HAT 6
CHECKED		
DESIGNED		DRAWING No. HAT 83A
DESIGN CKD		
DESIGN APP		REVISION 27 JULY, 1989
PROJECT APP		

599891

8544

4800N | 4700N | 4600N | 4500N | 4400N | 4300N

700mRL | 600mRL | 500mRL | 400mRL | 300mRL | 200mRL | 100mRL

Dol.

MC - 14
4548·2 N
2988·0 E
685·2 RL

bk. Sh. | Bv. | mic. Ss.

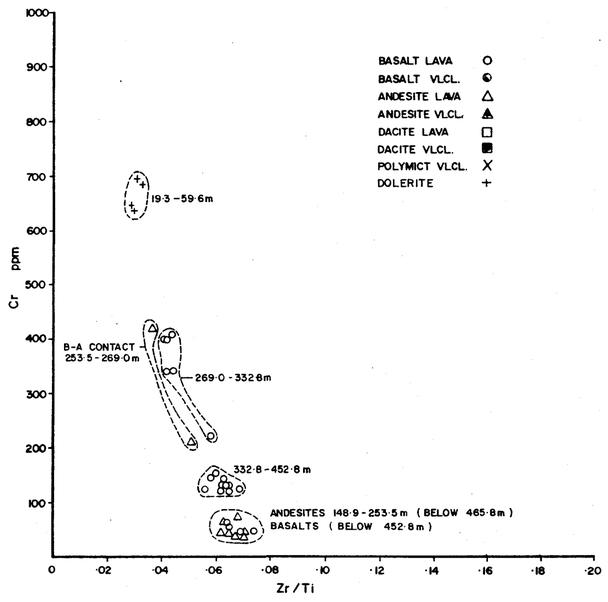
Tricone

Dolerite
F, Se.
P383601 → 50(-12)
P383602 →
P383603 → bk. Sh.
P383604 → Y. fly. / bk. Sh. / Y. f-m ly.
P383605 → bk. Sh. / Y. f-m ly.
100(-12)
bk. Sh.
P383606 →
150(-12)
pep. A. lb.
F, Co-Se-Py rub.
P383607 → Si? Fd 3
200(-12)
P383608 →
A. l.
Si? Fd 4
250(-12)
Si? Fd 3
F. Se. pug.
B. l.
P383609 →
Si? Fd alt. of Matrix Patchy Se. Co. alt of Fragments.
300(-12)
Si? Fd 3 (Se. Co)
P383610 →
F. Se. rub.
F. Se. rub.
Si? Fd 3
350(-13)
F. Se - Py pug.
F, Se Co pug.
B. lb.
F, Se pug.
F, Se pug.
Si? Fd 4
400(-13)
F, 20° fe rub.
Si? Fd 3
P383611 →
F, Se, Co pug.
450(-14)
Si? Fd 4
P383612 → fp. A. lb.
F, Se, rub.
P383613 → B. l.
Si? Fd 3
fp. A. l.
500(-14)
F, 10° Co rub.
Si? Fd 4
B. l.
2% dis. Py in Si Fd Zone Approaching Fault.
F, 10% Se Co pug.
fp. Al°
Si? Fd 5
529·7 (-15) EOH.

MT. CHARTER FAULT

CORE GRINDS

BASALT LAVA
BASALT VLCL.
ANDESITE LAVA
ANDESITE VLCL.
DACITE LAVA
DACITE VLCL.
POLYMICT VLCL.
DOLERITE



5 cm

599892
89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
AMHgic	27·1·87		

Location Code:

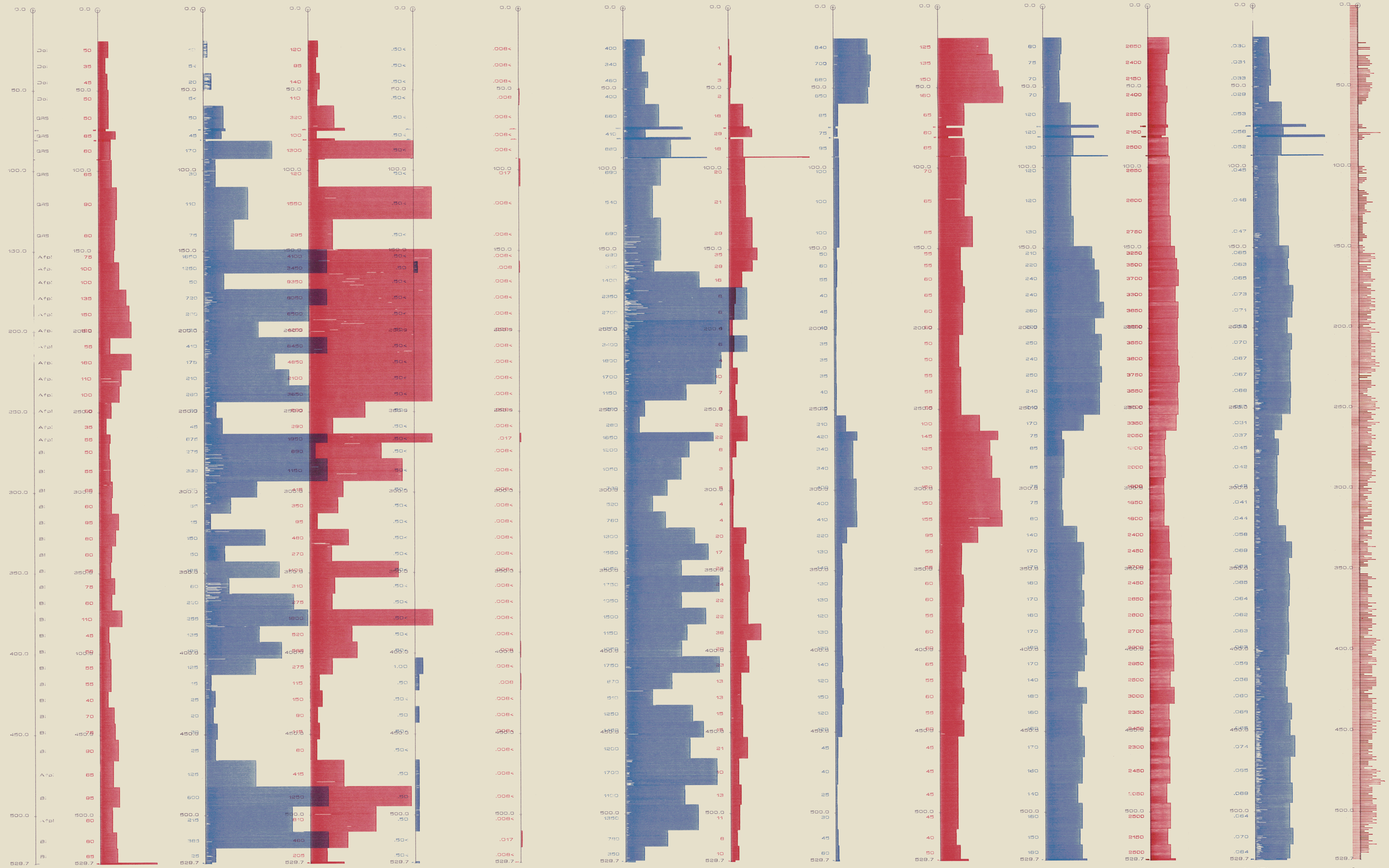
NORTH WEST TASMANIA
HATFIELD E.L. 15/73
CROSS SECTION MC14
3000 E

Scale: 1:1000 | Date: Oct' 1986.

Compiled: AMH
Drawn: AMH
Traced: BAN
Checked: AMH
Plate No: HAT 84

RMO 555

8543



599893

SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : MC 14
CHECKED		
DESIGNED		DRAWING No. HAT 84 A
DESIGN (2ND)		
DESIGN (3RD)		REVISION 30 JUNE, 1989
PROJECT APP.		

89-3005

8545

5774·6N
3078·6E
754·4 RL

MC 15 (+7)

A.l A.l.b

Do

bk. Sh

MT. CHARTER DOLERITE

QUE RIVER SHALE

bk.Sh

Se.Cl.Qtz.Py 4

P383634 → fp.A.l.b

P383635 → A.mi.v

P383636 →

Ab 4

P383637 → fp.A.l.b

50 (+6)

F ich. rbb

P 383638 → B.l., l.b

100 (+6)

P 383639 →

P383640,641 → ov, Bl

P383642 → A.f.l.v

P383643 →

Interpreted Hellyer Ore Position

Ab 3

F ich. ox. rbb

150 (+5)

P 383644 → fp.A.l., l.b

P 383645 →

P 383646 →

Ab 2

200 (+5)

P 383647 →

P 383648 →

250 (+5)

Ep 3

Bl

F Co. Se. rbb

F 0° Co.Se.rbb.pug

300 (+4)

F 0° Co.Se.pug.rbb

F Se. pug

F 0° Se. pug

350 (+4)

P 383649 → mic. Ss

P 383650 →

P 383651 → A.fp.l

Fd.Si

P 383652 →

P 383653 →

B.l

400 (+5)

P 383654 →

P 379351 →

F 20° Si - Cl. rbb. Co. pug

P 379352 → A.fp.l

F 30° Si - Cl. rbb. Co. pug

450 (+5)

Si. Fd. 3

P 379353 →

P 379354 → A.l (non fp)

Si. Se. Py 3 - 5 (Quellite)

P 379355 →

P 379356 → a.v

P 379357 → A.fp.l

P 379358 → D.l

500 (+6)

A.fp.l

P 379359 →

P 379360 → a.v.; A.f - m.lv

Se (Py) 2

P 379361 → B.l

550 (+6)

P 379362 → a.v.; A.f - m.lv

P 379363 →

P 379364 →

mic. Ss, Sil

606·3 (+4)
E.O.H.

QUE - HELLYER VOLCANICS

MICA SANDSTONE

CORE GRINDS

○ 116·0 - 120·5 m

BASALT LAVA ○
BASALT VLCL. ●
ANDESITE LAVA △
ANDESITE VLCL. ▲
DACITE LAVA □
DACITE VLCL. ■
POLYMICT VLCL. X
ASH VLCL. -|-

57·7 - 115·1 m

384·6 - 399·8m

+ 115·1 - 116·0m

407·0 - 491·5 m

359·7 - 378·9m

195·7 - 354·3m

10·4 - 57·7m
120·5 - 195·7m

497·2 - 518·1m

Cr ppm

1000 900 800 700 600 500 400 300 200 100

0 ·02 ·04 ·06 ·08 ·10 ·12 ·14 ·16 ·18 ·20

Zr / Ti

5 cm

89-3005

Note : Hole drilled to 407m for stratigraphic information by the Tas. Dept. of Mines.
Completed to 606·3m by Aberfoyle.

599894

Aberfoyle Resources Limited
EXPLORATION DIVISION

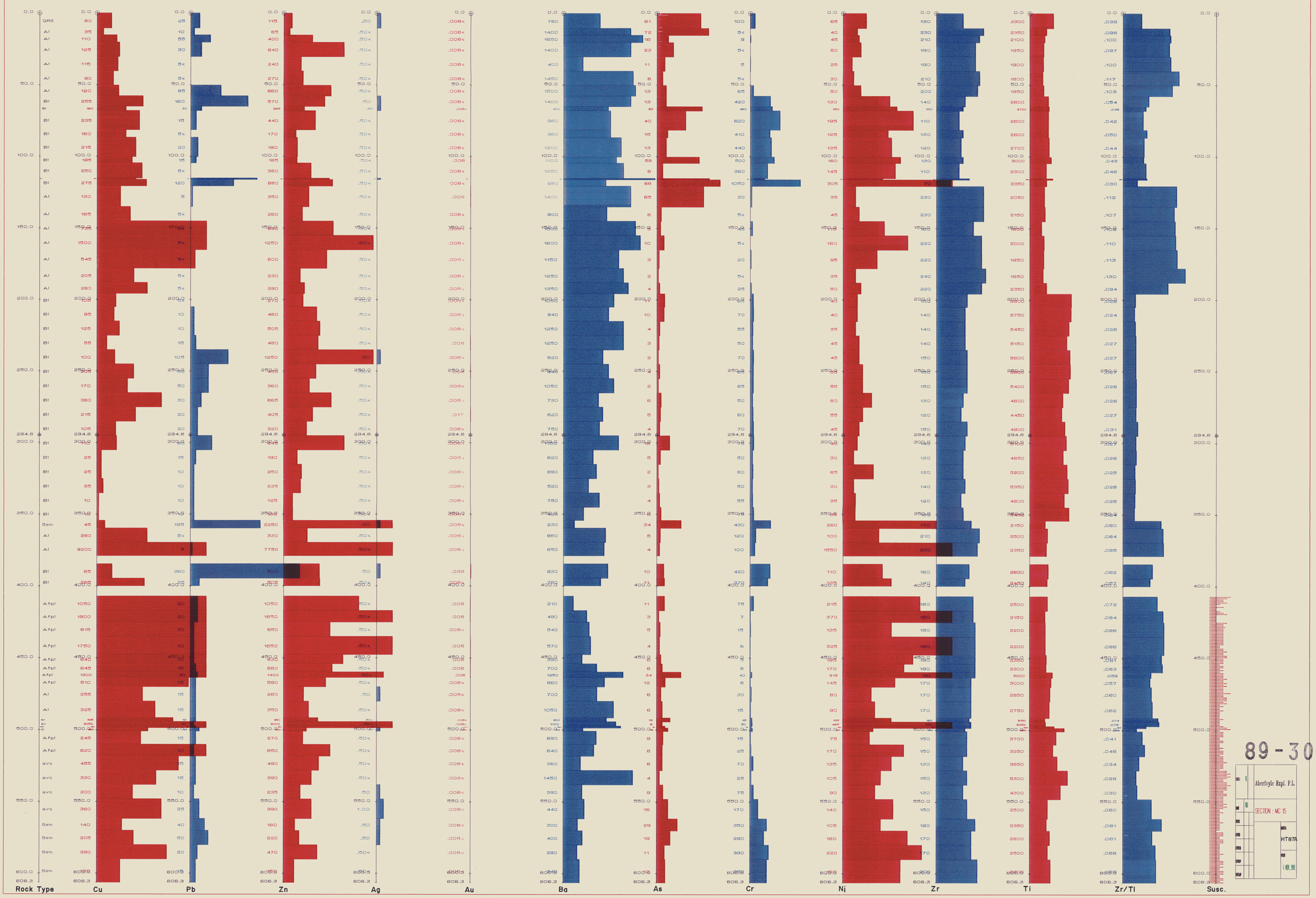
REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA
HATFIELD E.L.15/73
MC-15
Section on collar azimuth (111·6° Grid) looking Grid NE

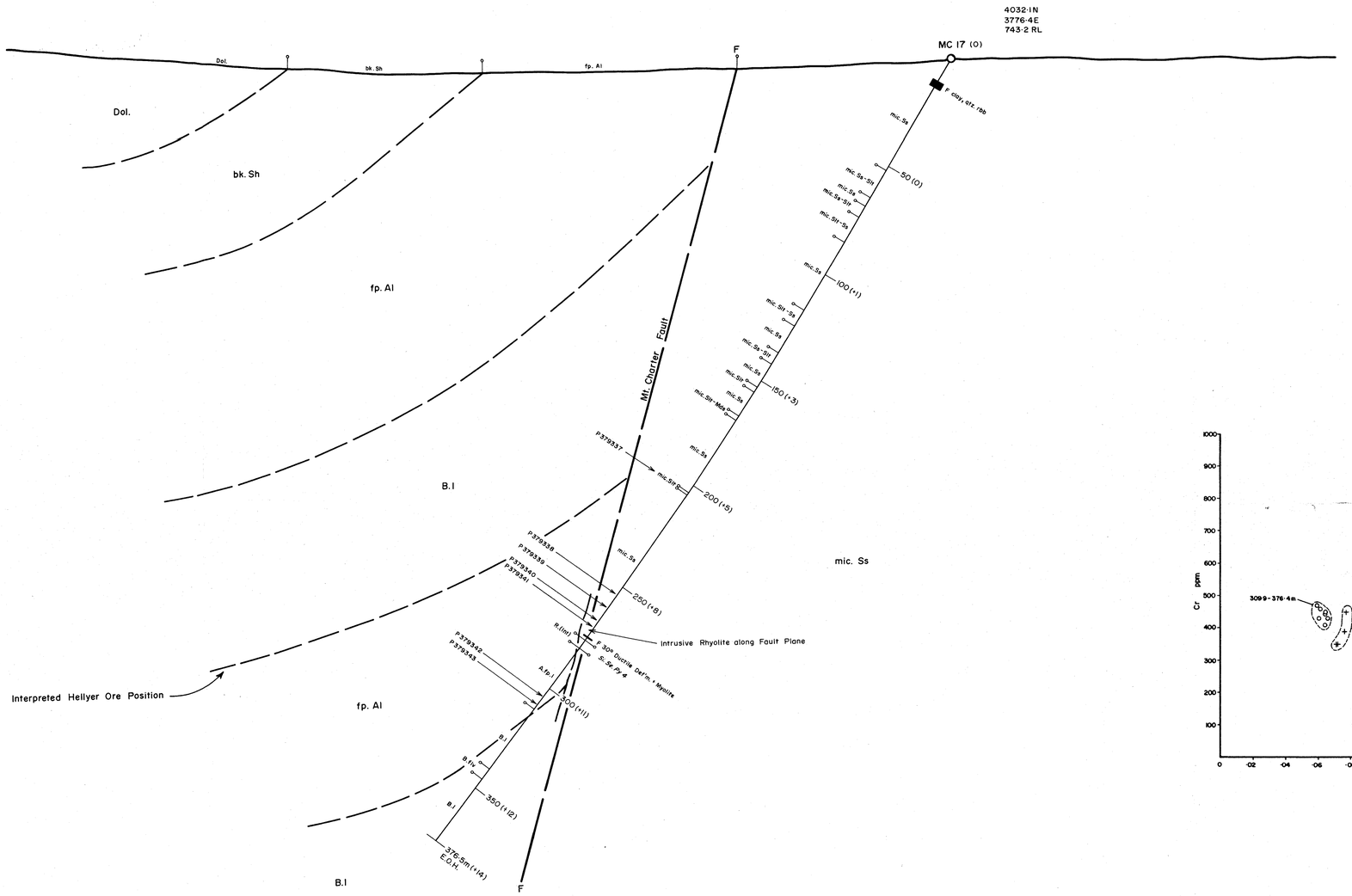
Location Code: K55/6/44 | Scale: 1:1000 | Date: March, 1987

Compiled: AMH
Drawn: AMH
Traced: GLC
Checked: AMH
Plate No: HT 87

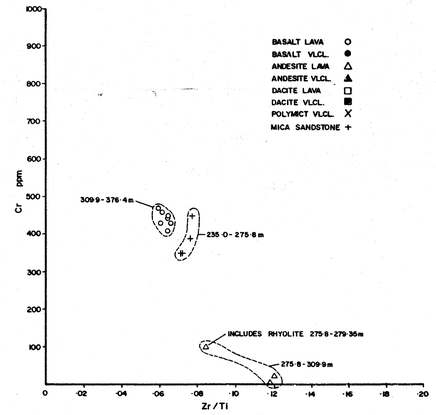
RMO 555


Rock Type
Cu
Pb
Zn
Ag
Au
Ba
As
Cr
Ni
Zr
Ti
Zr/Ti
Susc.
89-3005
Aberfoyle Expl. P.L.
SECTION : MC 15
HT87A
10.08

8547



CORE GRINDS



Note : Hole drilled by Tas. Dept. of Mines.

5 cm

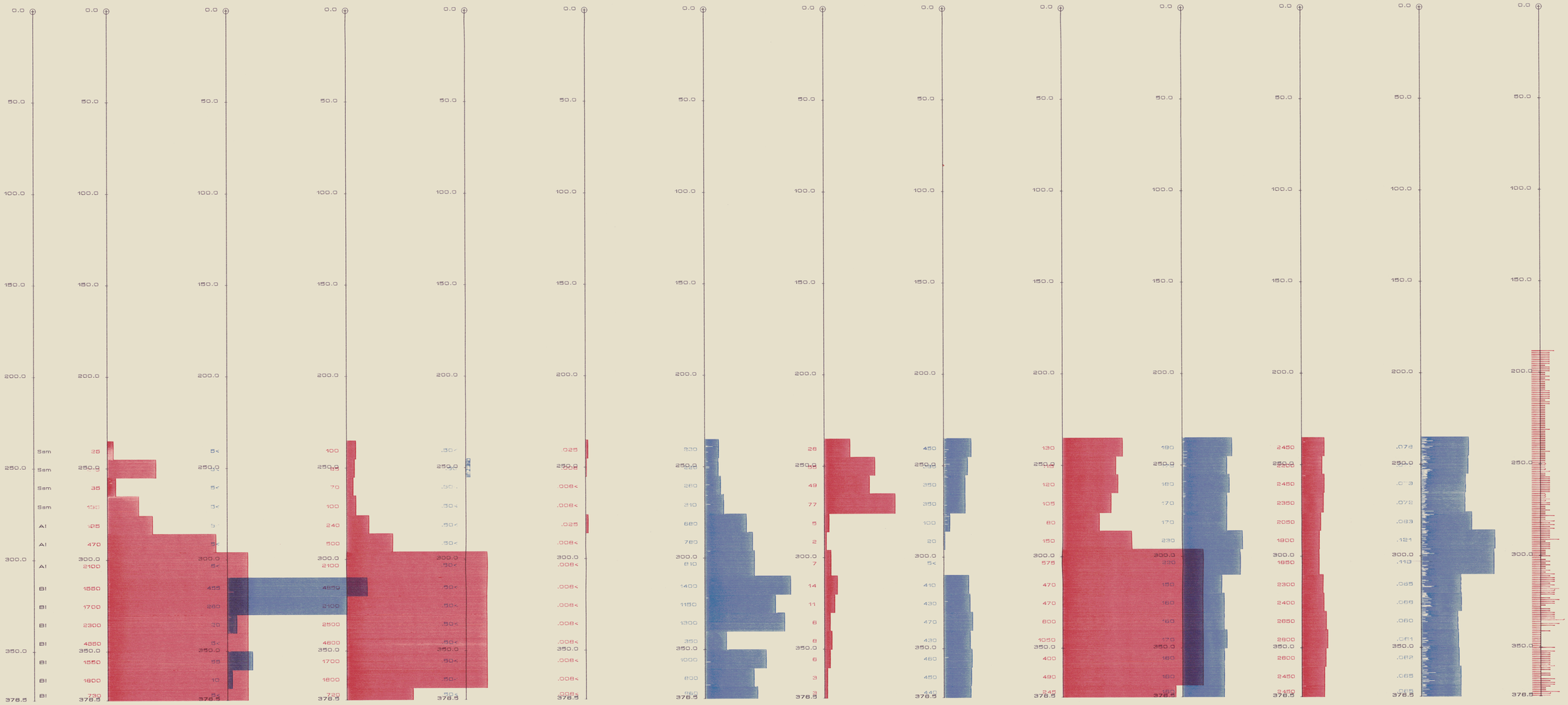
599896

89-3005

Aberfoyle Resources Limited EXPLORATION DIVISION		
REVISIONS (Init. / Date / Init. / Date)	NORTH WEST TASMANIA HATFIELD E.L.15/73 MC-17 Section on collar azimuth (334·7° Grid) looking Grid NE	Compiled: AMH Drawn: AMH Traced: GLC Checked: AMH
Location Code: K55/6/44	Scale: 1:1000 — Date: March, 1987	Plate No: HT 88

RMO 554

8548



599897

89-3005

SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN ADB		SECTION : MC 17
CHECKED		
DESIGNED		DRAWING No. HT 88A
DESIGN CKD		
DESIGN APP		REVISION 30 JUNE, 1989.
PROJECT APP		

8549

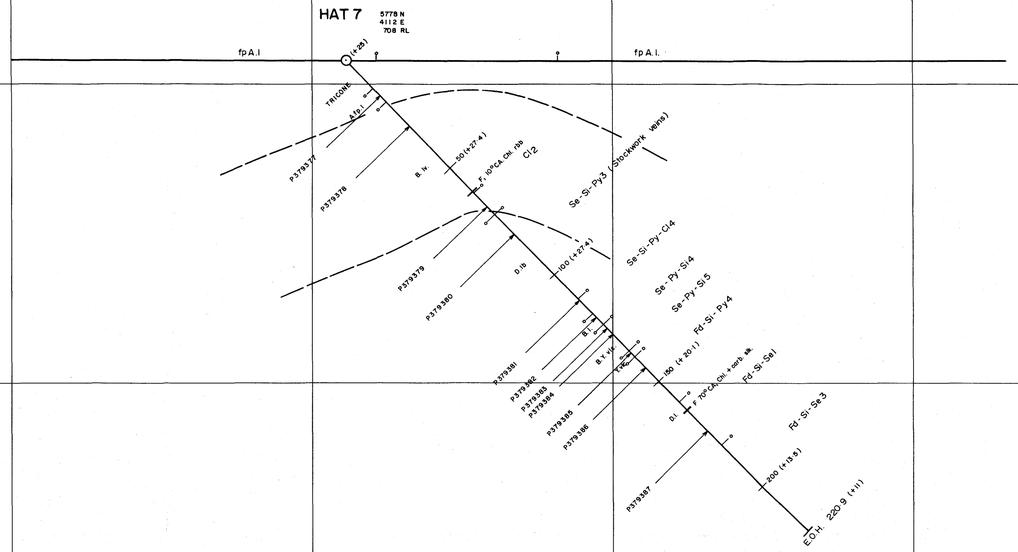
3900 E | 4000 E | 4100 E | 4200 E | 4300 E | 4400 E | 4500 E | 4600 E

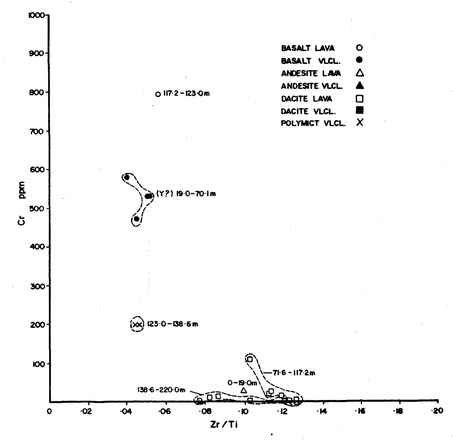
700 RL

600

500

400





5 cm

89-3005

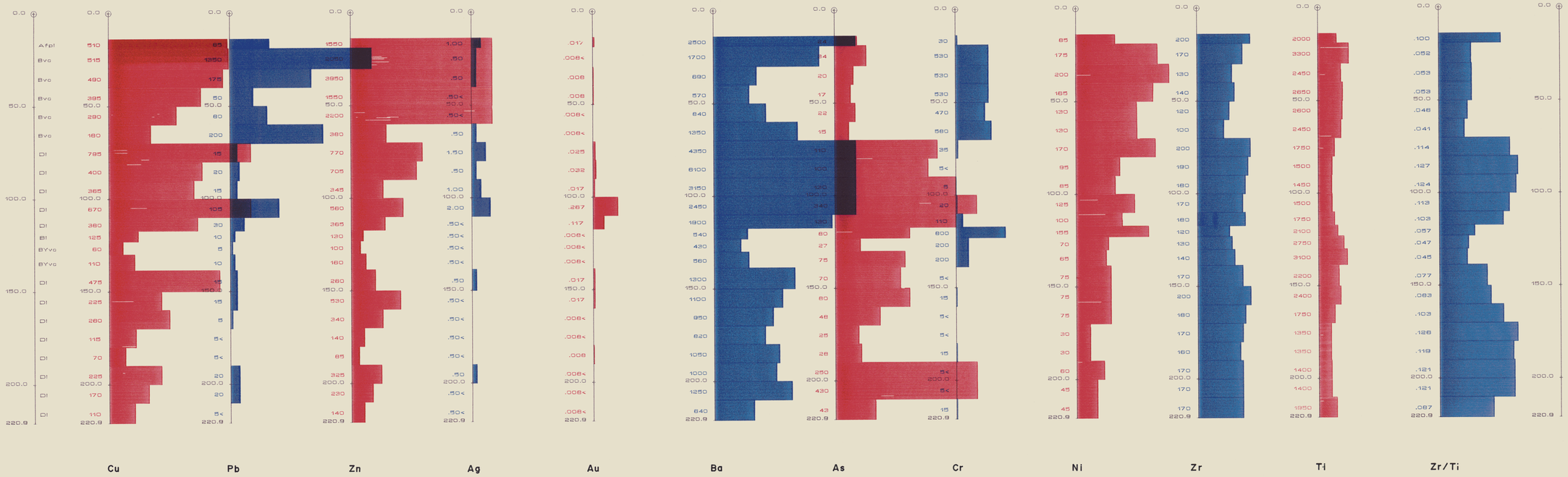
Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA
HATFIELD E.L. 15 / 73
CROSS SECTION DDH HAT 7
5750 N

Compiled :	A MH
Drawn :	A MH
Traced :	RJE
Checked :	
Plate No :	HAT. 90

Location Code : K55/6/44 | Scale : 1 : 1000 | Date : August, 1987



599899

89-3005

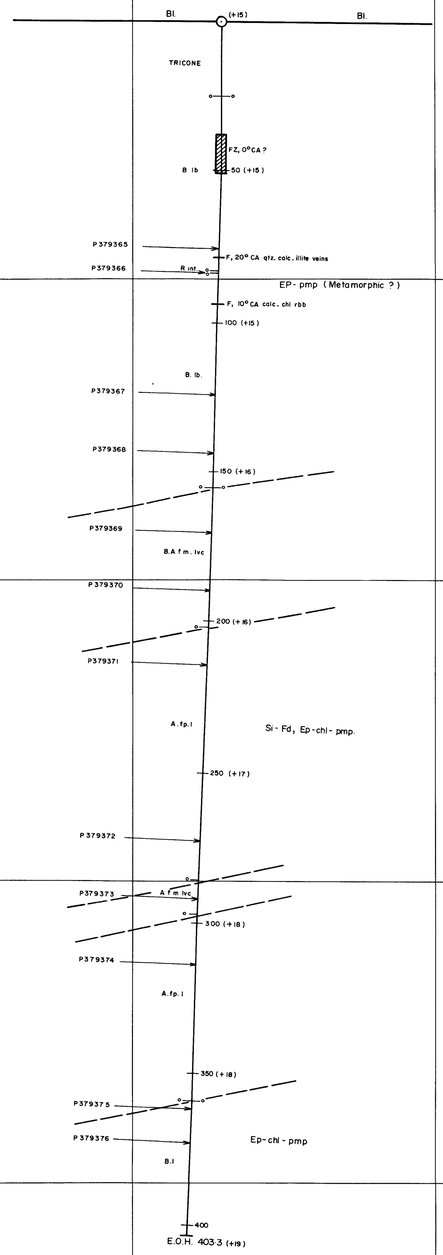
SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : HAT 7
CHECKED		
DESIGNED		DRAWING No. HAT 90A
DESIGN CKD		
DESIGN APP		REVISION 29 JUNE, 1989
PROJECT APP		

8551

3800 E | 3900 E | 4000 E | 4100 E | 4200 E | 4300 E | 4400 E | 4500 E

RL 700

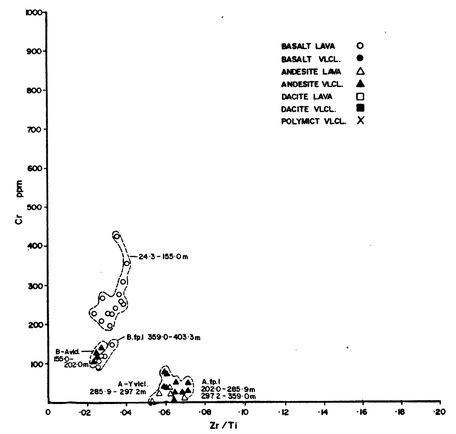
HAT 8 6715 N 4030 E 686 RL



600 | 500 | 400 | 300

RL 700 | 600 | 500 | 400 | 300

CORE GRINDS



599900

5 cm

89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

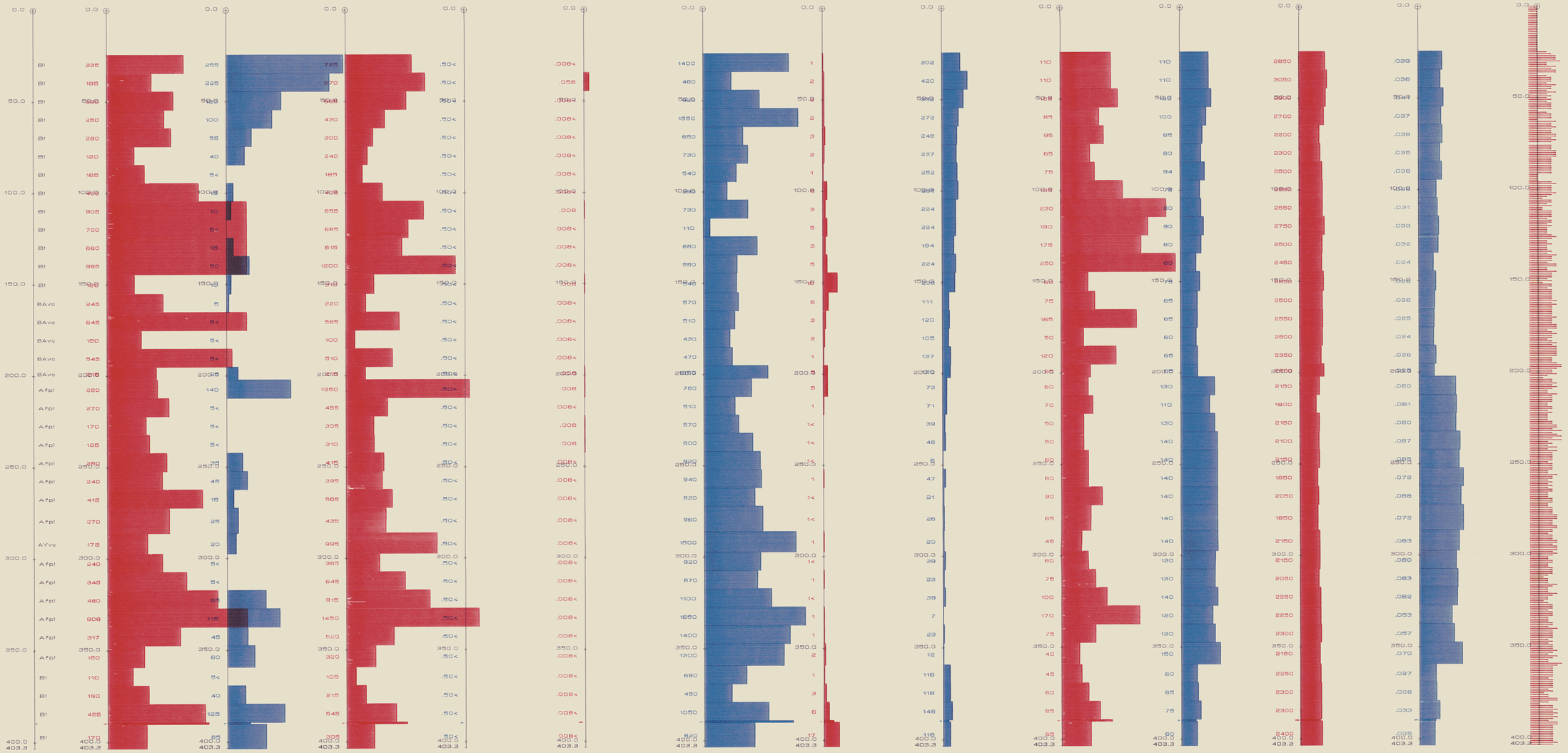
HATFIELD E.L. 15/73

CROSS SECTION DDH HAT 8

6700N

Location Code :	K55/6/44
Scale :	1 : 1000
Date :	August, 1987
Compiled :	AMH
Drawn :	AMH
Traced :	RJE
Checked :	
Plate No :	HAT 91

8552



599901

89-3005

SCALE 1:	1000	Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : HAT 8
CHECKED		
DESIGNED		DRAWING No. HAT 91A
DESIGN CKD		
DESIGN APP		REVISION 30 JUNE, 1989
PROJECT APP		

8553

3700E 3800E 3900E 4000E 4100E 4200E 4300E 4400E

RL 700

600

500

400

300

HAT 9 10196 N 3994 E 630 RL

bk. Sh (-4) B.I. bk.Sh Dol.

bk. Sh

P378359 F2, rbb + pug

B. lb

50 (-4)

P378360

B.I.

mic. Ss + mic Slt. Lt Y-fix

P378361,62 F, 0°CA, rbb healed with qtz. calc.

P378363,64 B.f.m. lv 100 (-3)

P378365

Fd-Si 5

A.fp 1

150 (-3) Fd - Si 4

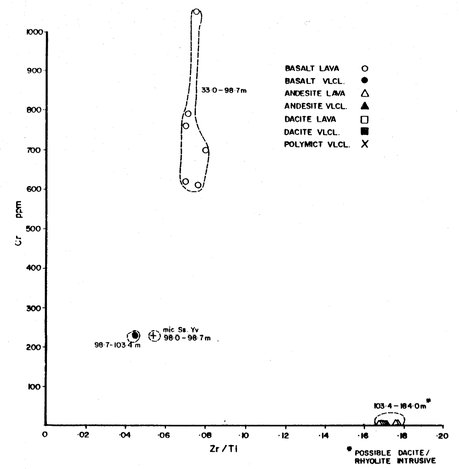
P378366

E.O.H. 184.5 (-3)

F?

F?

CORE GRINDS



599902

5 cm

89-3005

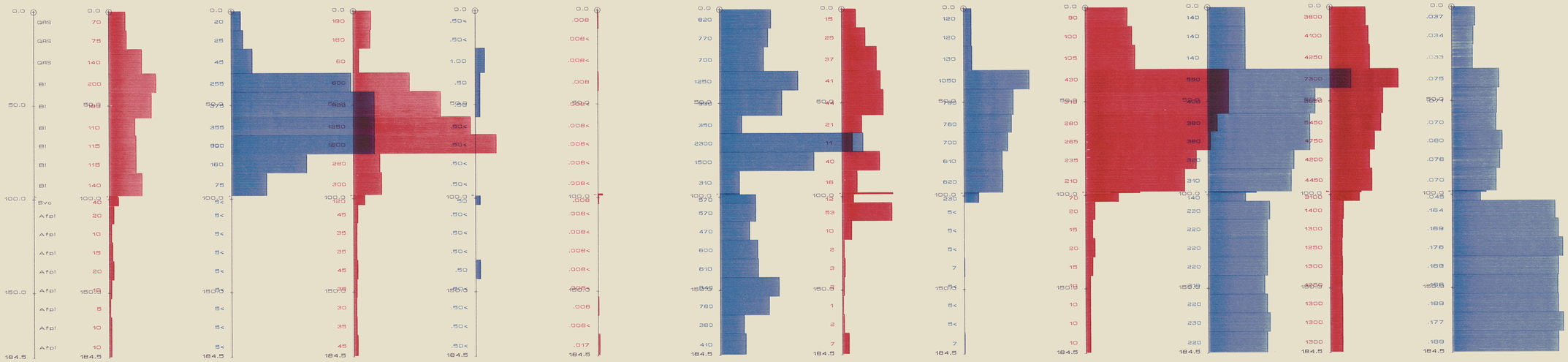
Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
CROSS SECTION DDH HAT 9
10200N

Location Code : K55/6/44
Scale : 1 : 1000
Date : August, 1987

Compiled : AMH
Drawn : AMH
Traced : RJE
Checked :
Plate No : HAT 92



599903

89-3005

SCALE 1: 1000		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : HAT 9
CHECKED		
DESIGNED		DRAWING No. HAT 92A
DESIGN CKD		
DESIGN APP		REVISION 29 JUNE, 1989
PROJECT APP		

8555

398 000 mE

14 000 mN

5401 000 mN

8000 mN

5396 000 mN

8000 mE

A F H Boundary

Cradle Mountain Link Road

E.L. 2/70

E.L. 15/73

CML 28M/86

CML 68M/84

Murchison Highway

Hellyer Portal

Que River Mine

Southwell River

TAILINGS DAM
- Mapping
- Soil geochemistry
- Ground magnetics
- UTEM
- Diamond drilling

11200 N
11000 N
10800 N
10600 N
10400 N
10200 N
3500E
4200E
4500E
5500E
MAC 10
HAT 9

WORK COMPLETED 1986-88
- GRIDDING
- DIAMOND DRILLING

A	21200 N	
B	14350 N	
C	7500 N	3400 E
D	6650 N	4600 E
	6200 S	

5 cm

599904

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init	Date	Init	Date

NORTH WEST TASMANIA
HATFIELD E.L. 15/73
Exploration Activity 1986-88

Location Code: K55/6/44 | Scale: 1:10,000 | Date: July, 1989

Compiled: AMcN
Drawn: AMcN JLR
Traced: RJE
Checked: AMcN
Plate No: HT 94 B

8556

387000 mE

395000 mE

8000 mE

5395000 mN

6000 mN

5390000 mN

2000 mN

Mine Access Road

Highway

Murchison

Mackintosh Lake

Que River Portal

△ The Shark's Fin

△ Mt. Charter

CML 68M 84

E.L. 15/73

E.L. 2/70

OLD MILL SITE
- Diamond drilling

I, ZONE
- Costeaning
- Soil geochemistry
- Diamond drilling

MT. CHARTER DOLERITE
- Costeaning
- Soil geochemistry
- Diamond drilling

SOUTH MT. CHARTER
- Diamond drilling

S.W. MT. CHARTER
- Diamond drilling

BOUNDARY PROSPECT

SOUTH HATFIELD GRID
- Mapping
- Soil geochemistry
- Ground magnetics
- UTEM

HAT 6, HAT 8, HAT 7, HAT 9

MC 1, MC 2, MC 3, MC 4, MC 5, MC 6, MC 8, MC 9, MC 10, MC 11, MC 12, MC 13, MC 14, MC 15, MC 16, MC 17, MC 18, MC 19

5300N, 4600N, 4200N, 3800N, 3600N, 3200N, 3100N, 2900N, 2600N, 2400N, 2200N, 2000N, 1800N, 1600N, 1400N, 1200N

2800E, 3500E, 4500E

WORK COMPLETED 1986-88

GRIDDING

DIAMOND DRILLING

5 cm

A	21200N	
B	14350N	
C	7500 N	0650N
D'	6200S	9400E

0600W

599905

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTH WEST TASMANIA

HATFIELD E.L. 15/73

Exploration Activity 1986-88

REVISIONS			
Init.	Date	Init.	Date

Location Code

Scale: 1:10,000

Date: July, 1989

Compiled AMcN

Drawn AMcN JLR

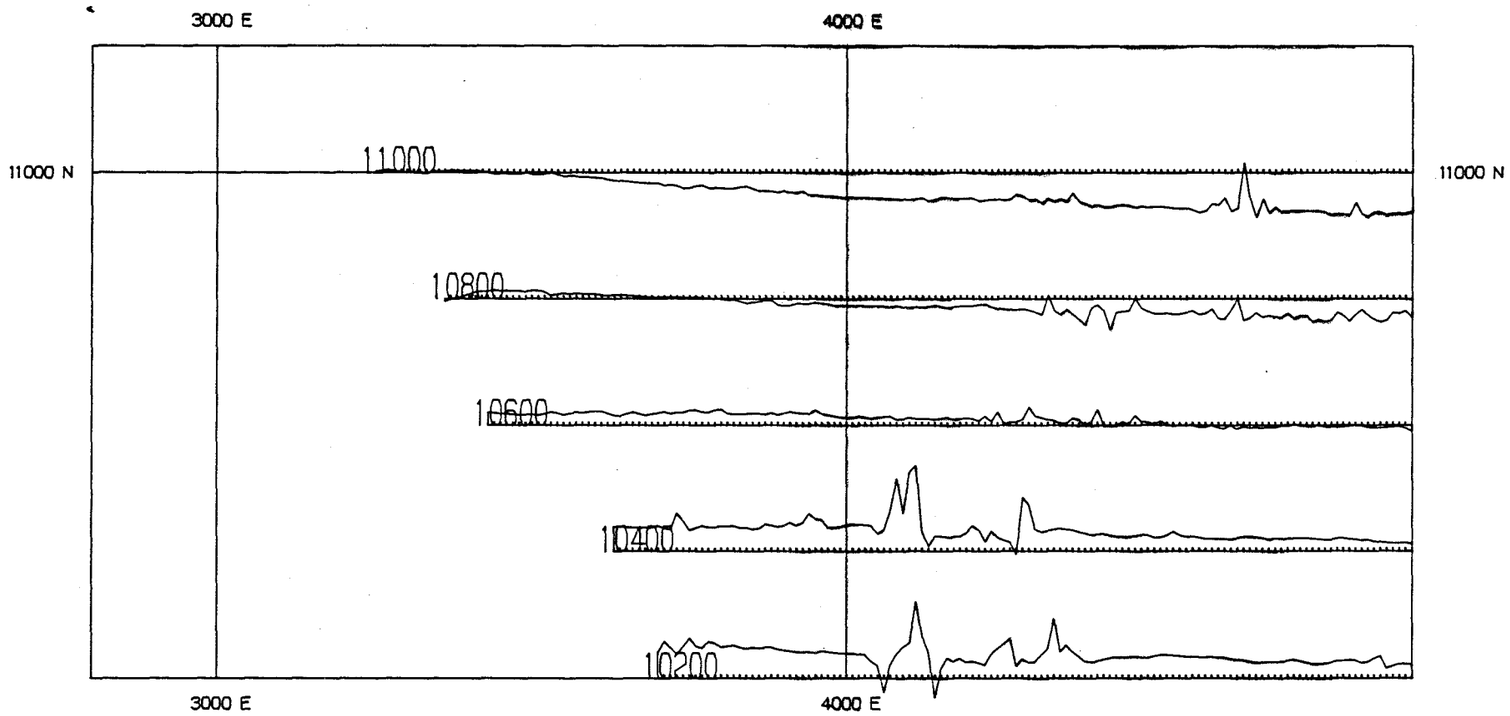
Traced JLR RJE

Checked AMcN

Plate No. HT 94 C

8557

TAILINGS DAM GRID



599906

5 cm

Vertical Scale 45 nT/cm
Base Level 0 nT

89-3005

200 0 200 400 600 metres

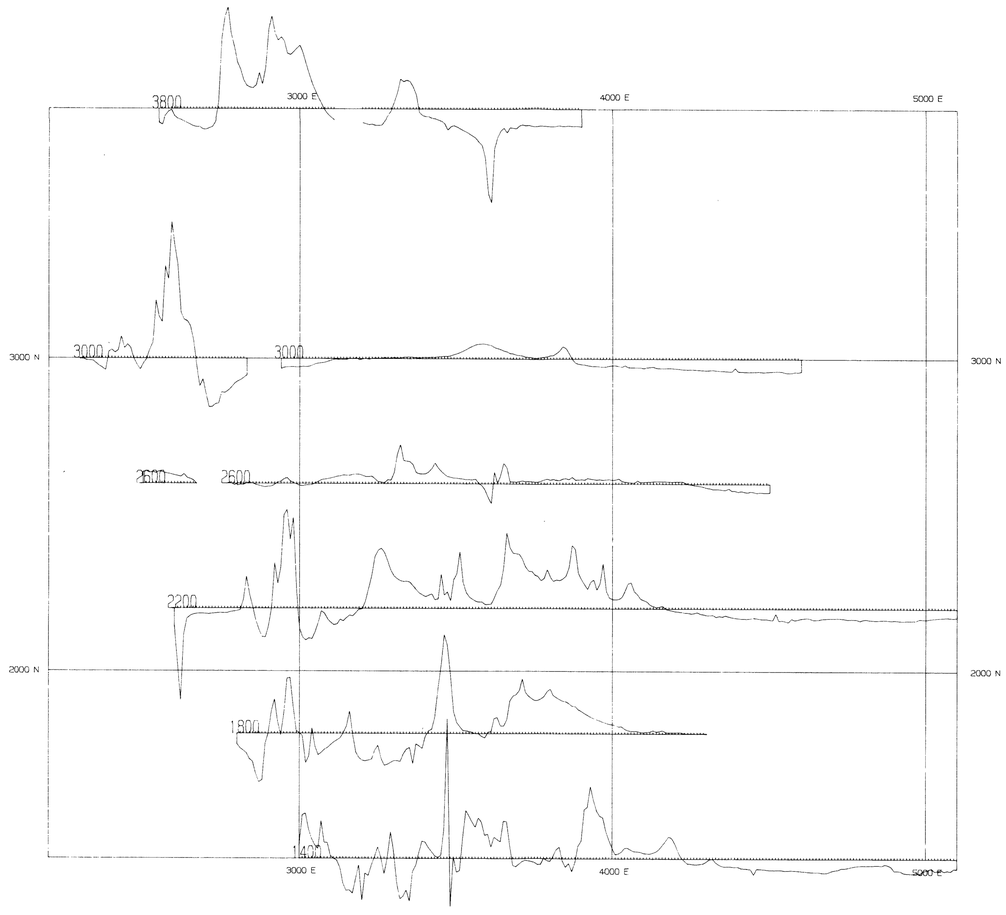
AUSTRALIAN MAP GRID

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

REVISIONS				TASMANIA = ''	Compiled:
Init.	Date	Init.	Date		Drawn:
				MACKINTOSH EL 15/73	Traced:
				GROUND MAGNETIC PROFILES	Checked:
Location Code:				Scale:10000 Date:	Plate No: HT 96

8558

HATFIELD AREA



VERTICAL SCALE 70 nT/cm
BASE LEVEL 150 nT

200 0 200 400 600 metres
AUSTRALIAN MAP GRID

5 cm

89-3005

599907

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

Location Code:

TASMANIA

MACKINTOSH EL 15/73

GROUND MAGNETIC PROFILES

Scale: 1:5000 | Date:

Compiled:
Drawn:
Traced:
Checked:
Plate No: HT 97

8559

Brambles' Yard

Substation

HAT 6

HAT 7

HAT 8

HEC Line

Edge of clearing

STATE RESERVE

MURCHISON HIGHWAY

For sheets A-V see QR81 series, Surface Geology

5 cm

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init	Date	Init	Date
TN	25-6-86		
AMH	1-9-86		
AMHglc	1-4-87		
AMHrje	20-9-87		
AMHjrje	13-9-88		

Location Code: K55/6/44

NORTH WEST TASMANIA

MACKINTOSH EL. 2/70 / HATFIELD EL. 15/73

OUTCROP GEOLOGY

Scale: 1:2500 | Date: August, 1985

Compiled: AMH
Drawn: AMH
Traced: ACD
Checked:
Plate No: Moc. 89/88

RMO 556

8560

MC1 MC2 MC3 MC4 MC5 MC6 MC8 MC9 MC10 MC11 MC12 MC14 MC15 MC16 MC17 MAC23

MACKINTOSH FAULT ZONE

BARRITE CREEK TRACK

SORDON HIGH ROAD

MT COASTER - SOUTH TRACK

H.E.C. LINE - EDGE OF CLEARING

Sheffield - Farrell Transmission Line

ZONE I/5700N COSTEAN

ZONE II/5700N COSTEAN

4300N/3200E COSTEAN

3300E/4800N COSTEAN

3400N/3600E COSTEAN

4550N/4400E COSTEAN

4600N/4400E COSTEAN

4800N/3900E COSTEAN

3000E/4425N COSTEAN

5500 N

5000 N

4500 N

4000 N

3500 N

4500 E

5000 E

3500E

3000 E

4000E

4500E

Note : MC-15, MC-16, MC-17 drilled by Dept. of Mines

599909

5 cm

89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTH WEST TASMANIA

MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73

OUTCROP GEOLOGY

REVISIONS			
Init	Date	Init	Date
AMH/jlc	8-5-85	AMH/jlc	13-9-88
AMH/jlc	24-6-85	AMH/jlc	14-12-88
AMH/mc	2-7-86	SWR/jlc	26-4-89
AMH	4-8-86		
AMH/jlc	29-9-86		
AMH/jlc	1-4-87		

Location Code	K55/6,44	Scale	1 2500
Date	April, 1986	Plate No	Mac 89/CC

Compiled AMH
Drawn AMH
Traced GLC
Checked AMH

RMC 556

8561

3500 N 3000 N 2500 N 2000 N 1500 N

4500 E 4000 E 3500 E 3000 E

Mic Ss

gy Mic Ss

Mic Ss (sbd)

sfd gn gy Mic Ss

gy Sh

rain forest

bn Ss? R ?

br-gn. ov. moss

br-gy Mic Ss

gy Mic Ss sbd. gy-bk. sh.

gy fp Jv. (dash h.)

gr-br. RDI fp mas.

fawn q. por R

Eux. vicl ?

pk. fp. gn. R

RD-Div. Eux. (chl. spt) fp.

RDI fp

Mic Ss

RDI fp. mas.

RDI fp/Lch 2

mtl. gn. RD-Rk. gl. Eux ?

mtl. gn. RDI fp

gy-Mic Ss/Q.vn (3)

br-gy m.g. Mic Ss

gy Mic Ss

gy Mic Ss m.g. fp

ANIMAL CREEK

inc Ss. mas

pk-br RDI fp. mas.

RDI. f-gp./Lch 4

pk RDI fp.

RDI. mas/Ser 2.

RDI. fp. mas

pk-bc Dl. fp. mas. ves. - dki. dthn. feromags.

gn-br RDI. fp. mas

gn Dl. fp. mas. (427342 P.)

RD. bv. fp (ov. + RDI. fr.)

RD. gl-v Eux ? fp

RDbv. (ov. + RDI fr)

gn-br RD-gl-v Eux ? fp

gn-br RDI. fp. mas

gy-rd. Dl. f-gp

pk-gn RD-Dl. fp. mas. ves.

RD-br. fp (ov. + RDI. fr.)

pk RDI. f-gp

(P.427345)

RDbv. Eux ? (pk RDI. fr.)

pk-kh. RDbv. f-gp. mas. Eux. ? / Qvn.

pk-kh. RD-Dvid. gl. Eux. ?

(P.427343)

RD. bv. fp (ov. + RDI. fr.)

gn. RD-Dl. fp-mas / Qvn.

vicl. Eux. / Ser. ov. 2

pk-gn. RDI.

sgt gn. D-RDI. fp. mas.

RDI. fp

pk-kh. RDbv. f-gp. Eux. ?

br-gn. RDI. fp

vicl. gl. Eux. ? fp

mtl. gn. RDI. fp.

Dl. fp. / Lch 4

gn-pk. vicl. gl. Eux. ?

shd. gy. felsite

gy-br bv. gl. (RDI. fr.)

gn. RD-Dl. fp. mas

gn-br. RDI. fp. mas

br-wht RD-Dl. f-sp / Sil 2

br-kh. RDI. fp. -mas

Rl.

Rl.

br-gn RDI

pk RDI. fp. ves. (427341 P.)

RDI.

pk-rd. RDI. f-sp

mtl. gn-pk. gl-v Eux. ? fp

gn-br. Dv. fp. (dk. spt. eux)

gy Mic Ss 379654 (P)

gn + pk. lava 379655 (P) (427868 P)

gy Mic Ss

Mic Ss (427867 P)

Mic Ss / Q vn. (1-2) (427866 P)

or. wth. soil

Mic. Ss

br-gy ov. / Lch 3-4 (427865 P)

gy soil

rainforest

gy Mic Ss

bd Mic Ss 379656 (P)

gy dv

boerg

stunted eucalypt fr

Shg. tea tree

br-gn. ov. moss

gy-br. ov. / Lch 3-4 (427865 P)

gy soil

Mic Ss ? 379707 (P)

gn. R. lv. pk fp (427872 P.)

gy-br. ov.

wh + gr. sed

or wth. R ?

br vlc. / ov 5 / Sa 2-3 (427862 P)

gn-br. Dlv. (427863 P)

gy. mas. ov.

RDI / Lch 3

RD-Dl. fp / Lch 3

RDI

pk-gn. RDI. fp. mas. (427320 P)

RDI. fp

gn-br RD-Dl. fp.

gn-gy. RDI fp.

pk-gn. RDv. Eux gl.

gn. R. l 379657 (P)

rd. R. l 379658 (P)

gn + rd. R. l.

rd R. l 379659 ?

gn-rd. RD-Rl. mas.

gn-pk RDI fp.

Dl. fp

pk-gn. RDI. fp. mas. (427320 P)

RDI

RDI / Lch 4

br-gn. ov. mas.

br-gn. ov. mas

Mic Ss ? 379708 (P) 379709 (G)

Mic Ss ? wth. white skin

gy soil

gy soil

gn-br RD-Dl. f-sp. dv.

rd-br. vlc. / Lch 4. Feos. stained

Rlw. q. + fp. eux. (427870 P)

gn-br. ov. 427874 P)

gn-br-ov. / shd.

gy. ov.

gn-gy. ov.

gn-gy ov. dv. / Q vn. (1-2) (427869 P)

gn-gy ov. mas. + dk. gy. ov. wk. shd. / Se 2 / Q vn. (1-3) (427870 P)

ov / Lch 3

gn-RD-Dl. fp. f-ov

dk. gy-gn. ov., wk. shd. ibd. gn. ov. (427871 P)

ov.

gy-br. ov.

gy-br. ov.

gn-br RD-Dl. f-sp. dv.

RDI / Lch 2

f-sp. RDI

RDI. fp. / Lch 2

gn-br. Eux. vicl. fp.

RDI. fp / Lch 2

RDI. fp / Q vn.

pk-rd. RD-Rl. f-sp. mas. (427320 P.)

pk-rd. RDI.

RDI. fp. / Lch 2

RDI / Lch 2

RDI. + Eux. vein

RDI.

pk-rd. RD-Rl. fp.

RDI.

sr-bn. RDI. fp / Lch 3

pk-rd. RD-Rl.

gy soil

br-gn. RDI. fp / Lch 2

gn-br. RDI. fp.

(427524 P)

(427523 P)

pk-Rl. f-sp.

pk-gn. RD-Dl. fp.

gn-pk. vic. q + fp. / Lch 4

RDI. fp.

RDI. + gn. Al. fp.

gn-br. RD-Rl. fp.

gn-br RD-Dl. f-sp / Qvn. (427322 P)

pk-RDI.

RDI

RDI. fp

pk-gn. RDv. Eux gl.

gn. R. l 379657 (P)

rd. R. l 379658 (P)

gn + rd. R. l.

rd R. l 379659 ?

gn-rd. RD-Rl. mas.

gn-pk RDI fp.

pk-gn. RDI. fp. mas. (427320 P)

RDI

RDI / Lch 3 Fecs. stained + Mn stain.

pk-rd. RDI.

RDI.

(427524 P)

pk-gr. RDI. fp.

(427523 P)

pk-Rl. f-sp.

RDI.

pk-gn. RD-Dl. fp.

gn-pk. vic. q + fp. / Lch 4

RDI. fp.

RDI. + gn. Al. fp.

gn-br. RD-Rl. fp.

gn-br RD-Dl. f-sp / Qvn. (427322 P)

pk-RDI.

RDI

RDI. fp

pk-gn. RDv. Eux gl.

gn. R. l 379657 (P)

rd. R. l 379658 (P)

gn + rd. R. l.

rd R. l 379659 ?

gn-rd. RD-Rl. mas.

gn-pk RDI fp.

Dl. fp

JOINS SHEET MM

JOINS SHEET PP

JOINS SHEET VV

3000 E
2500 E
2000 E
1500 E
3500 N
3000 N
2500 N
2000 N
387000 mE
384000m E
MACKINTOSH
HATFIELD
5 cm

Aberfoyle Resources Limited EXPLORATION DIVISION		599911
REVISIONS Init. Date Init. Date LMH 5-9-86 DJJ/gjc 12-11-86 RJE 11/87 LMH/rp 24-2-88	NORTH WEST TASMANIA MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73 OUTCROP GEOLOGY	Compiled: DJJ Drawn: DJJ Traced: JB Checked:
Location Code: K55/6/44	Scale: 1:2500 Date: JULY 1986	Plate No: Mac. 89/NW

RMO 556

8563

JOINS SHEET TT

JOINS SHEET MM

1500N 1000N 500N 00 500S

4500 E 4000 E 3500 E 3000 E

SW SECTION NW SECTION

gy soil

Mic Ss ?
379708 (P)
379709 (G)

gy soil with white skin Mic Ss ?

RDI/Lch 3

gy-bk RDI fp ch spt

RDI

RDI fp/Lch 3

gy-pk RD-Rl fp

RDI/Lch 3

RD-Rl

gy-pk RDI fp ch spt

pk-gn RD-Ck fp dy (427317 P)

pk - RDI (427316 P)

RDI

pk-gn R-RDI f+ep (427319 P)

RDI

pk-gn RDI

RDI

RDI fp mos /Lch 3

Elux vkd (427318 P)

pk-gn RDI fp ch spt

RD - Rl / Qvn

RDI

pk-gr Q++fp RDI mos / Sil (2)

gn-gk fp DJ

5 cm

89-3005

Aberfoyle Resources Limited EXPLORATION DIVISION				599912
REVISIONS				NORTH WEST TASMANIA
Init.	Date	Init.	Date	MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73
AMcIntyre	13.9.88			OUTCROP GEOLOGY
AMcIntyre	20.1.89			
Location Code: K55/6 A14				Scale: 1:2500 Date: February, 1987

Compiled: DJJ
Drawn: DJJ
Traced: RJE
Checked:
Plate No: MACB9/UU

RMO 556

11500 N
11000 N
10500 N
10000 N
9500 N
4500 E
4000 E
3500 E
3000 E
MAC IO
MAC5
HAT 9
Que River
Que River
Rd TB soil
red brn soil
red soil, Qal. float
bk sh
5 cm

89-3005

Aberfoyle Resources Limited		599913
EXPLORATION DIVISION		
NORTH WEST TASMANIA		
MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73		
OUTCROP GEOLOGY		
Location Code: K55/6/44	Scale: 1:2500	Date: May, 1987

REVISIONS			
Init.	Date	Init.	Date
AMcN/jr	7 4 88		
AMcN/jr	4 1 89		

Compiled	A M H
Drawn	A M H
Traced	R J E
Checked	
Plate No: Mac 89/ YY	

RMO 556

8565

11500 N | 11000 N | 10500 N | 10000 N | 9500 N

3000 E
2500 E
2000 E
1500 E

Q-Mic Ss
Abundant q.v.
gn. Q Mic Ss
lbd. gn-gy Q-Mic Ss, Slt
gn. Q-Mic Ss/ox 2 minor q.v.
Q-Mic Ss/ox 2
Q-Mic Ss/ox 4
bk. sh. ox 4
bk. sh. strongly bleached and q. veined
bk. sh. mod. bleaching
lbd. yw. bn. Q-Mic Ss, Slt/ox 4 no q.v.
gn. gy Q Mic Ss bleached strong sh. ox
lbd. gy bn. Q Mic Ss, Slt/ox 2-4
bk. sh. minor bleaching
lbd. yw. bn. Q Mic Ss, Slt/ox 3
gy. bk. Sh. bleached
bk. Sh.
red soil, Dol. floor.
bk. Sh. Patchy bleaching some Qtz. veining
gy bk. Sh. bleached
gy bk. Sh. bleached, grd. veined
P383623
lt. gy to yw. bn Q. Mic. Ss/ox 2-3 minor q.v.
gy-gn. mic. Ss. mmc. Cg. gn/lt. lbd
gn-gy mic. Ss/Q+Coarse/lbd
lgt. gn-gy mic. Ss/ox 3-4 lt/bl gy-bl. Sh
gy-gn. Q Mic Ss
P383624
lt. gy. Q Mic Ss bleached. Patchy qtz. veining
lbd. lt. gy Q Mic Ss, Slt bleached, qtz. veined
gy-bk. sh. + mic. Ss/sbd
gy-gn. Q Mic Ss
gy-lt. gy mic Ss/Lch 2-5
sh. gy Q Mic Ss
lbd. gn. gy Q Mic Ss, Slt.
gy Mic Ss
among q.v. in Q Mic. Ss
lbd Q Mic. Ss, Slt/ox 3-4
yw. bn Q Mic Ss/ox 3 minor q.v.
lbd. gy, gn Q Mic Ss, Slt.
TERTIARY BASALT
EDGE OF CLEARING
CRADLE MT. LINK RD. UNDER CONSTRUCTION
MURCHISON HIGHWAY
lbd. Q Mic Ss, Slt ox 2
gy Q Mic Ss/ox 3 str. vein
lbd. Q-Mic Ss, Slt. /ox 2
gy Q-Mic Ss/ox 3
lbd. Q-Mic Ss, Slt.
gy Q-Mic Ss/ox 3

670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000 1010 1020 1030 1040 1050 1060

8566

000
2500E
5000E
7500E
13000N
E.L. 15/73
E.L. 2/70
Proprietary Cradle Mountain Line Road
MURCHISON HIGHWAY
H.E.C. Power Line
Hellyer Offices
90M/84
4900E
6000E
6700E
10500N
4000E
2900E
3600E
3850E
10000N
5500E
Portal
HL80
88M/84
MAC4
99M/84
Southwell River
9500N
HAT 5
DA3
87M/84
MAC5
86M/84
DA2
DA4
MAC1
MAC2
9000N
DA1
MAC3
3400E
DA5
7500E
8500N
4200E
6400E
109M/84
3300E
MAC6
cml 68M/84
8000N
HAT 3
HAT 4
QUE RIVER
6000E
A 21200 N
B 14350 N
C 7500 N
D 0650 N
6200 S
0600 W
9400 E
5 cm

Aberfoyle Resources Limited
EXPLORATION DIVISION
599915

REVISIONS			
Init.	Date	Init.	Date
GLC	22-6-86		

NORTH WEST TASMANIA
MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73
UTEM and EM 37 coverage

Compiled: A.M.H.
Drawn: L.M.L.
Traced: L.M.L.
Checked:
Plate No: MAC 1138

Location Code: K55/6/44 | Scale: 1:10 000 | Date: June, 1986

RMO 556

856

000

2500E

5000E

7500E

MAIN QUE RIVER SHAFT

7000N

6500N

6000N

5500N

5000N

4500N

4000N

3500 N

3000N

2500N

2000N

1500N

1000N

4500E

4000E

3700E

6400E

6000E

5300E

6300E

4900E

HAT 1

HAT 2

MC13

MC11

MC12

MC4

MC1

MC3

MC2

MC7,8

MC6

MC10

MC9

3200E

3800E

2800E

3500E

Mt. Charter

H.E.C. Power Lines

HIGHWAY

MURCHISON

CML 68M/64

LAKE MACKINTOSH

E.L. 2/70

E.L. 15 73

5 cm

A	21200 N
B	14350 N
C	7500 N
D	0650 N
	6200 S

0650 W

5400 E

89-3005

Aberfoyle Resources Limited
EXPLORATION DIVISION

599916

REVISIONS			
Init	Date	Init	Date
GLC	22-6-86		
RJE	2-9-87		

NORTH WEST TASMANIA

MACKINTOSH E.L. 2/70 / HATFIELD E.L. 15/73

UTEM and EM 37 coverage

Location Code K55/6/44 | Scale: 1:10 000 | Date: June, 1986

Compiled A.M.H.
Drawn L.M.L.
Traced L.M.L.
Checked:
Plate No MAC 113C

RMO 556

8568

4000E 4100E 4200E 4300E 4400E

RL 700

600

500

400

300

200

100

MAC 10 10641 N 4165 E 632 RL

QUE RIVER

bk. Sh (-8) bk. Sh F ? bk. Sh Dol

F, Sh. rbb. healed with qtz./carb.

50 (-7)

bk. Sh

100 (-6)

P396701

150 (-4)

P396702 B. pl

200 (-2)

P396703 D. int B. pl

P396704 D. int

F qtz./carb. pug

B. l

250 (0)

F, 0° To CA, qtz/carb. veining

A. fp. lb

P396705 300 (+2)

F, 45° To CA, Se pug

P396706 A. fp. l

P396707

350 (+4)

P396708 B. l

P396709 A. fp. lb

P396710 400 (+6)

P396711 A. fp. l

P396712

P396713 mic. Ss + bk. Sh + bk. Sh. bx 450 (+7)

P396714 A. fp. lb

F, 25° To CA, carb + pug.

bk. Sh. bx A. fp. lb

mic. Ss + bk. Sh + bk. Sh. bx

P396715 A. Y. mix. 500 (+7)

P396716 mic. Ss + bk. Sh. + bk. Sh. bx

bk. Sh

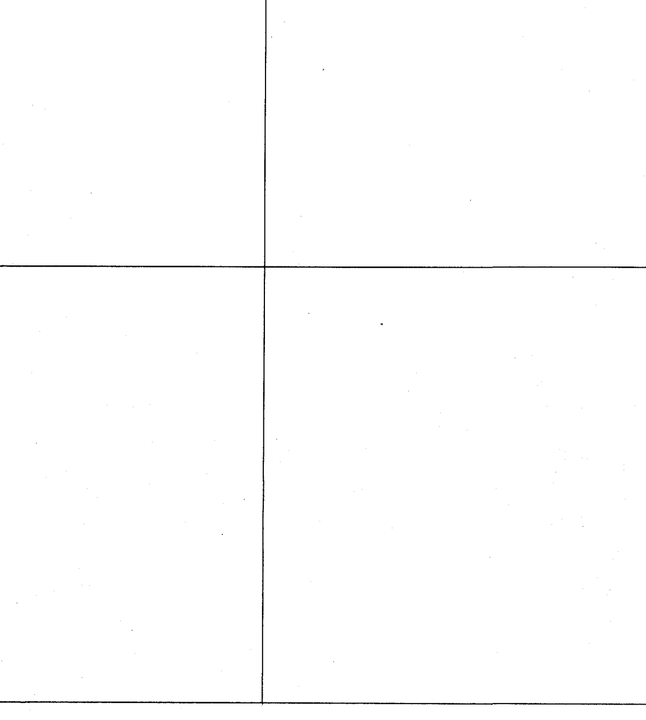
P396717

FZ, 10° To CA, Sh. rbb. healed with qtz./carb.

E.O.H. 529.6 (+8)

F?

CORE GRINDS



5 cm

89-3005

Aberfoyle Resources Limited 599917
EXPLORATION DIVISION

REVISIONS			
Init.	Date	init.	Date

NORTH WEST TASMANIA

MACKINTOSH E.L. 2/70

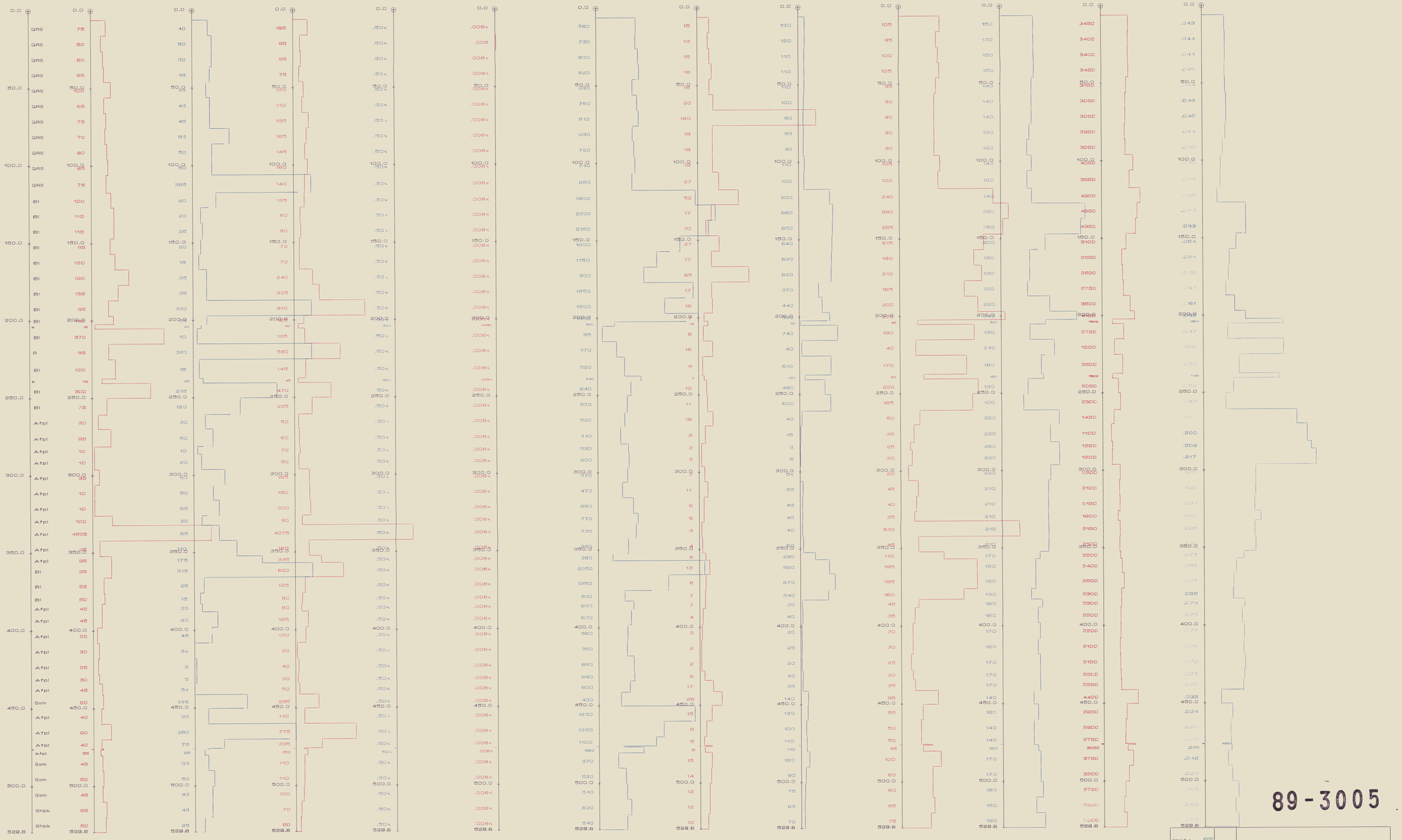
CROSS SECTION DDH MAC 10

10650N

Location Code : K55/6/44 | Scale : 1:1000 | Date : August, 1987

Compiled : AMH
Drawn : AMH
Traced : RJE
Checked :
Plate No : MAC 162

n 8569



89-3005

SCALE 1: 1000 Zr/Ti		Aberfoyle Expl. P.L.
DRAWN	ADB	SECTION : MAC10
CHECKED		
DESIGNED		DRAWING No. MAC 162 A
DESIGN CKD		
DESIGN APP.		REVISION 28 JULY, 1989
PROJECT APP.		

599918

8570

4400E

4500E

4600E

4700E

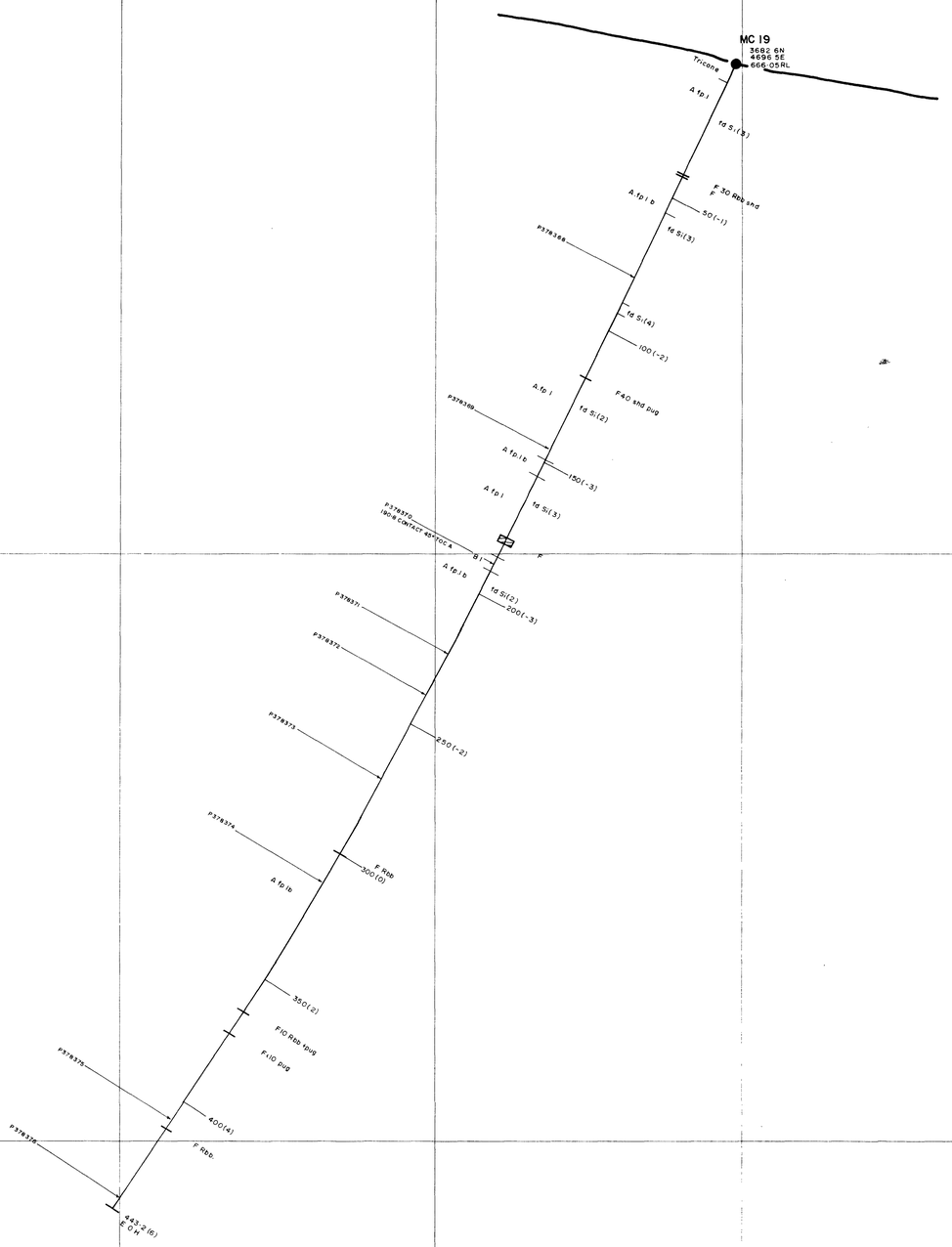
700 RL

600

500

400

300



5 cm

599919

89-3005]

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

NORTH WEST TASMANIA

MACKINTOSH E.L. 106/87

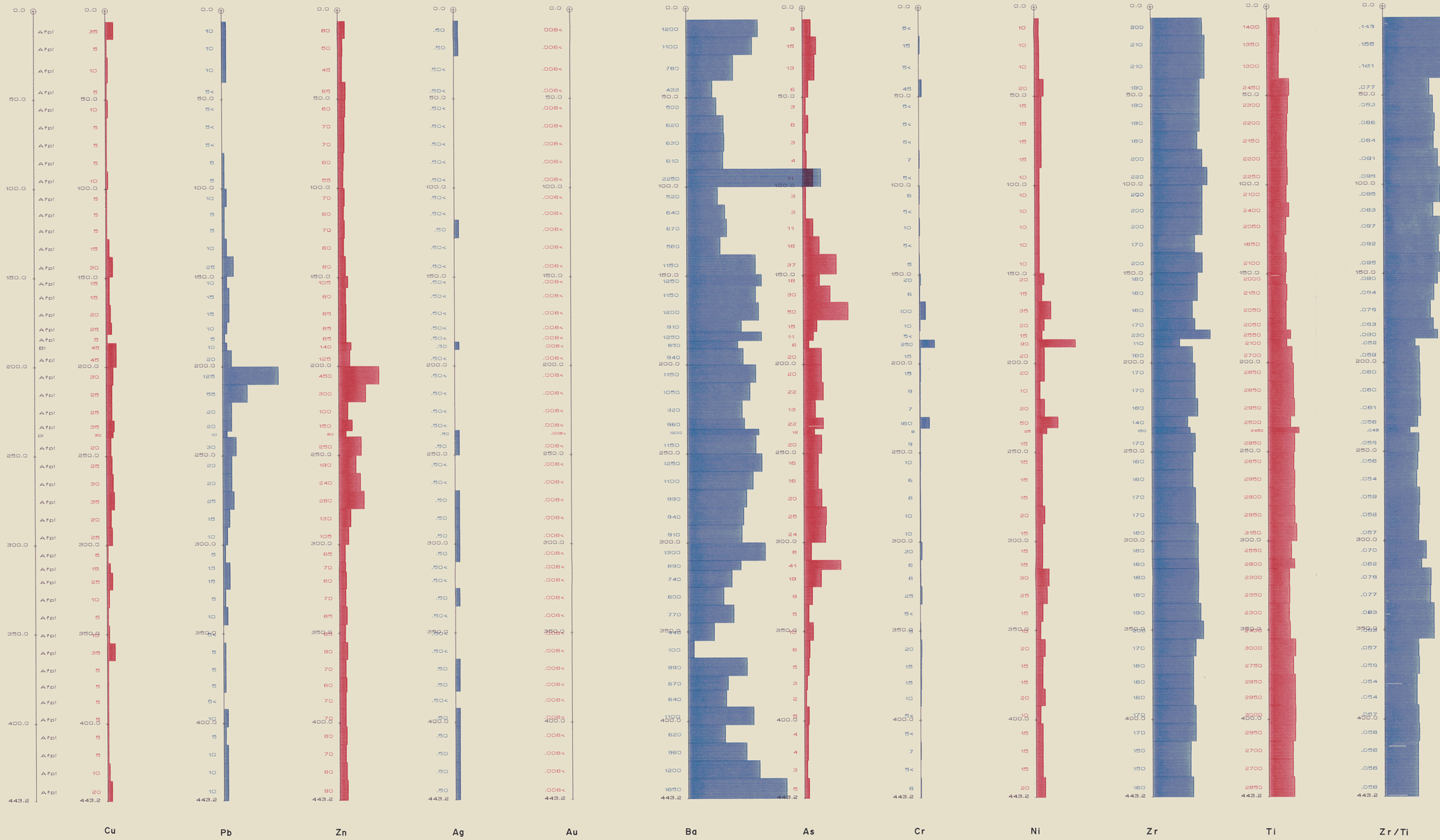
SECTION ON 250° GRID

DDH — MC 19

Scale : 1:1000 | Date : Aug, 1988

Compiled : AMcN
Drawn :
Traced : JLR
Checked :
Plate No : MAC 207

8571



599920 89-3005

SCALE 1: 1000		Aberfoyle Expl. P.L.	
DRAWN	ADB	SECTION : MC 19	
CHECKED			DRAWING No. MAC 207A
DESIGNED			REVISION 30 JUNE, 1989
DESIGN CKD			
DESIGN APP			
PROJECT APP			