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EXPLORATION DIVISION

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EXPLORATION LICENCE 43/85

BEULAH

TASMANIA

PARTIAL RELINQUISHMENT REPORT
ON EXPLORATION TO APRIL 29, 1991

OPEN FILE

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MAY 1991

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BEUL 12a.1	Outcrop Geology. Relinquished Area.	1:10,000
BEUL 25A	Interpretive Geology. Relinquished Area.	1:10,000
BEUL 27A (in text)	Ground Magnetics. Relinquished Area.	1:10,000
BEUL 33A ✓ (in text)	Geophysical Interpretation. Relinquished Area.	1:10,000
BEUL 35A.1 /	Interpretive Geology. Relinquished Area.	1:10,000
BEUL 38 (in text)	EL 43/85 BEULAH. Area for relinquishment.	As Shown
GP 14/K2	Stonebridge Grid. Interpretive Geology.	1:2,500
GP 31 (in text)	Stonebridge Grid. UTEM Loop Locations.	1:10,000

1.0 INTRODUCTION

Regional geological interpretation, aided by the study of reports on exploration conducted by other companies indicated a similarity of the stratigraphic sequence on ETA 8480 Lake Barrington, to that on Aberfoyle's Macintosh-Hatfield properties. In particular, the basic to intermediate lavas and volcanoclastics of the Cambrian Beulah Formation are, from the experience of work in similar lithologies at Hellyer, potential hosts of massive sulphides of the Que/Hellyer type. The occurrence of base metal sulphide-bearing barite at Lower Beulah was seen as particularly encouraging. The local stratigraphic sequence with Beulah Formation overlain by Gog Range Greywacke and Minnow Keratophyre (rhyolitic volcanics) is a possible correlate with the andesite/basalt-Que River Shale-rhyolite sequence in the Que-Hellyer region.

Previous explorers based their initial exploration programmes around regional stream sediment geochemistry. This was an appropriate reconnaissance technique, and led to the identification of several base metal anomalies which were followed up by gridding, soil and rock geochemistry and selective mapping, without success.

The only geophysical exploration over the ETA area was an airborne electromagnetic/magnetic survey (DIGHEM) totalling 360 line km and flown for AUSTAMAX. DIGHEM's principle application is in detecting shallow conductors and potential to apply deep search EM technology was recognised.

Application for an Exploration Licence was made on the basis of these opportunities.

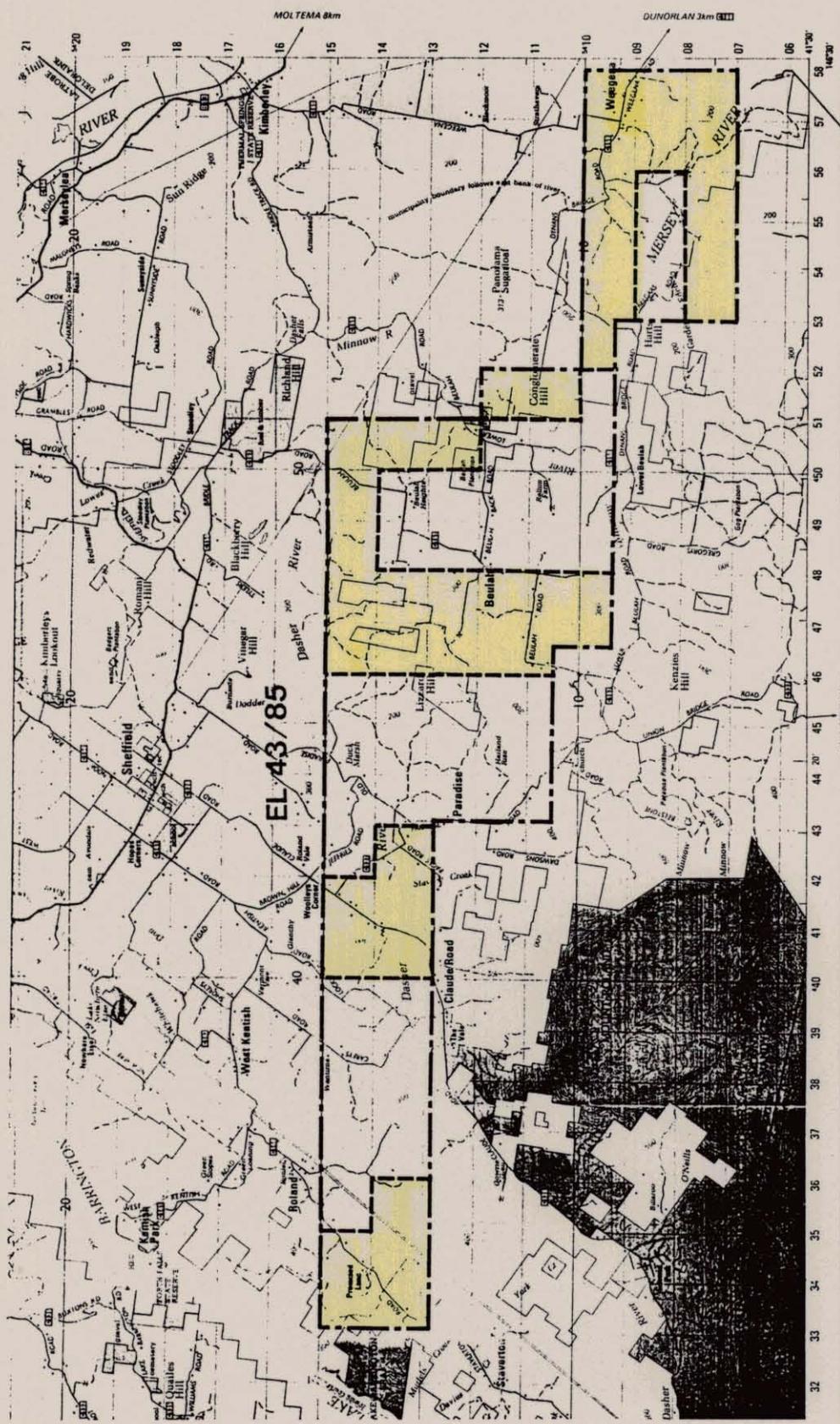
2.0 TENURE

Exploration Licence 43/85 Beulah (80 sq. km.) was granted to Aberfoyle Exploration Pty Ltd on 29 May, 1986.

Statutory regulations require 50% of the licence area to be relinquished on the fifth anniversary of the tenement, in this case 29 May, 1991. Plate Beul 38 shows those areas to be relinquished.

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4E 15km
series
2
1
0
2
E
8
10
Kilometres

MOLE CREEK 12m

KENTISH - DELORANE

Area for relinquishment shown in yellow



5 cm

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTH WEST TASMANIA

EL 43/85 BEULAH
AREA FOR RELINQUISHMENT

REVISIONS			
Init.	Date	Init.	Date

Compiled : Lands Dept.

Drawn :

Traced : DBW

Checked :

Plate No. : BEUL 38

Location Code :

Scale : As shown

Date : April 1991

3.0 PREVIOUS EXPLORATION

The Exploration Licence area lacks any old mines or mineral occurrences and consequently has no documented early prospecting history.

The first systematic base metal exploration was conducted by Asarco Australia Pty Ltd between 1973 and 1976 on Exploration Licence 7/73. Their ground exploration concentrated on a detailed regional stream sediment geochemical programme with a density of two samples per square kilometre (Baker, 1975). No anomalies were located within the current Beulah licence area, consequently no follow-up work was implemented by Asarco, and the property was relinquished.

Amax Australia (Operations) Pty Ltd were granted Exploration Licence 49/82 covering 243 square kilometres in the Wilmot-Beulah area on August 29, 1983. On completion of the exploration work summarised below, Amax relinquished the ground in 1986 (Stewart, 1985), having determined that no significant mineralisation associated with the Cambrian volcanics is likely to outcrop or sub-outcrop on the licence, and that further exploration for deep mineralisation was economically unattractive. No surface geophysics or drilling was undertaken by Amax.

3.1 Stream Sediment Geochemistry

Amax studied the Asarco stream sediment data and concluded that a more detailed survey was not warranted. Instead, the original data was reinterpreted to locate second order anomalies. The threshold metal values chosen for this category were Cu-36 ppm, Pb-38 ppm, Zn-92 ppm. A further 82 stream sediment samples were collected by Amax (Vivian, 1984), only 4 of which are on the relinquished area. These were not followed up.

3.2 Airborne Geophysics

During January 1984 a combined electromagnetic-magnetic survey totalling 360 line kilometres was flown by DIGHEM Limited on behalf of Amax (Vivian, 1984). Part of this survey covered EL 43/85. The survey detected 82 EM anomalies with a conductor grade of 2 or better. There were no obvious massive sulphide conductors. Follow-up of most of these anomalies failed to generate any encouragement.

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4.0 SUMMARY OF WORK COMPLETED

The area to be relinquished, was identified early in the life of this licence as being less prospective than the area retained. Exploration in the relinquished area has therefore been generally of a reconnaissance nature except where grids on the higher rated areas have overlapped onto the relinquished area.

A summary of this work is given below.

4.1 Geology

4.1.1 Mapping

Mapping in the relinquished area has been confined to regional traverses and to some lines on the Stonebridge grid.

The regional geology (after Sheffield 1 mile series) is presented as Plate BEUL 5.

Minor variations from the Survey map as a result of reconnaissance mapping are shown on plates BEUL 25A and BEUL 35A.1, 1:10,000 interpretive maps.

Mapping on the northern part of the Stonebridge grid established the position of the north trending Tertiary Basalt/Cambrian Volcanics contact and is shown on Plate GP 14/K2.

Additional reconnaissance mapping was undertaken in the north west corner of the licence along Smiths Road in the Promised Land area (refer to Plate BEUL 12a.1). This aimed to determine the geology and detect any possible alteration in an area close to a reported outcrop of barite (Temby, 1985). Rocks located comprise interbedded fine ash volcanoclastics and coarse volcanoclastic sandstones containing common quartz and feldspar phenocrysts plus moderately common felsic lava fragments. This area has previously been included in rocks classified as Lorinna Greywacke of Bamford and Green (1986) and Gog Range Greywacke of Jennings (1959). No alteration was observed.

4.1.2 Petrology

One sample was submitted for petrological examination from the relinquished area (562182). The location and description are attached as Appendix I.

The rock when sampled was thought to represent the Beulah granite. Petrological description by Dr. Crawford suggests the rock is a granodiorite verging toward a high K diorite and is clearly Cambrian in age and unrelated to the Devonian granites.

4.2 Geochemistry

4.2.1 Soil Sampling

A soil sampling programme was conducted over the Lower Beulah grid during the period September to November 1988. Parts of 2 lines, 47600E, and 47800E, fall within the relinquished area.

Samples were taken at 25m intervals by a power auger from the "C" horizon at depths of around 1m. Samples were analysed for copper, lead, zinc, silver and arsenic by Analabs using the AAS technique. Locations and results are attached as Appendix II.

No anomalies were detected by the survey in the relinquished area.

4.2.2 Stream Sediment Sampling

Of nine stream sediment samples collected in the Lower Beulah area, one falls within the relinquished area. This sample (562081), collected from a tributary of the Garden of Eden Creek was assayed for Cu, Pb, Zn, Ag, Au, Ba and As. No anomaly is apparent.

Location and assay data is attached in Appendix II B.

4.3 Geophysics

4.3.1 Magnetics

Part of the ground magnetic survey conducted over the Lower Beulah grid falls within the relinquished area. Data from two lines (47600E and 47800E) is contoured on Plate BEUL 27A and an interpretation shown on Plate BEUL 33A. The magnetic low area on the eastern part of the grid shown is interpreted to represent Gog Range Greywacke while the magnetic high is interpreted to reflect granite, previously thought to be Devonian but now considered Cambrian by petrological interpretation.

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4.3.2 UTEM

Part of the UTEM survey which covered the Stonebridge grid falls within the relinquished area. The four reading lines 13000, 13200, 13400 and 13600 N, are shown on Plate GP 31 while the continuous and point normalised horizontal component data are attached as Appendix III.

No features indicative of massive sulphide accumulations were detected by the survey. Some formational near surface conductors and fence effects as identified by the second deviative technique from Silic, 1989, exist on some parts of the property.

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5.0 CONCLUSION

The work completed on that part of EL 43/85 to be relinquished has confirmed the perceived lower prospectivity compared to the area retained.

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APPENDIX I

Petrological Sample 562182

Location and Description

SAMPLE NUMBER: 562182

SUMMARY:

This is a holocrystalline, aphyric granodiorite to high-K diorite intrusive rock, composed of interlocking albite, altered Kspar, quartz, hornblende, minor biotite, and late magmatic to metamorphic chlorite, epidote and possibly pumpellyite. It is clearly Cambrian, and unrelated to the Devonian granites.

HAND SPECIMEN:

This is a texturally well-preserved, but strongly weathered and Fe-stained massive holocrystalline andesite (diorite).

THIN SECTION:

In thin section this sample is seen to be an essentially aphyric holocrystalline granodiorite or syenite, with an average grainsize around 1-2mm. There are two feldspars present, both occurring as subhedral prisms growing into anhedral, coarse-grained interstitial quartz. Albite is twinned and fresh, inclusion free and clear. In contrast, former Kspar is cloudy to totally replaced by sericite, and is modally more abundant than the plagioclase. Quartz probably forms only 8-10 modal% of this sample. The main mafic mineral in this granodiorite is ragged, elongate very pale green hornblende. This appears to be primary, rather than secondary actinolite. It is often marginally altered to brownish pleochroic biotite, probably representing a late-magmatic reaction, and small plates of tan biotite are not uncommon.

Interstitial areas between plagioclase, quartz and Kspar are generally filled with radiating fibrous green chlorite that is strongly pleochroic, and resembles pumpellyite in places. Small leucoxenized FeTi oxide grains also occur mainly interstitially with apatite and lens-shaped sphene crystals. Other alteration minerals include epidote and secondary quartz.

This sample is a granodiorite, verging toward a high-K diorite. It is quite clearly of much deeper intrusive origin than any other sample described from this set. It is quite possible that this sample is a deep intrusive analogue of the same andesite lavas and dykes described above. I already have a few better preserved samples of the same body (from the Geopeko end of the intrusion) prepared for analysis.

APPENDIX 11

- A. Soil Sample Locations and Assay Results
- B. Stream Sediment Location and Assay Result

Locations of samples are AMG coordinates.
For full coordinates eastings should
be preceded by 4 and northings by 54.
Location of gridlines shown on Plate Beul 25A.

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Flist... File: BEULAH Date 5: 9

00001 >LINE	EAST	NORTH	SAMPLE	Cu	Pb	Zn	Ag	As
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(results in ppm)

00027 >47600E	47600.0	9400.0	485034	35	10	75	0.3	10
00028 >47600E	47600.0	9425.0	485035	45	3	70	0.3	130
00029 >47600E	47600.0	9450.0	485036	40	5	105	0.3	55
00030 >47600E	47600.0	9475.0	485037	55	3	65	0.3	4
00031 >47600E	47600.0	9500.0	485038	45	10	100	0.3	4
00032 >47600E	47600.0	9525.0	485039	35	15	70	0.3	3
00033 >47600E	47600.0	9550.0	485040	40	15	70	0.3	2
00034 >47600E	47600.0	9575.0	485041	55	15	70	0.3	3
00035 >47600E	47600.0	9600.0	485042	15	15	65	0.3	3
00036 >47600E	47600.0	9625.0	485043	10	20	75	0.3	5
00037 >47600E	47600.0	9650.0	485044	25	25	80	0.3	6
00038 >47600E	47600.0	9675.0	485045	35	40	80	0.3	8
00039 >47600E	47600.0	9700.0	485046	40	40	75	0.3	8
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00041 >47600E	47600.0	9750.0	485048	40	40	85	0.3	8
00042 >47600E	47600.0	9775.0	485049	40	35	80	0.3	8
00043 >47600E	47600.0	9800.0	485050	40	40	85	0.3	8
00044 >47600E	47600.0	9825.0	485051	40	25	70	0.3	7
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00046 >47600E	47600.0	9875.0	485053	45	20	70	0.3	9
00047 >47600E	47600.0	9900.0	485054	50	30	70	0.3	9
00048 >47600E	47600.0	9925.0	485055	50	35	65	0.3	8
00049 >47600E	47600.0	9950.0	485056	50	40	70	0.3	8
00050 >47600E	47600.0	9975.0	485057	35	30	50	0.3	5
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00054 >47600E	47600.0	10075.0	485061	55	50	80	0.3	10
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00057 >47600E	47600.0	10150.0	485064	55	50	80	0.3	10

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Date 5: 9 8

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00178 >47800E	47800.0	10875.0	485199	30	20	85	0.3		5	
00179 >47800E	47800.0	10900.0	485200	25	30	85	0.3		5	
00180 >47800E	47800.0	10925.0	485201	25	25	70	0.3		8	
00181 >47800E	47800.0	10950.0	485202	35	20	85	0.3		5	
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0021

ANALABS

368022

A Division of Inchcape Inspection and Testing Services Australia Pty Ltd.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.07290

24/08/90

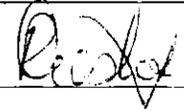
10049

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	As
1									
2	562081	25	15	105	<0.5	<0.008	-	490	3
3									
4	Location AMG 5407970N 453365E								
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	0.008	0.008	10	2
24	UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
25	METHOD	101	101	101	101	309	309	401	401

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

AUTHORISED OFFICER



ANALABS

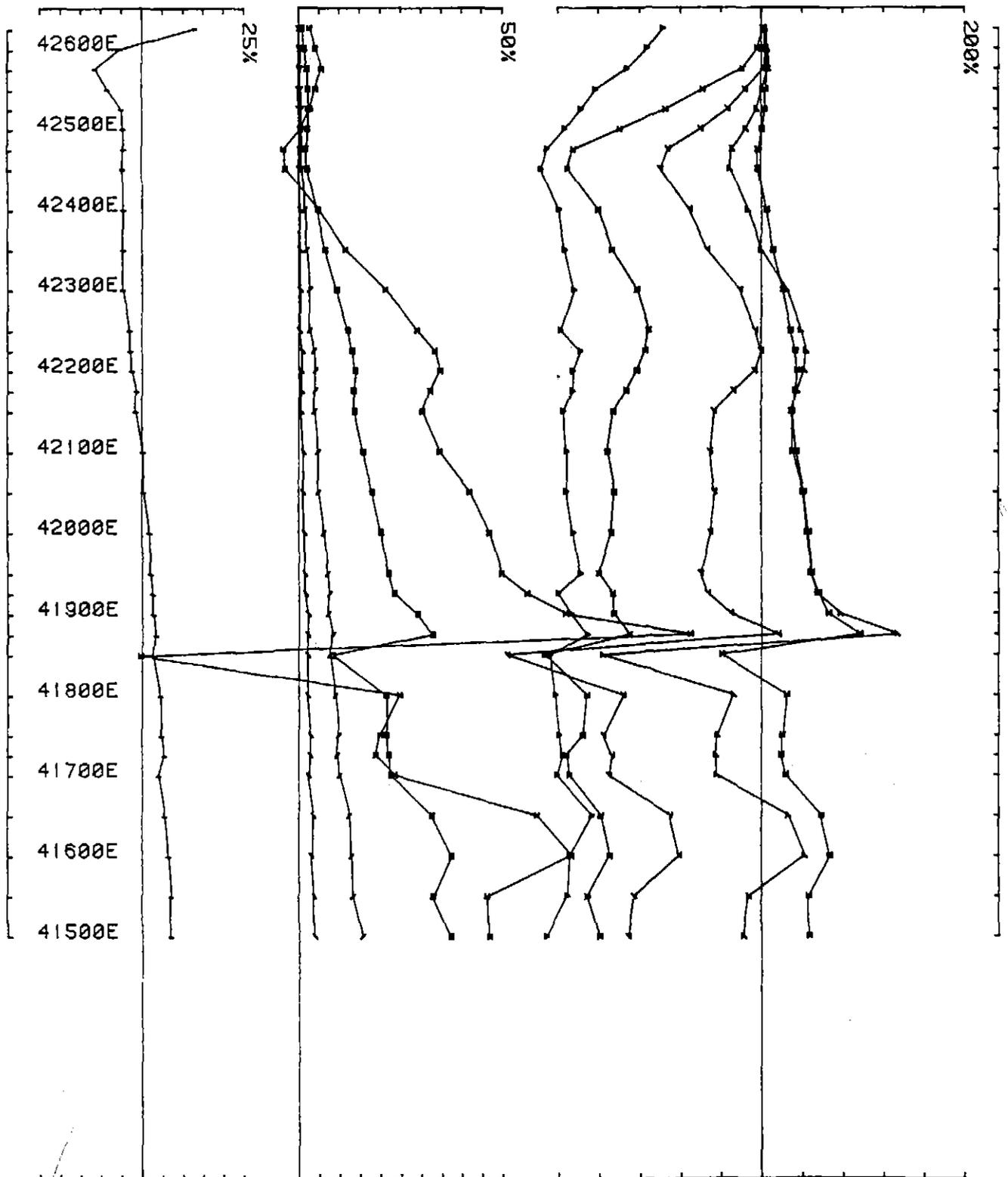
0034

APPENDIX III

Stonebridge UTEM Data

Lines 13000, 13200, 13400 and 13600N

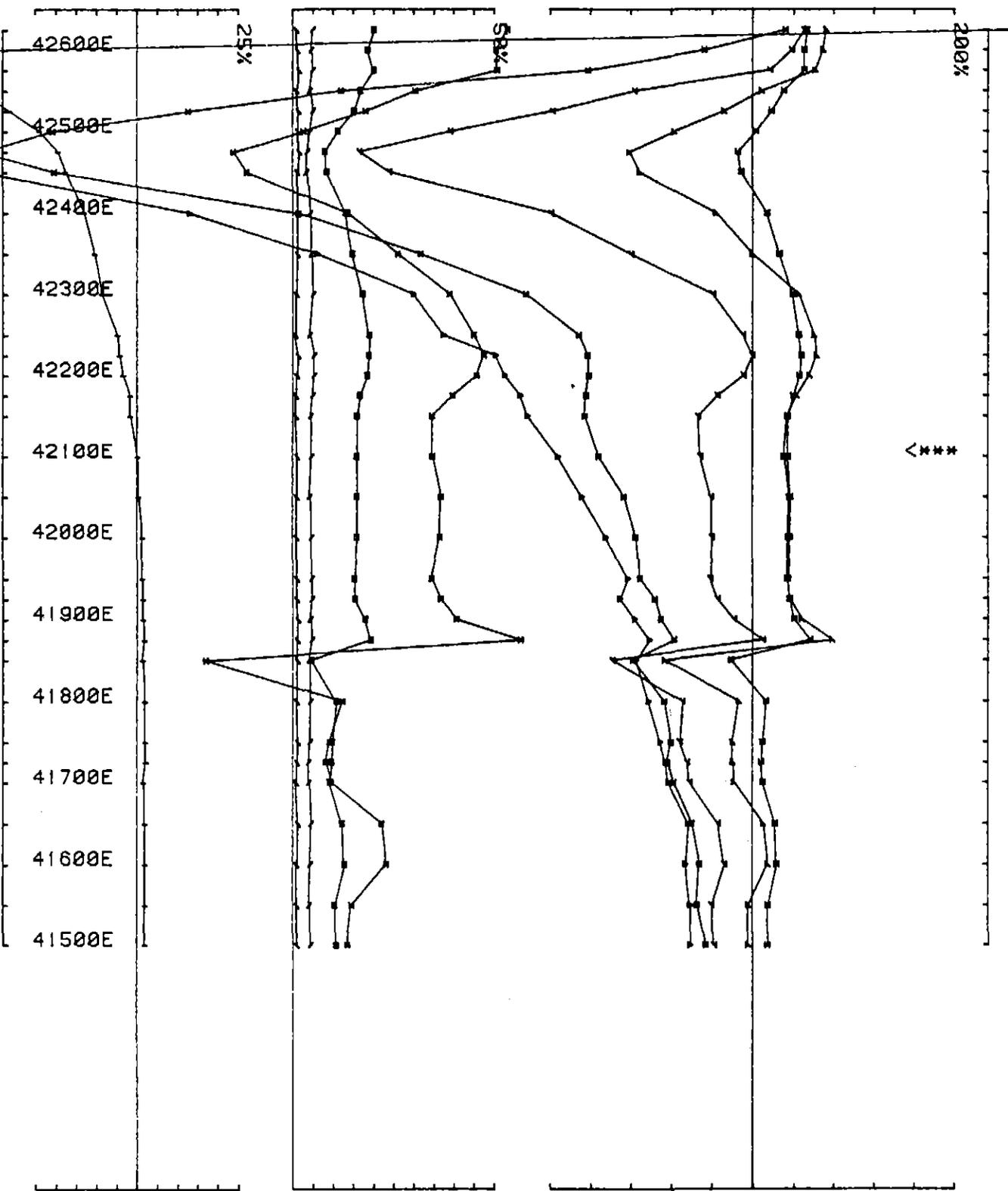
0023



UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

conducted by SJV CONS. & LAMONTAGNE Job 8901 base freq (hz) 26.230 Feb 89
 loop no 9 line 13000N component Hz secondary field Ch 1 contin. norm.

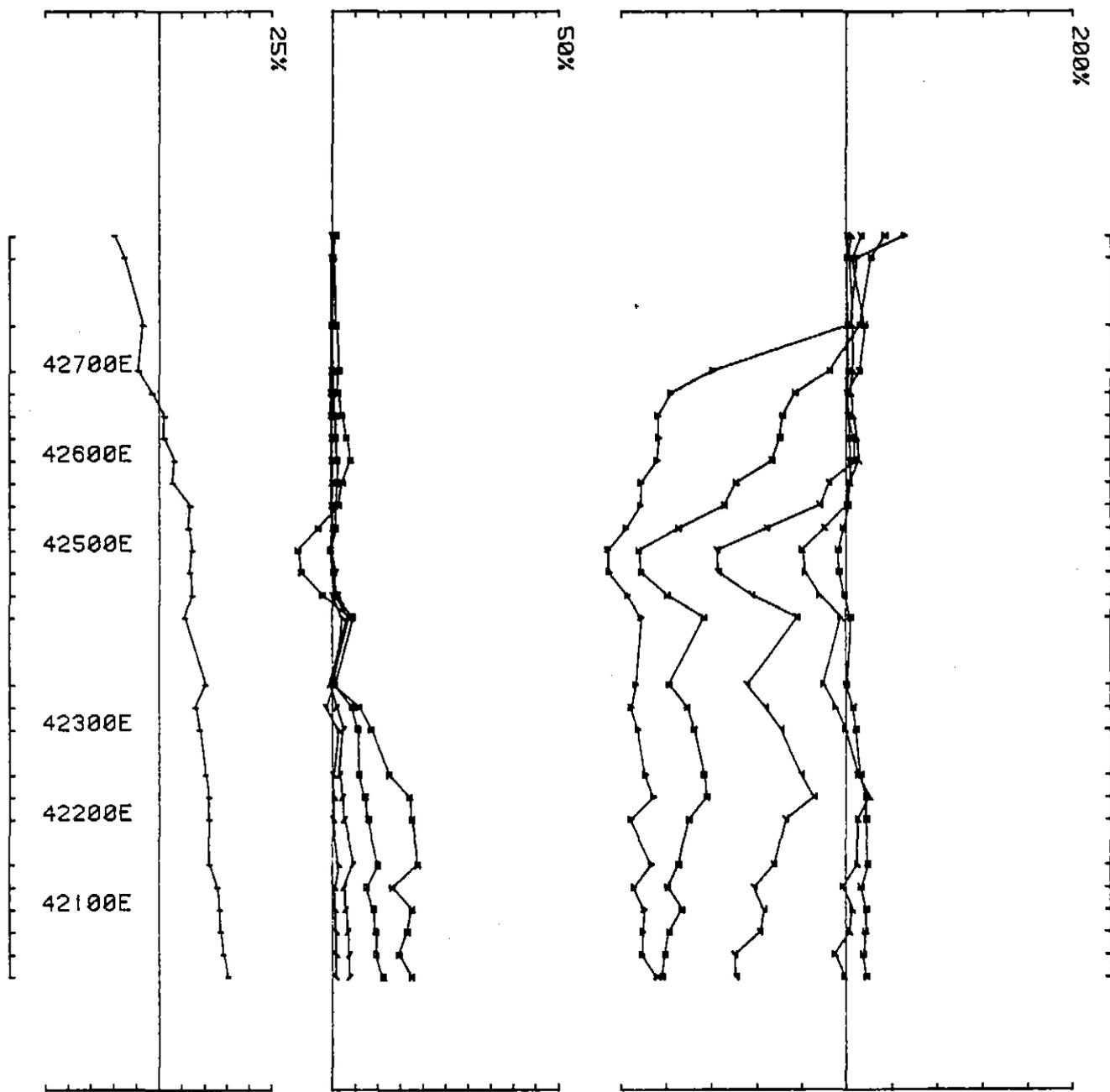
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UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

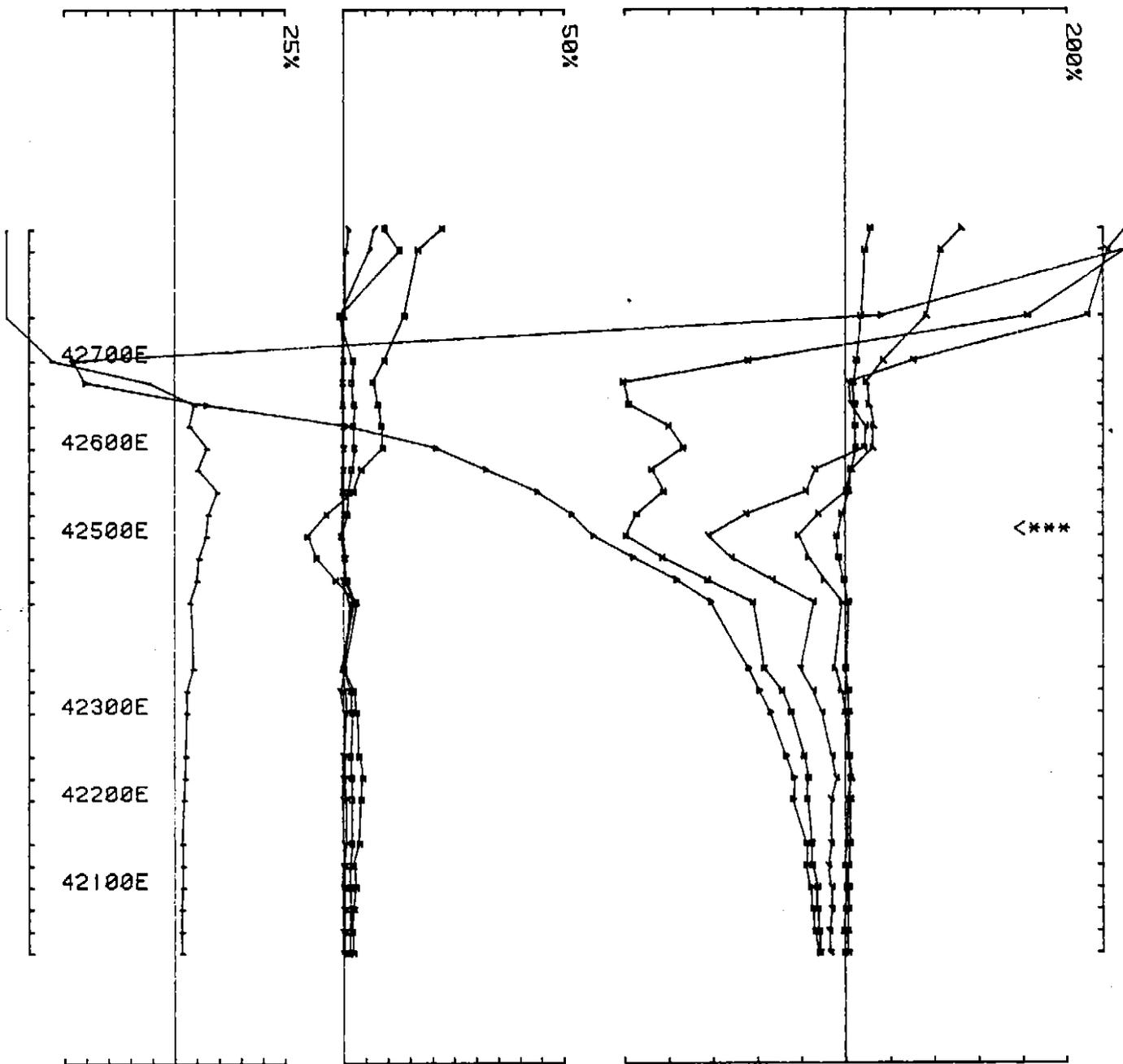
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UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

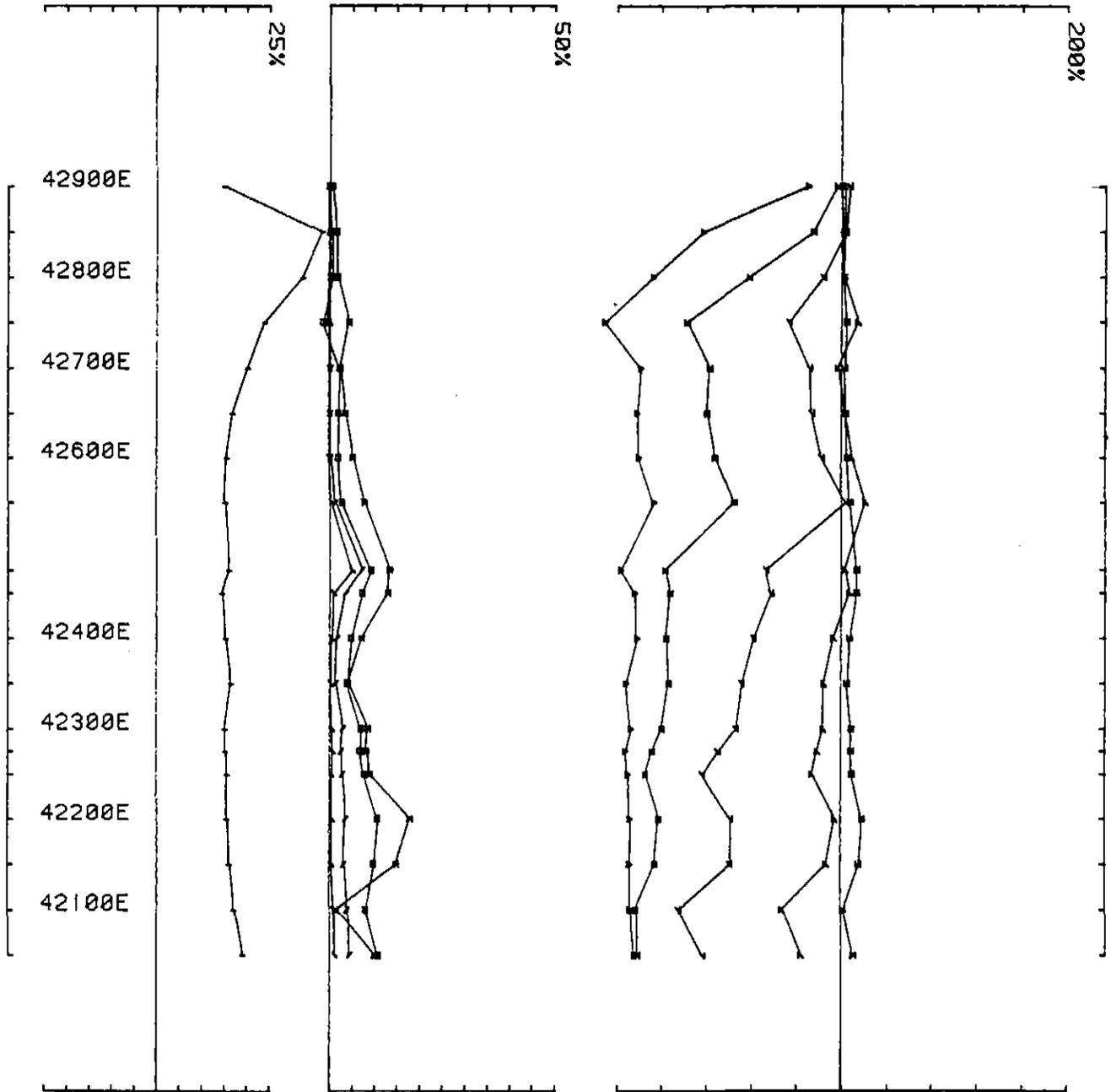
conducted by SJV CONS. & LAMONTAGNE Job 8901 base freq (hz) 26.230 Feb 89
loop no 10 line 13200N component Hz secondary field Ch 1 contin. norm.



UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

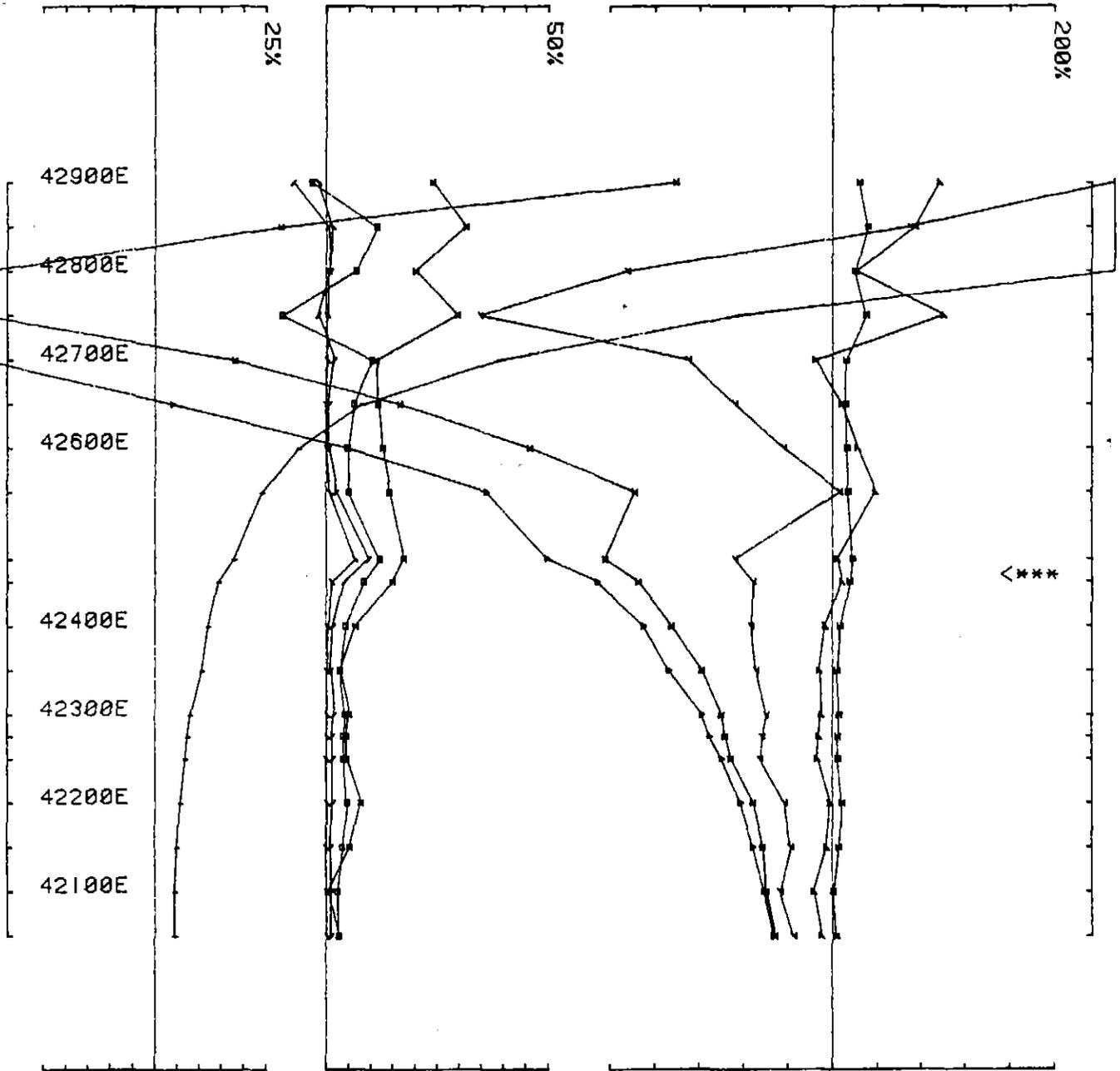
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0027



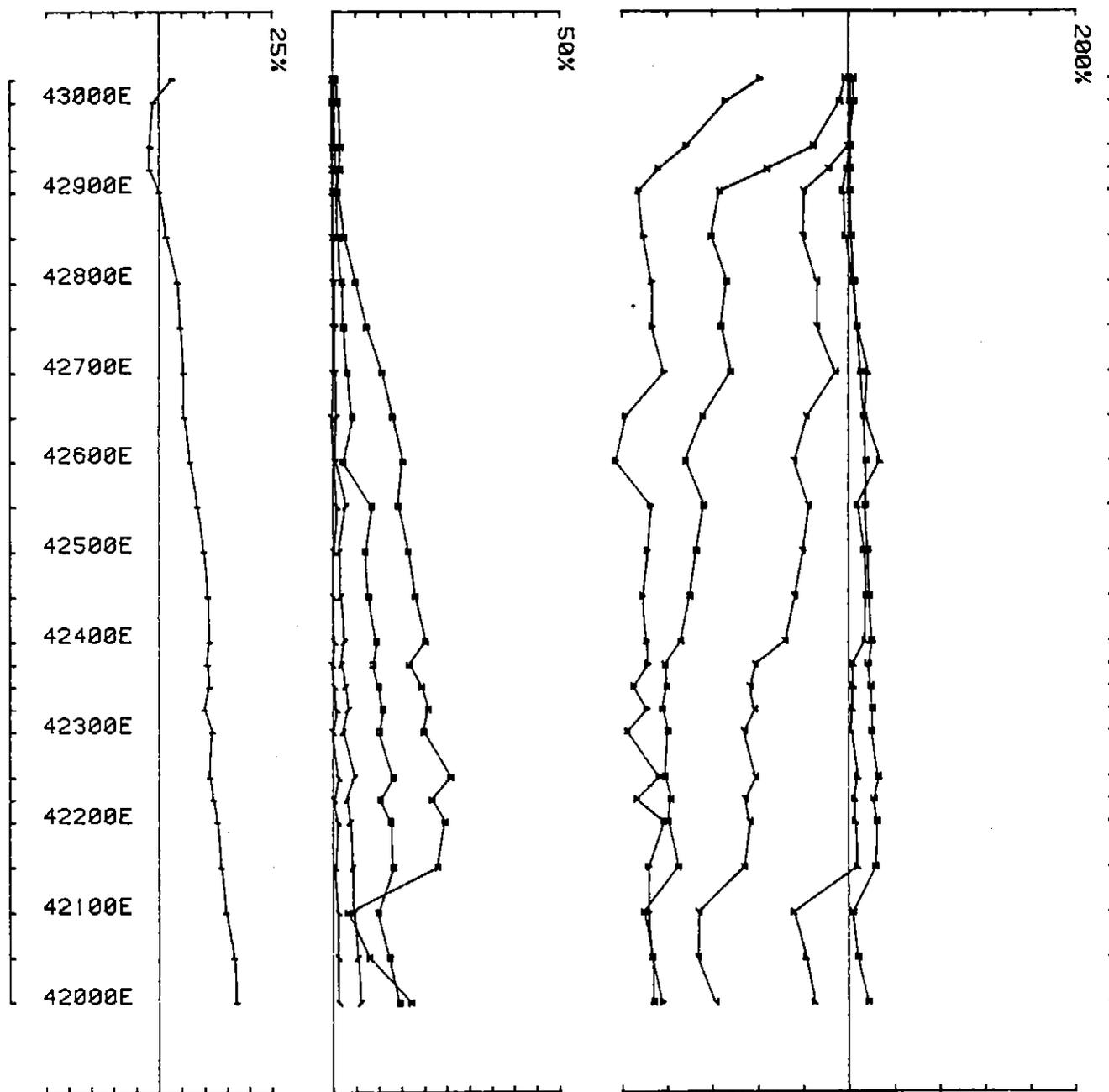
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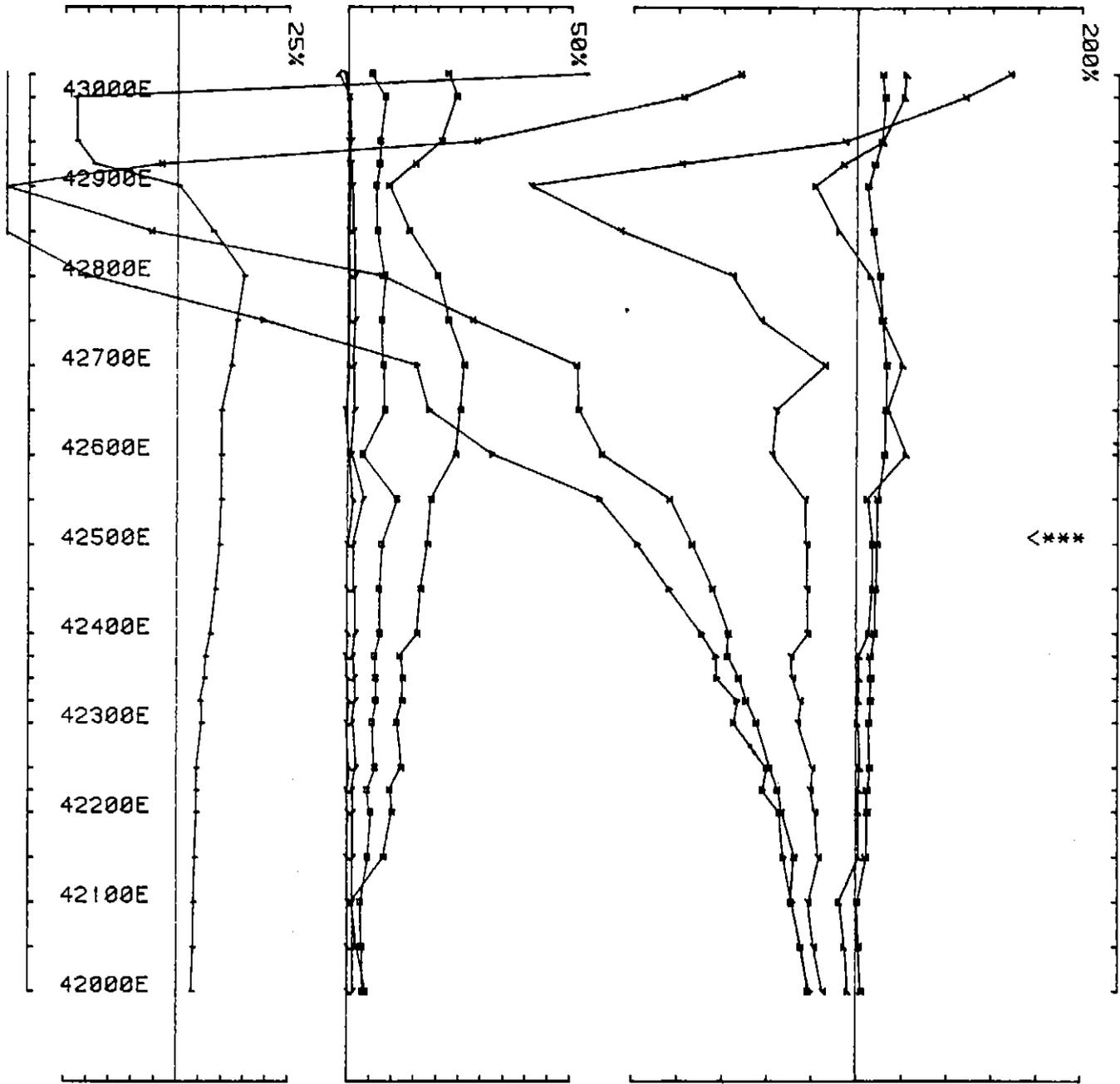
UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

conducted by SJV CONS. & LAMONTAGNE job 8901 base freq (hz) 26.230 Feb 89
loop no 10 line 13400N component Hz secondary field Ch 1 point norm.



UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

conducted by SJV CONS. & LAMONTAGNE Job 8901 base freq (hz) 26.230 Feb 89
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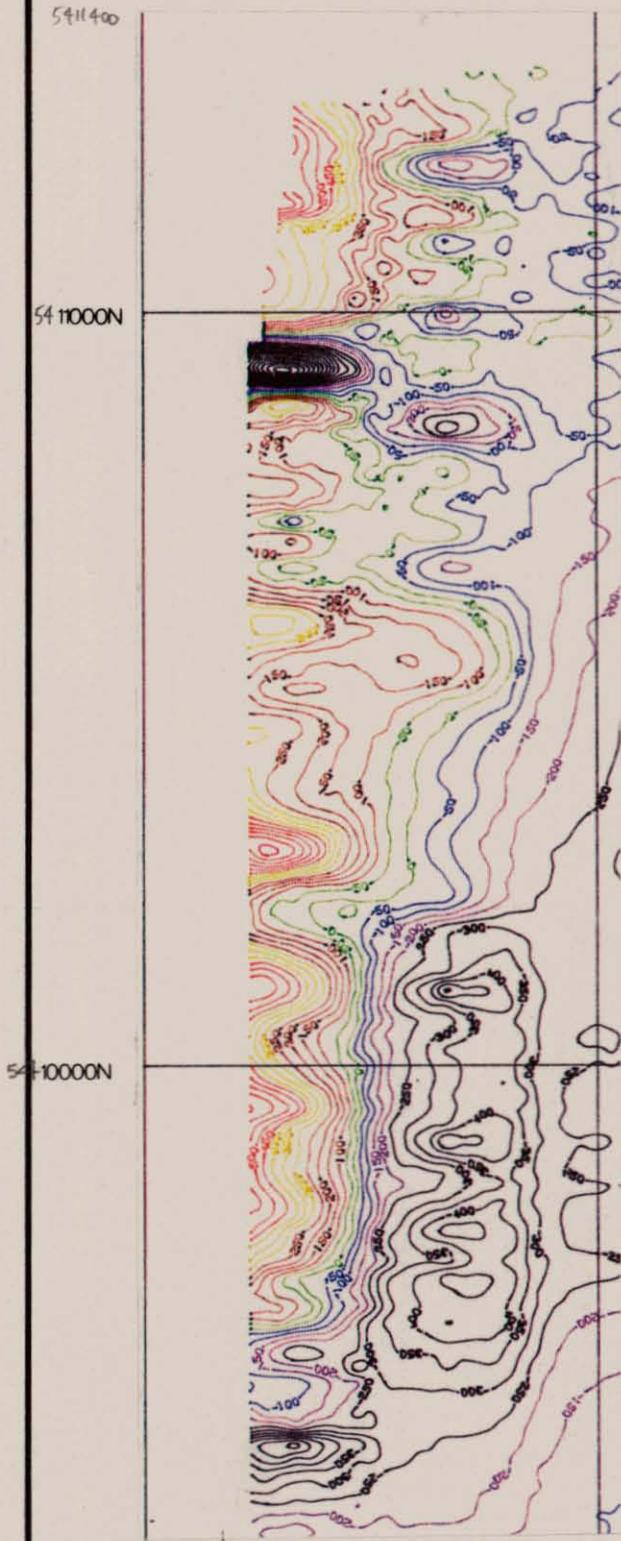


UTEM SURVEY at STONEBRIDGE for ABERFOYLE RESOURCES LTD.

conducted by SJV CONS. & LAMONTAGNE Job 8901 base freq (hz) 26.230 Feb 89
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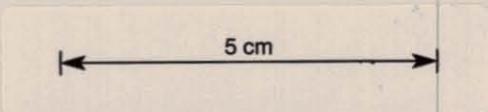
0031

368032



COLOUR RANGES (nT)
 -1000 - -250 Black
 -250 - -150 Purple
 -150 - -50 Blue
 -50 - +50 Green
 +50 - +250 Brown
 +250 - +400 Yellow
 +400 - +650 Orange
 +650 - +1200 Red

TOTAL MAGNETIC INTENSITY CONTOURS
 BASE LEVEL: 0 nT
 CONTOUR INTERVAL: 50 nT
 FILTERING: MEDIAN



Aberfoyle Resources Limited
 EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

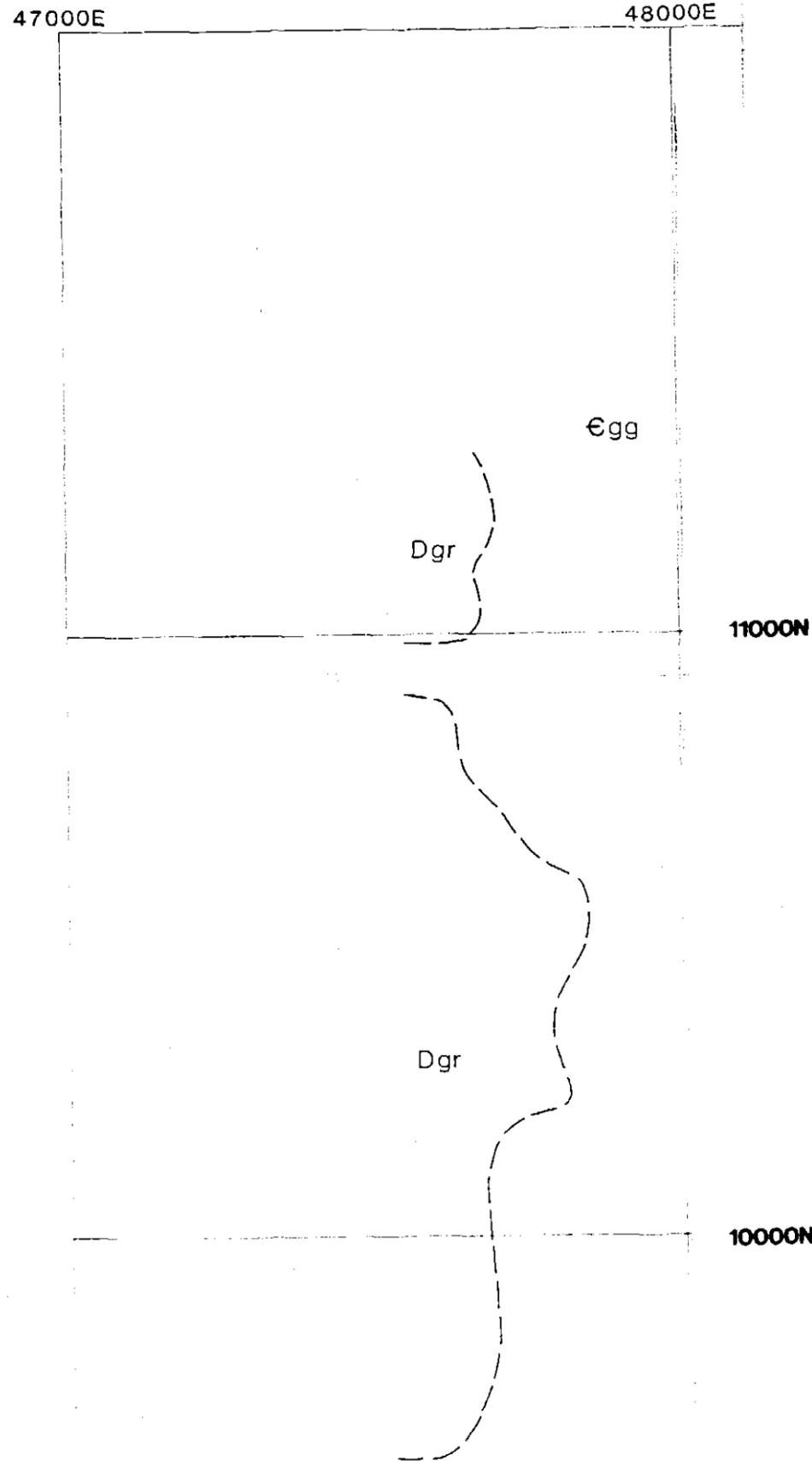
NORTH WEST TASMANIA
EL 43/85 BEULAH
 GROUND MAGNETICS RELINQUISHED AREA

Compiled : GBW
 Drawn : APOLLO
 Traced :
 Checked :
 Plate No. : BEUL 27A

Location Code : Scale : 1:10,000 Date : April 1991

0032

368033

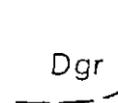


LEGEND

UTEM INTERPRETATION

 Conductively anomalous unit with latest anomalous channel (lower number = stronger conductor)

GROUND MAGNETICS INTERPRETATION

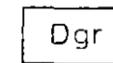
 Dgr } Interpreted lithology

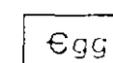
 Fault

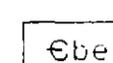
 Anomalous body with polarity

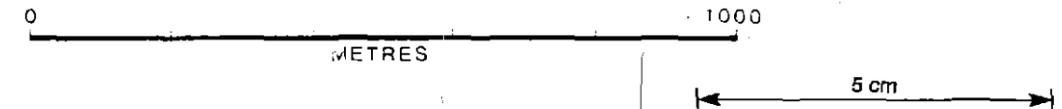
 ? Lithological boundary

GEOLOGICAL LEGEND

 Devonian Granite
fine grained granite and microgranite

 Gog Range Greywacke
dominantly greywacke sequence and mudstone

 Beulah Formation Rocks
epiclastic sandstone derived from felsic volcanics and pelitic metasediments (including greywacke)



91-3258

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

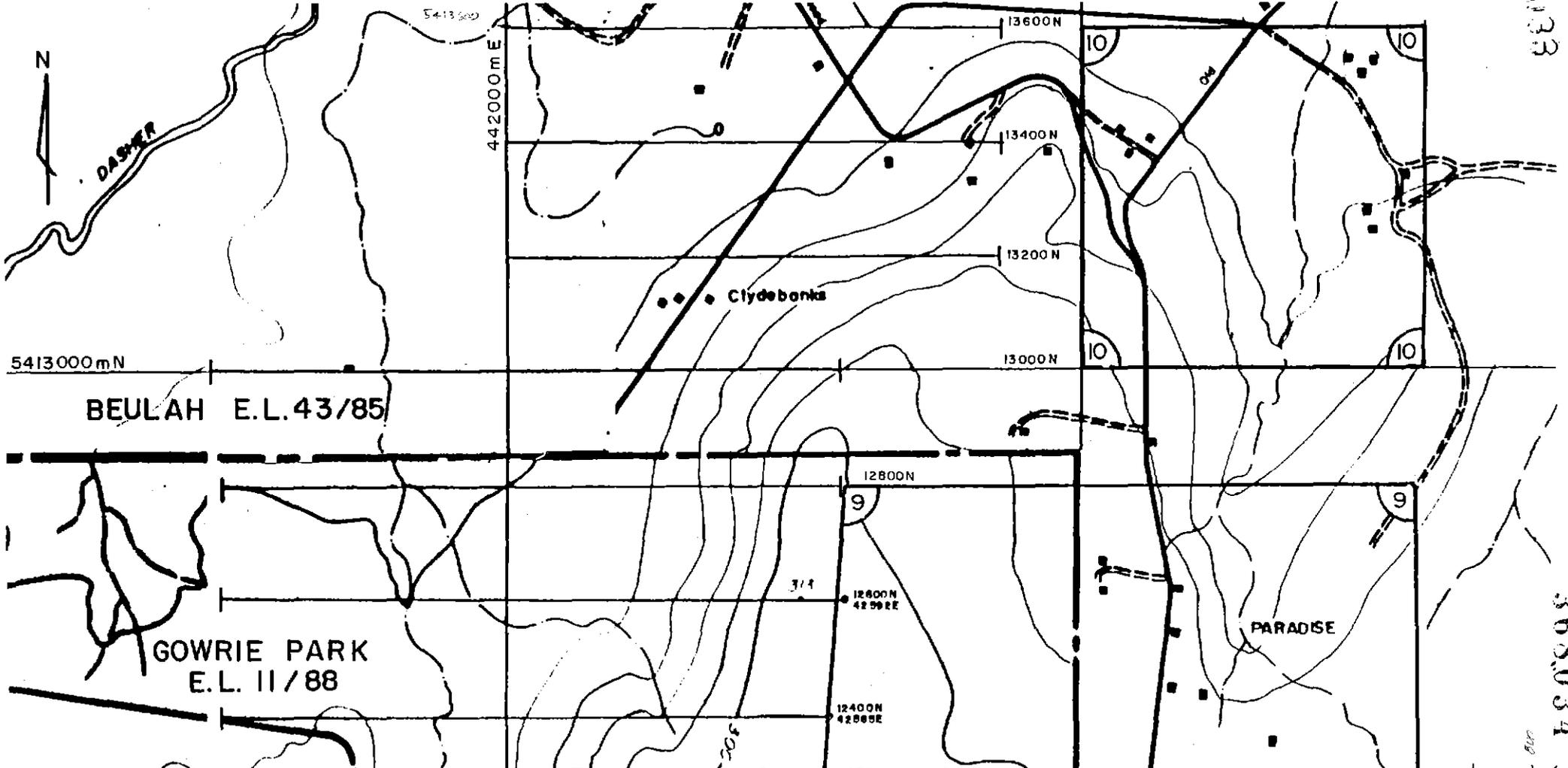
NORTHERN TASMANIA
EL 43/85 BEULAH
 INTERPRETED GEOPHYSICS
 RELINQUISHED AREA

Compiled : GBW
 Drawn :
 Traced :
 Checked :
 Plate No. : BEUL 33A

Location Code :

Scale : 1:10,000

Date : April 1991



0033

368,034

BEULAH E.L. 43/85

GOWRIE PARK E.L. 11/88

Clydebanks

PARADISE

Aberfoyle Resources Limited

EXPLORATION DIVISION

NORTH WEST TASMANIA

GOWRIE PARK E.L. 11/88 - BEULAH E.L. 43/85

STONEBRIDGE GRID

UTEM LOOP LOCATIONS

Compiled : DJJ JS

Drawn : RJE

Traced : RJE

Checked : SWR

Plate No : GP 31

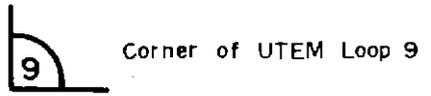
REVISIONS			
Init.	Date	Init.	Date

Location Code :

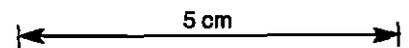
Scale : 1 : 10 000

Date : August, 1989

Aberfoyle grid 1988

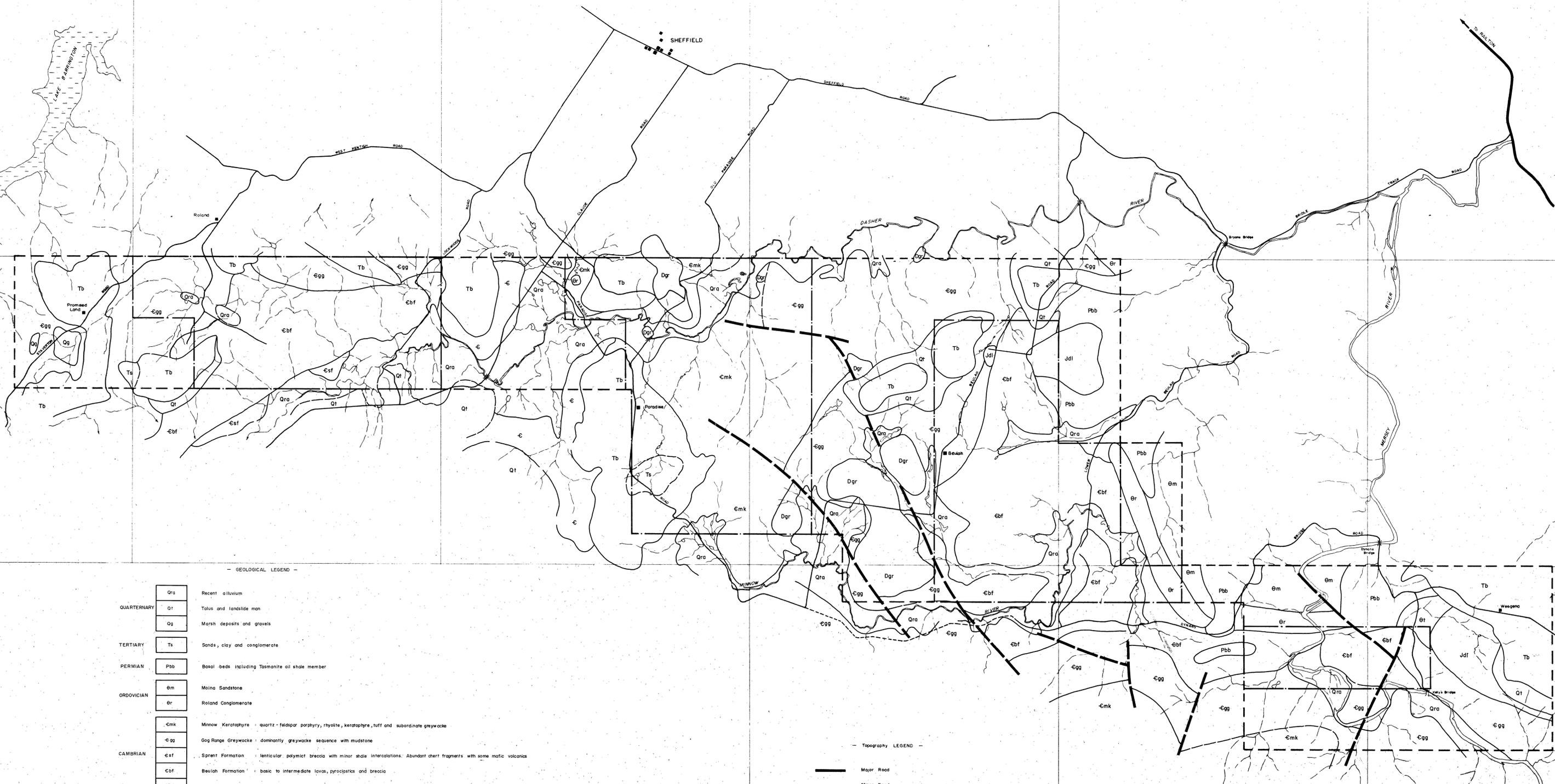


Corner of UTEM Loop 9



5 cm

5412000

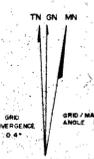
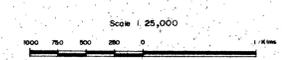


— GEOLOGICAL LEGEND —

- QUATERNARY
 - Qra Recent alluvium
 - Qs Talus and landslide man
 - Qg Marsh deposits and gravels
- TERTIARY
 - Ts Sands, clay and conglomerate
- PERMIAN
 - Pbb Basal beds including Tasmanite oil shale member
- ORDOVICIAN
 - Om Maina Sandstone
 - Or Roland Conglomerate
- CAMBRIAN
 - Cmk Minnow Keratophyre - quartz - feldspar porphyry, rhyolite, keratophyre, tuff and subordinate greywacke
 - Egg Gog Range Greywacke - dominantly greywacke sequence with mudstone
 - Csf Sprot Formation - lenticular polymict breccia with minor shale intercalations. Abundant chert fragments with some mafic volcanics
 - Cbf Beulah Formation - basic to intermediate lavas, pyroclastics and breccia
 - e Unassigned
 - Tb Tertiary Basalt
 - Jdl Jurassic Dolerite
 - Dgr Devonian Granite - fine grained granite and microgranodiorite

— TOPOGRAPHY LEGEND —

- Major Road
- Minor Road
- Township
- Lake
- Dam on river or stream
- River or stream
- Exploration Licence boundary (as at 29/4/91)
- Bridge
- Relinquished Area boundary



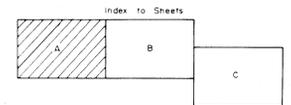
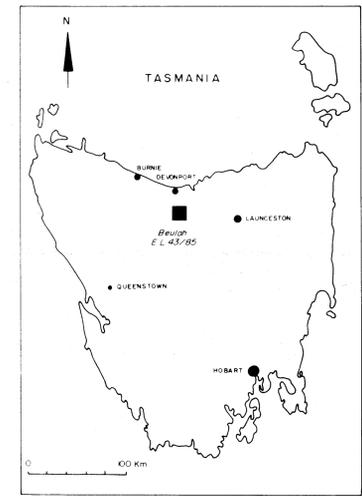
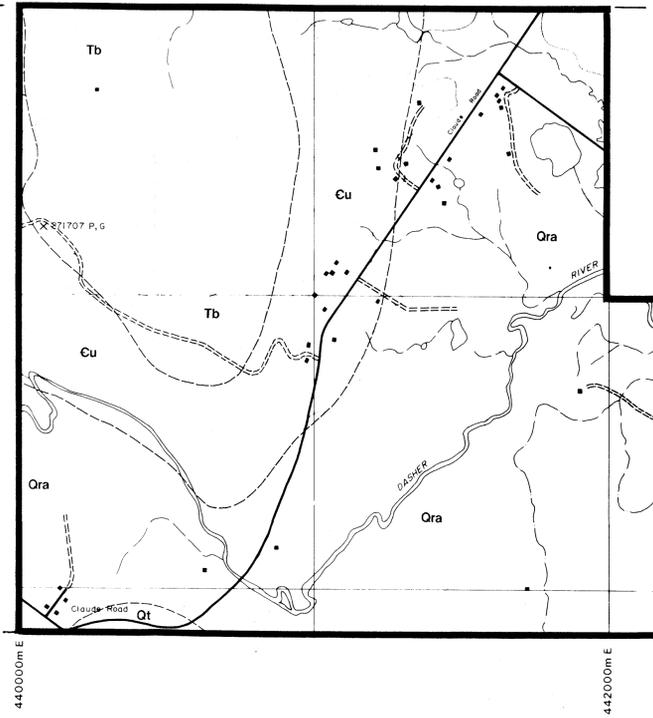
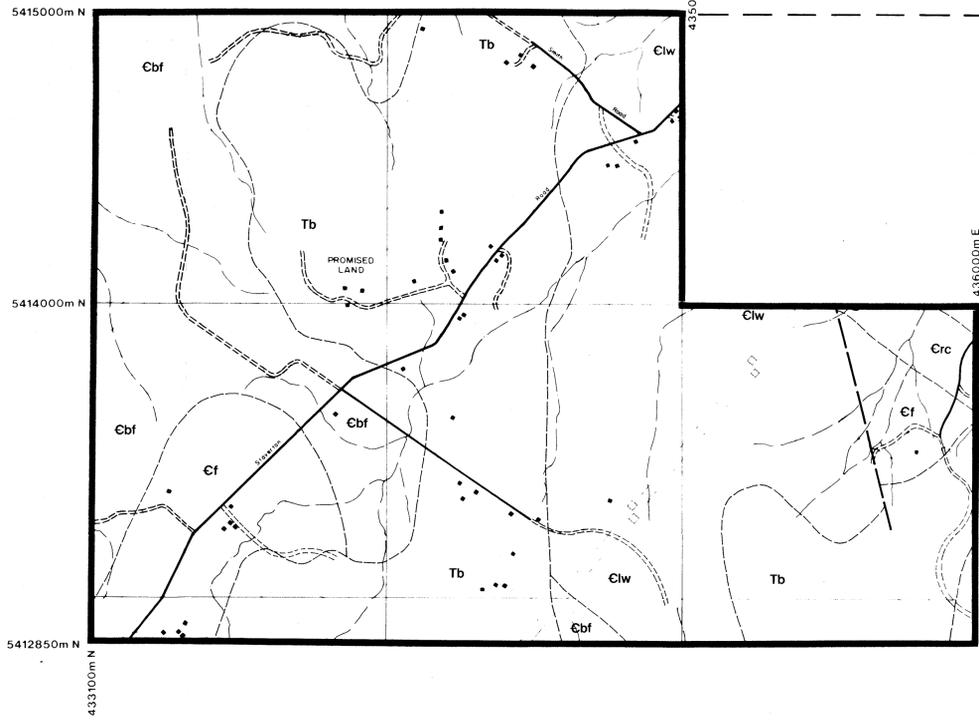
365035
5 cm
91-3258.

Aberfoyle Resources Limited
EXPLORATION DIVISION

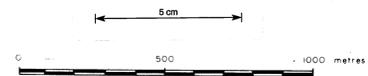
NORTHERN TASMANIA
BEULAH E.L. 43/85
SUMMARY GEOLOGY
(after Dept. of Mines)

REVISIONS		Compiled: JRS / RJE	
Init.	Date	Init.	Date
CSW/pj	6-5-91		

Drawn: JRS
Traced: RJE
Checked: _____
Location Code: K55/3 Scale: 1:25,000 Date: April, 1987 Plate No.: BEUL 5A

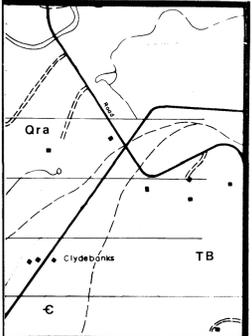


Boundary of area relinquished
 Boundary of area retained



368037
91-3258.

Aberfoyle Resources Limited EXPLORATION DIVISION				Complied: DBW																	
NORTHERN TASMANIA BEULAH EL43/85 INTERPRETIVE GEOLOGY RELINQUISHED AREA				Drawn: MAR																	
REVISIONS				Traced:																	
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Init.	Date	Init.	Date																		
Location Code:	Scale: 1:10 000	Date: MAY 1991	Plate No: BEUL 35A/1																		

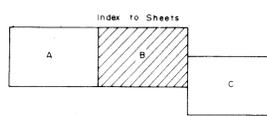
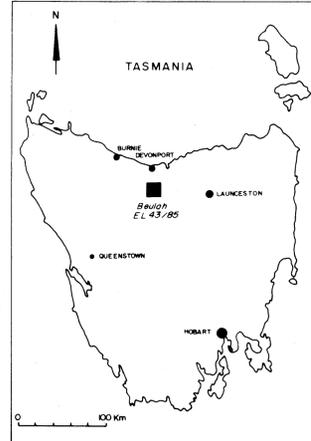


5412850m N

443000m E

5410500m N

443100m E



— GEOLOGICAL LEGEND —

QUATERNARY

- Q1 Recent alluvium
- Q2 Talus & landslide mass
- Q3 Marsh deposits & gravels

TERTIARY

- Tt Sands, clay & conglomerate

PERMIAN

- Pbb Basal beds including Tasmanian oil shale member

ORDOVICIAN

- Om Moira Sandstone
- Or Roland Conglomerate

CAMBRIAN

- Cm1 Micaceous keratophyre: quartz-feldspar porphyry, rhyolite, keratophyre, ruff & subordinate greywacke
- Cm2 Gigg Range greywacke: dominantly greywacke sequence
- Cm3 Sandstone
- Cm4 Sphery Formation: lenticular polymict breccia: fine shale intercalations. Abundant chert frags. C some micritic volcanics
- Cm5 Beulah Formation: basalt to intermediate lavas, dykes, etc.
- C Unassigned

ALTERATION

- E Intense epidote/quartz alteration (epidolites)
- M Perseus feldspathic alteration throughout matrix of rock
- Pycc Weak pyrite calcite & hematite development

Boundary of area relinquished (thick solid line)

Boundary of area retained (dashed line)

LOWER BEULAH AREA - BEULAH FORMATION ROCKS

- EB1 Variably vesicular aphyric to ophyric porphyritic andesite & basaltic flows & lava breccias
- EB2 Hornblende + plagioclase porphyritic andesite (dark volcanic intrusives)
- EB3 Rhyolite (lava)
- EB4 Epandite sandstone derived from felsic volcanics & pelitic metamorphics (including greywacke)

5412000m N

452000m E

450000m E

5409400m N

452000m E

5410000m N

452000m E

5409400m N

368038

5cm

91-32587

Aberfoyle Resources Limited
EXPLORATION DIVISION

NORTHERN TASMANIA
BEULAH EL43/85
INTERPRETIVE GEOLOGY
RELINQUISHED AREA

REVISIONS			
Init.	Date	Init.	Date

Compiled: DBW
Drawn: MAR
Traced:
Checked:
Location Code:
Scale: 1:10 000
Date: MAY 1991
Plan No: BEUL 25A

9932

5414000 m N

441000 m E

442000 m E

443000 m E

5414000 m N

5413000 m N

5413000 m N

E.L. 43/85 Beulah

E.L. 11/88 Gowrie Park

RIVER

DASHER

Produce

Road

'CLYDEBANKS'

'granite-like' por

cp

Tb

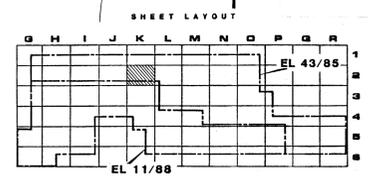
cp

'granite-like' por

Tb

12800 N

12600 N
42592 E



5 cm

Aberfoyle Resources Limited 368039
EXPLORATION DIVISION

NORTHERN TASMANIA
GOWRIE PARK E.L.11/88- BEULAH E.L.43/85
STONEBRIDGE GRID
INTERPRETIVE GEOLOGY

REVISIONS	
Init	Date
MAR	6-5-91

Compiled	DJU
Drawn	RJE
Traced	RJE
Checked	DJU

Location Code: Scale: 1:2500 Date: February, 1989 Plate No: GP14/K2