306001

EL 24/95 Bulgobac
TASMANIA

Progress Report for the Period
March 1996 to March 1997
Volume 1 of 1

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1.0 SUMMARY

Work completed on EL24/95 Bulgobac during the current reporting period was designed to assess potential for VHMS mineralisation of the Hellyer/Que River or Rosebery type. Work concentrated on the Silver Falls and Bulgobac Falls areas.

At Silver Falls, lead isotopes of soil samples from a zone of Zn-rich anomalies, trending north-east from the Silver Falls workings, returned a Cambrian "Que River" signature. A lead isotope sample from galena at the Silver Falls workings also returned a Que River signature. Mapping in this area confirmed the sequence is consistently east dipping.

At Bulgobac Falls an honours project is in progress to assist in interpretation of this poorly understood area.

2.0 INTRODUCTION

Exploration licence 24/95 Bulgobac, 31 Sq. Km, was granted to Aberfoyle Resources Ltd. on 28 March 1996, the result of a competitive tender (ETA 384) following from a compulsory 50% relinquishment of EL 2/90 previously held by Pasminco Australia Pty. Ltd. The licence is located approximately 17km north of Rosebery and 16 km south west of the Hellyer Mine. It lies west of the Murchison Highway and north of Boco Road and covers the upper Ross Creek catchment and sections of the Bulgobac and Que Rivers (Figure 1). Access is via the Silver Falls track in the SW, the Sawmill Creek track in the centre and Emu Bay Railway and Bulgobac Falls track in the east. Most of the area is covered by rainforest.

The Bulgobac EL is considered prospective primarily for Volcanic Hosted Massive Sulphide (VHMS) mineralisation, whilst porphyry related base metal mineralisation of the Sock Creek style, and Henty style gold mineralisation are secondary targets.

306007

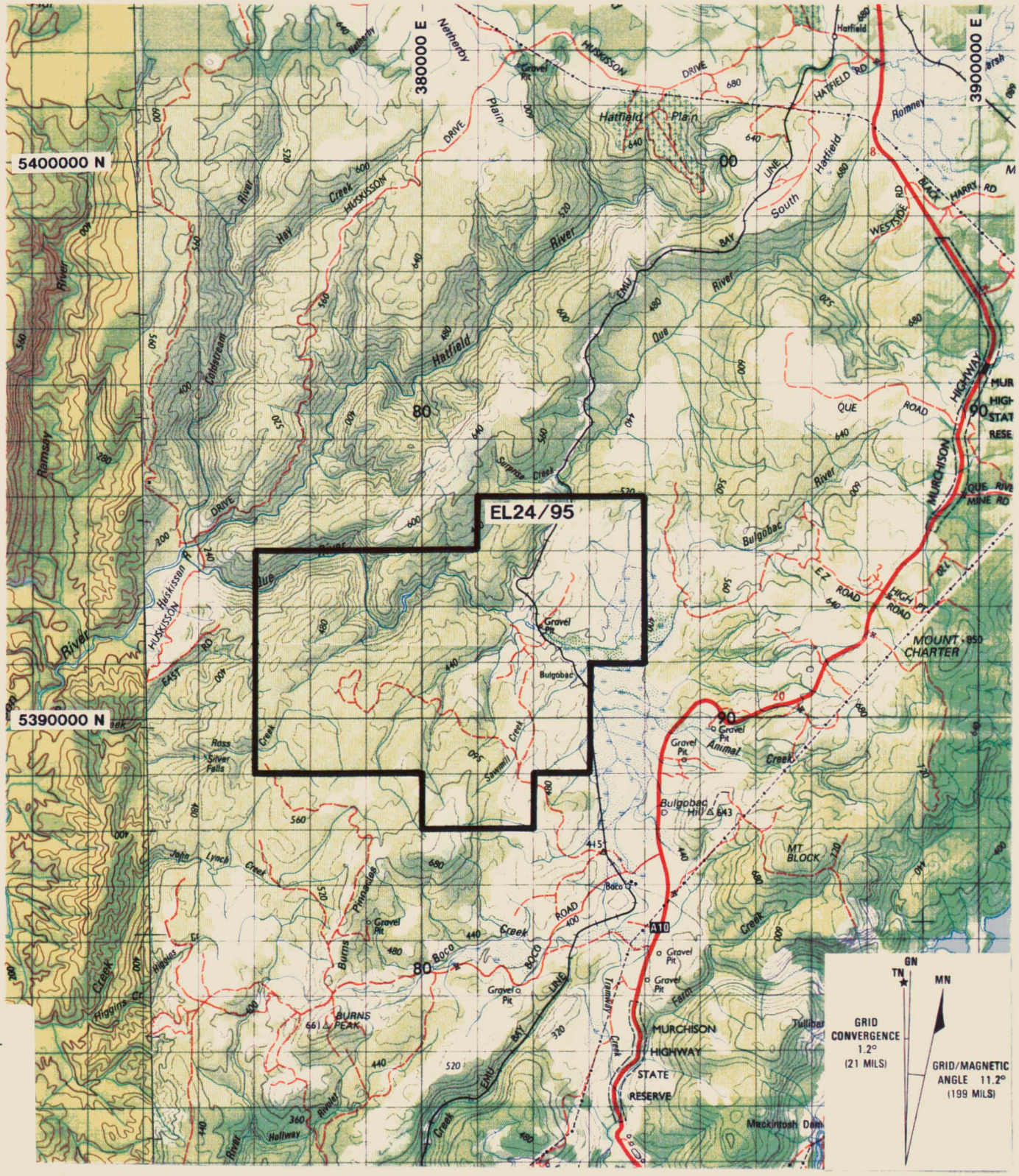


Figure 1

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WESTERN TASMANIA

E.L.24/95 BULGOBAC

LOCALITY PLAN

Compiled : RdeB

Drawn :

Traced : RdeB

Checked : AMcN

Location Code :

Scale : 1 : 100000

Date : JUNE 1996

Plate No. : BGB1

151

3.0 LICENCE GEOLOGY

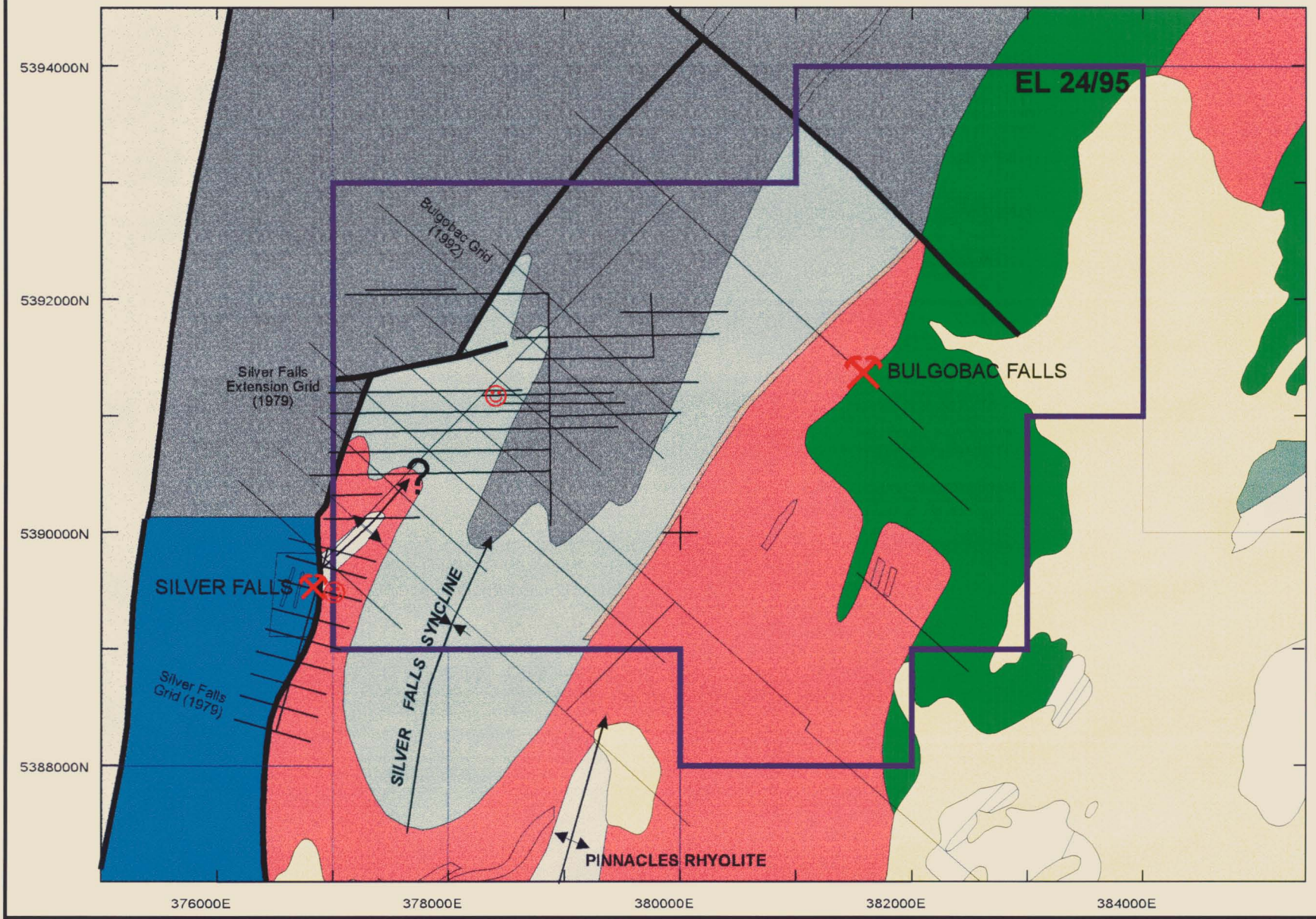
The Bulgobac EL has been covered by several generations of mapping (Mollison, 1980; Collins, 1981; Lorrigan, in Kirsner, 1992; and Poltock, 1993) however, the interpreted geology and correlations discussed below are based on the more recent surveys. The majority of EL 24/95 is underlain by correlates of the Mount Charter Group (including lateral time equivalents of the Que-Hellyer volcanics) Southwell Subgroup and Tyndall Group within a regional north plunging synclinal structure (called the "Silver Falls Syncline" by Pasminco).

The oldest Mount Read Volcanics outcropping on the Bulgobac EL are correlates of the Pinnacles Rhyolite, on the western limb of the syncline and east of Silver Falls (Figure 2). This unit, a possible lateral equivalent of the Que-Hellyer Volcanics and referred to as the Transition Sequence by Pasminco, represents the top of the host sequence to the Browns Tunnel VHMS body, four kilometres to the south. Whether the rhyolite occurs in an anticlinal closure, as suggested by Lorrigan (in Kirsner, 1992) or as a N-S striking unit, as interpreted by Poltock (1993) was unclear at the start of the reporting period, and thus the extent of this prospective stratigraphy, at depth, over the EL, was uncertain.

Overlying the Pinnacles rhyolite is a volcano-sedimentary sequence, derived from a felsic volcanic source, that is a correlate of the Southwell Subgroup (or White Spur Formation) and which covers a large part of the EL.

A poorly understood but stratigraphically important transition to Tyndall Group correlates is marked by a magnetic correlate of the "Comstock Tuff", on the eastern limb of the Silver Falls Syncline. Lower Tyndall Group stratigraphy, including limestones, underlying the Comstock Tuff, hosts VHMS mineralisation at Anthony Basin and Mt. Lyell (Comstock). Minor limestone has been found beneath the "Comstock Tuff" equivalent at Bulgobac Falls, supporting this correlation. A large quartz-feldspar porphyry body in the east, part of the Sock Creek porphyry, intrudes correlates of the Southwell Subgroup and Que River Shale. This porphyry is associated with Cambrian (based on Pb-isotopes) vein style mineralisation at Pasminco's Sock Creek Prospect, on the adjacent EL 37/89, where intersections of 5m @ 7.5% Zn, and 1.7m @ 10.1% Zn are reported (Keane and Orr, 1976). In the western part of the EL volcanogenic lithologies are interpreted to be faulted against Dundas Group sediments (Stitt Quartzite correlates), to the west, by the northern extension of the Rosebery Fault, although the exact position of the fault is unclear (see Poltock, 1992 and Lorrigan in Kirsner, 1993).

Owen Conglomerate equivalents occupy the core of the Silver Falls Syncline in the central part of the EL but much of this area has a partial cover of Pleistocene glacials which mask underlying geology.



EL24/95 - BULGOBAC

SUMMARY GEOLOGY

- Quaternary Glacials
- Owen Conglomerate Correlate (C-V)
- Middle-Upper Tyndall Group Correlate (C-IV)
- Lynchford Tuff (C-IV) (Middle Tyndall Correlate)
- Southwell Subgroup (C-III) (Lower-Middle Tyndall Correlate)
- Sock Creek Porphyry (C-III)
- Pinnacles Rhyolite (C-II)
- Animal Creek Greywacke Correlate
- Sock Creek Volcanics
- Undifferentiated Volcanics and Sediments
- Dundas Group Sediments
- PreCambrian Basement
- Prospects
- Soil/Rock-chip Sample with Cambrian Pb-Isotope Signature

Figure 2

5 cm

N

2km

bur:/bur1/aberfoyle/jobs/Dosfiles/coreldrw/drawings/bgb/c_bgb1.cdr
rhl 25/10/1995

Aberfoyle Resources Limited
EXPLORATION DIVISION

306009

REVISIONS			
Init.	Date	Init.	Date

Location Code :

EL24/95 BULGOBAC

SUMMARY GEOLOGY

Scale: 1:50000

Date: July 1996

Compiled:AMcN/RHL

Drawn: DJ750

Checked:AMcN

File Name: c_bgb1-1.cdr

Plate No.: C_BGB1(1)

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4.0 PREVIOUS EXPLORATION

Modern exploration over the area of EL 24/95 is summarised in Table 1. Exploration has largely focussed on the Silver Falls area.

The Silver Falls prospect itself was discovered by J. Lynch and others in 1891 and lies on Ross Creek approximately 150m west of the western boundary of the current EL 24/95. Modern exploration of this prospect by Aberfoyle and EZ (1978-1981) located, in addition to the galena veining at Silver Falls, a N trending Pb dominated soil anomaly. However, the lack of geophysical encouragement from IP surveys and the Pb-rich Devonian? vein style of the mineralisation, suggested a low-prospectivity for the target VHMS style of mineralisation.

Apart from minor sampling to test the prospects Au potential (Sainty, 1984) no exploration was completed in this area until 1992 when, following a regional mapping project and helimag and gravity surveys, the potential for VHMS mineralisation at Silver Falls was re-assessed and it was concluded that there was potential for significant mineralisation beneath an interpreted anticlinal closure underlain by rhyolite (Pinnacles Rhyolite equivalent) and that the veining seen at surface had been remobilised from this mineralisation. Further investigations involved gridding, mapping, soil sampling and IP surveys. This programme did not support the interpreted anticlinal structure and culminated in the drilling of DDH HRD-1 on EL 1/93, just outside EL 24/95, south of Silver Falls. The mineralisation intersected in this hole was "lead-rich vein style, similar to that exposed at the Silver Falls" (Poltock, 1994), and had an implied Devonian origin.

Exploration of the Bulgobac Falls area commenced with stream sediment surveys completed by Comstaff and CRAE which defined areas of weakly to moderately anomalous Cu, Pb, and Zn around the junction of the Bulgobac and Que Rivers and located outcrops of carbonate±pyrite alteration and veining. Little follow-up exploration was completed in this area but reconnaissance mapping by Pasminco in 1993 located black siltstone interbedded with fossiliferous limestone adjacent to a sericitised porphyry. Traces of galena and sphalerite were found on joint faces in the siltstone (Poltock, 1994). A small grid was apparently established for follow-up but no further work has been reported.

TABLE 1: EL24/95 - PREVIOUS EXPLORATION

Years	EL	Company	Work	Details	Reference
1963-72	EL5/63	Comstaff	Geochemistry:	Regional stream sediment surveys	
1978-79	EL12/72	Aberfoyle/ EZ	Access: Geology: Geochemistry: Geophysics:	4WD access track to Silver Falls, Gridding at Silver Falls and on adjacent EL22/74 mapping of Silver falls grid soils on Silver Falls grid IP on grid	Taylor, 1979
1979-80	EL12/72	EZ	Access: Geochemistry: Geology:	Silver Falls extension grid soils, stream sediment (Silver Falls and regional) mapping (Silver Falls and regional)	Mollison, 1980
1980-81	EL12/72	EZ	Geology: Geochemistry: Geophysics: Access:	mapping (Silver Falls) costeaning, and rock-chip (Silver falls) IP Survey (Silver Falls) Extension of Silver Falls access track.	Mill, 1981
1981-83	EL12/72	EZ	No work in this period		
1984	EL12/72	EZ	Geochemistry:	Rock-chips (Silver Falls)	Sainty, 1984
1985-88	EL12/72	CSR/ Pancon	No work in this period		
1986-87	EL41/85	CRAE	Geochemistry:	stream sediments (Bulgobac Falls)	Sheppard,1987
1988-89	EL17/88	Samisen	No work in this period		
1990	EL2/90	Billiton	Geochemistry:	Regional lithogeochemical study	Randall, 1990
1990-92	EL2/90	Pasminco	Geophysics: Geology: Other:	Gravity and Helimag. Regional mapping and structural study Photogrammetry	Kirsner, 1992
1992-93	EL2/90	Pasminco	Access: Geology: Geophysics: Geochemistry:	gridding (Silver Falls) mapping, sampling, petrology (Silver Falls) Gravity, and interp. of gravity and mag. Data soils (Silver Falls)	Poltock, 1993

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TABLE 1: EL24/95 - PREVIOUS EXPLORATION - continued					
Years	**EL**	**Company**	**Work**	**Details**	**Reference**
1993-94	EL2/90	Pasminco	Access: Geology: Geochemistry: Geophysics:	line cutting (Bulgobac Falls) mapping (Bulgobac Falls) soil (Silver Falls) Review and compilation of electrical data	Poltock, 1994
1994-95	EL2/90	Pasminco	No Work in this period		Saxon, 1995

5.0 CURRENT PROGRAMME

5.1 SILVER FALLS PROSPECT

5.1.1 Introduction

A compilation of previous exploration data indicates the following "Key indicators" to VHMS mineralisation are present at the Silver falls Prospect:

Permissive stratigraphy: Interpreted to be underlain, at moderate depth, by Brown's Tunnel host sequence correlates.

Structure: The Silver Falls mineralisation occurs adjacent to a major structure interpreted as a continuation of the Rosebery Fault. This structure is poorly understood within the EL but is interpreted as a major synvolcanic control on mineralisation at Rosebery Mine, fifteen kilometres to the south.

A major NW trending helimag structure - the Bulgobac Transfer Zone - is interpreted to pass through the Silver Falls area (Figure 3). Structures of this orientation are known to include Cambrian transfer faults throughout the Mt. Read Volcanics. The following evidence suggests co-active Cambrian movement on this structure:

- Western termination coincides with change in the Rosebery Fault and regional stratigraphic orientation indicating a structural domain boundary.
- Coincides with southern termination of a strongly magnetic Middle to Upper Tyndall Group stratigraphy suggesting a provenance change at probable sub-basin boundary.
- Along strike this zone crosses the Boco Cambrian hydrothermal system (footwall style sericite-pyrite in CVC felsic lavas) indicating a potential deep fluid path.

The intersection of this structure with the Rosebery Fault is considered to be a highly prospective location for VHMS mineralisation.

Alteration and geochemistry: Anomalous soil geochemistry hangingwall to the interpreted host horizon.

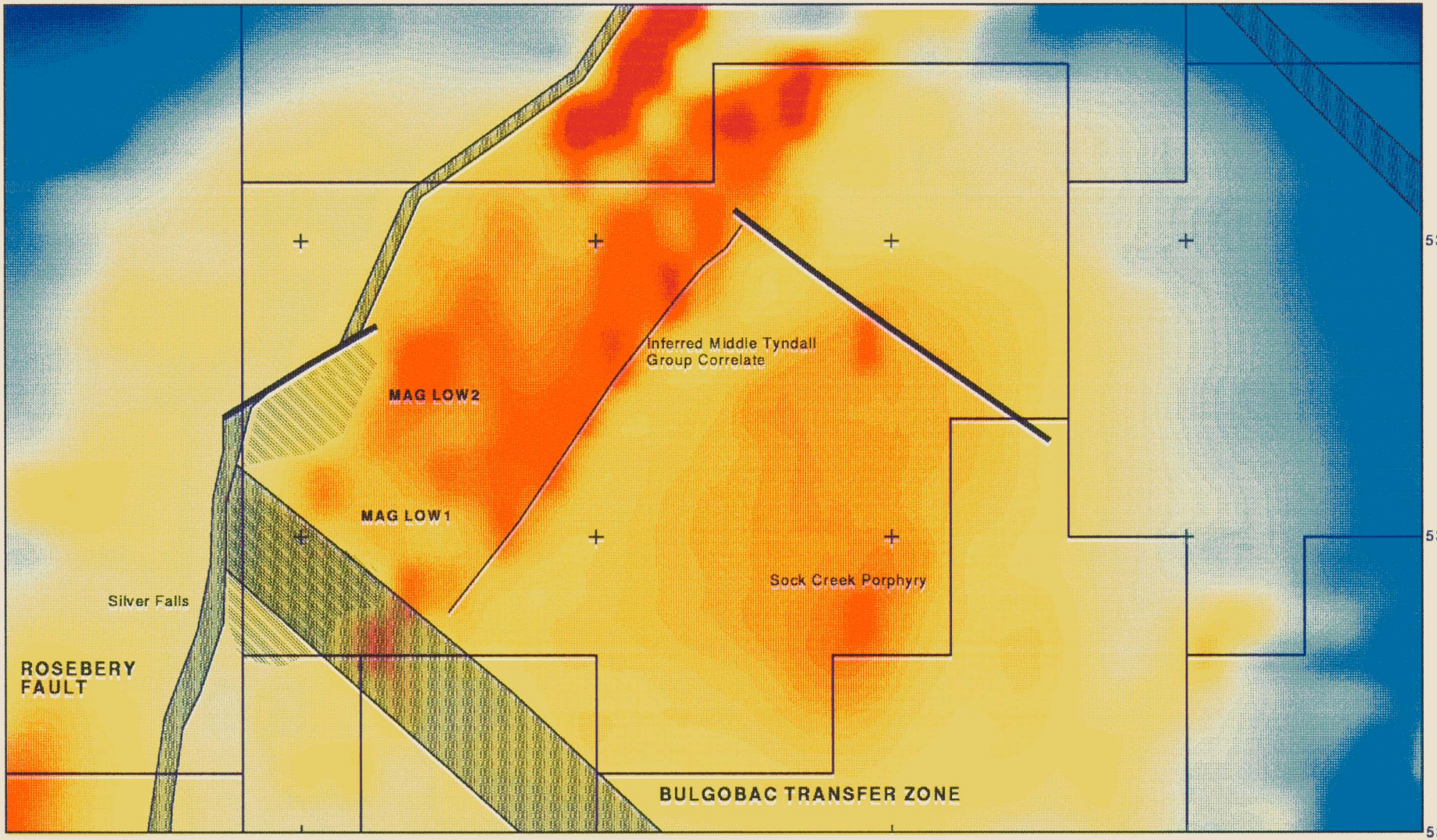
Geophysics: No ground EM has been completed over this prospect.

At the beginning of the reporting period two problems remained unresolved :

- What is the age of the Silver falls mineralisation? Is it Devonian, and related to the Rosebery Fault or Cambrian in origin and re-mobilised from buried VHMS mineralisation?

- Conflicting geological interpretations of the area have been presented by Pasminco geologists (Lorrigan in Kirsner, 1992; and Poltock, 1993).

Work during the current reporting period has focussed on resolving these two issues.



5 cm

N

Figure 3

ABERFOYLE RESOURCES LIMITED

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
Map Projection: TMAMG55			
Geodetic Datum: AGD66			
Location Code:			

TASMANIA
Tasmanian Reconnaissance
EL 24/95 BULGOBAC
Regional Magnetics
Algorithm: TG161

Scale: 1:50000 | Date: October 1995

Compiled: RHL
Printed: JX-730
Traced:
Checked: RHL
Plate No. TG161

306014

5.1.2 Soil Sampling

A total of eighteen -80# soil samples were collected from existing gridlines 12000N (13 samples) and 91090N (5 samples), across known areas of Pb/Zn anomalous soil geochemistry. The aim was to provide material for lead isotope analysis.

Sample locations and assay results are included as Appendix I. Pb values up to 1662 ppm were returned.

5.1.3 Lead Isotopes

In order to characterise mineralisation from the Silver Falls area as Devonian or Cambrian in origin, four samples (628418-420 & 203959) were submitted for lead isotope analysis. Sample 203959 is a galena vein from the Silver Falls workings, collected when the workings were covered by EL 22/74 Marionoak and submitted from Aberfoyles rock store. The remaining samples are from soils, collected from the northern end of the zone of lead/zinc anomalous soils that trend out to the NE from the Silver Falls workings. Analyses were completed by the CSIRO - Division of Exploration and Mining and are presented in Appendix II.

Results indicate a homogeneous Cambrian signature that plots at the margin of the Que River ellipse. They show the soil anomalies and the Silver Falls vein mineralisation potentially could reflect remobilised buried VHMS mineralisation.

5.1.4 Geological Mapping

During the current reporting period mapping has focussed on the Silver Falls area. The aim was to determine the potential extent of prospective Browns Tunnel host existing at moderate depth.

Outcrop geology is shown on Plate BGB5E. Mapping is still in progress and a full interpretation will be presented in the next annual report.

Preliminary interpretation indicates the anticline of Pinnacles Rhyolite interpreted by Lorrigan (1992) does not exist. Instead, the sequence east of the Rosebery Fault is interpreted to be NNE striking and consistently east dipping and younging. Outcropping between the Rosebery Fault and Pinnacles Rhyolite is a feldspar phyric volcaniclastic that may be part of the Browns Tunnel host sequence. Overlying the Pinnacles Rhyolite are typical basal Southwell Subgroup quartz phyric mass flows.

Although the north plunging anticline as proposed by Lorrigan is now not thought to be present, the original model of prospective stratigraphy at depth beneath the rhyolite may still be applicable. East dipping Browns Tunnel host sequence, between the Rosebery Fault and Pinnacles Rhyolite, may host VHMS mineralisation at depth, beneath the soil anomalies extending out from the Silver Falls workings.

5.1.5 Rock Chip Sampling

Whilst mapping, nine rock chip samples were collected and submitted for Cu,Pb,Zn,Ag and Au assay. Sample locations are shown on Plate BGB5E and assay results are included as Appendix III.

Several contain elevated lead and / or zinc, with maximum values of 3900ppm and 1015ppm (separate samples) respectively. None returned Au or Ag above detection.

5.2 BULGOBAC FALLS PROSPECT

5.2.1 Introduction

Key indicators of VHMS prospectivity of the Bulgobac Falls Prospect are considered to be:

Permissive stratigraphy: Limestone footwall to the "Comstock Tuff" equivalent (however, a reconnaissance visit failed to relocate the limestone). In the southern MRV, VHMS mineralisation is associated with andesitic volcanics at this stratigraphic position. At Bulgobac no andesitic volcanics are reported but exposure is poor. Southwell Subgroup felsic volcanics appear to comprise the footwall sequence beneath the Comstock Tuff correlate within the EL but extrapolation of the Pinnacles Rhyolite down plunge from the south suggests that the prospective Browns Tunnel host sequence may lie within EM range. About three kilometres of untested strike of this stratigraphy occur in the EL.

Structure: Recent mapping and stratigraphic re-interpretation of the Bulgobac Falls area indicates a possible NW trending Cambrian structure - the Bulgobac North Zone - supported by the following evidence:

- NW trending magnetic break.
- Change in magnetic character and morphology of the Sock Creek Porphyry: to the north the porphyry is non-magnetic and completely replaces the Southwell Subgroup. To the south it is moderately magnetic and interfingers with that sequence.
- Northern termination of broad (deep) magnetic source beneath Sock Creek Porphyry.

The Rosebery Fault - Bulgobac Zone - Bulgobac North Zone define a potential Cambrian extensional sub-basin.

Alteration and geochemistry: Weak to moderately anomalous stream sediments, anomalous sericite-quartz alteration and disseminated sphalerite-galena reported by EZ Co. (Mill, 1981; Poltock, 1993).

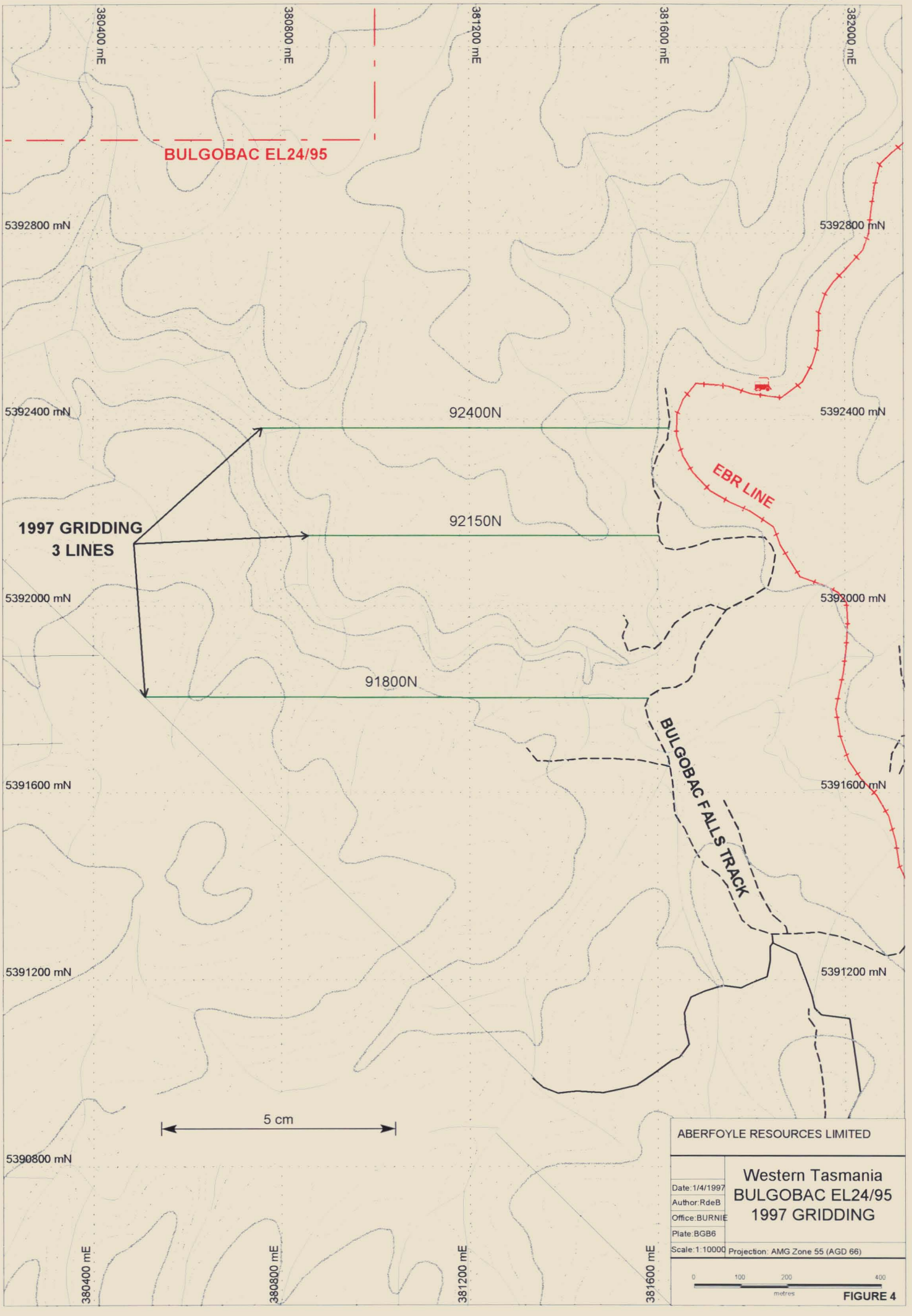
Geophysics: No surface EM has been completed over this prospect.

5.2.1 Research

An Honours project on the volcanology, stratigraphy and structure of the Bulgobac Falls area commenced during the reporting period. The project is supported by Aberfoyle and undertaken by P. Buxton under the supervision of Dr. R.F. Berry at the University of Tasmania. Results of this project, to be reported next year, will form a basis on which to assess the prospectivity of this poorly mapped and understood area.

To assist in accessing the study area a total of 2.75 km of walking tracks have been cut, extending west from the Bulgobac Falls 4WD track (see Figure 4 for locations).

306018


380400 mE
380800 mE
381200 mE
381600 mE
382000 mE
BULGOBAC EL24/95
5392800 mN
5392400 mN
5392000 mN
5391600 mN
5391200 mN
5390800 mN
92400N
92150N
91800N
1997 GRIDDING
3 LINES
EBR LINE
BULGOBAC FALLS TRACK
5 cm
ABERFOYLE RESOURCES LIMITED
Western Tasmania
BULGOBAC EL24/95
1997 GRIDDING
Date:1/4/1997
Author:RdeB
Office:BURNIE
Plate:BGB6
Scale:1:10000
Projection: AMG Zone 55 (AGD 66)
0
100
200
400
metres
FIGURE 4

6.0 SUMMARY OF EXPENDITURE

Expenditure for the twelve months to the 31/3/97 is as follows:

Geology	$27940.00
Geochemistry	$4570.00
Access	$170.00
Other Services	$4350.00
Sub Total	$37030.00
Administration	$5430.00
TOTAL	**$42460.00**

7.0 CONCLUSIONS

In the coming year work will continue to focus on the Silver Falls area.

A surface EM program covering approximately two strike kilometres of the NE trending soil anomalies is proposed. Contingent on results, a 400 metre helicopter supported diamond drill hole would be required to test any quality conductor detected by the survey.

At Bulgobac Falls future work will depend on the results of the mapping project currently in progress.

8.0 REFERENCES

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APPENDIX I

ABERFOYLE EXPLORATION

SURFACE GEOCHEMISTRY DATA LEDGER
SOIL SAMPLES

LICENCE: EL24/95

TOTAL: 18 samples

CODE: 2495bgSO

PROSPECT: BGB

									ORE SUITE							TRACE SUITE				CALCULATED	
									Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr	Tl	P2O5	Tl/Zr	P2O5/TiO2
									ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	wt%		
SAMPLE#	AMGE	AMGN	GRID	EAST	NORTH	METHOD	HORIZON	COLLECTED	GA101	GA101	GA101	GA101	GG309	GX401	GX401	GX401	GX401	GX401	OX408		
628404	378400	5391090		10200	12000	PA	C	AMcN: 16/0	45	46	992	-2									
628405	378393	5391097		10190	12000	PA	C	AMcN: 16/0	26	240	182	-2									
628406	378387	5391103		10180	12000	PA	C	AMcN: 16/0	74	244	135	-2									
628407	378380	5391110		10170	12000	PA	C	AMcN: 16/0	62	116	113	-2									
628408	378373	5391117		10160	12000	PA	C	AMcN: 16/0	85	176	262	-2									
628409	378367	5391123		10150	12000	PA	C	AMcN: 16/0	51	234	193	-2									
628410	378360	5391130		10140	12000	PA	C	AMcN: 16/0	55	288	343	-2									
628411	378410	5391080		10210	12000	PA	C	AMcN: 16/0	12	738	1523	-2									
628412	378416	5391072		10220	12000	PA	C	AMcN: 16/0	20	526	468	-2									
628413	378422	5391064		10230	12000	PA	Chip	AMcN: 16/0	37	208	169	-2									
628414	378428	5391056		10240	12000	PA	C	AMcN: 16/0	33	640	333	-2									
628415	378434	5391048		10250	12000	PA	C	AMcN: 16/0	32	232	211	-2									
628416	378440	5391040		10260	12000	PA	C	AMcN: 16/0	37	76	110	-2									
628417	378430	5391090				PA	C	AMcN: 16/0	49	654	162	-2									
628418	378440	5391090				PA	C	AMcN: 16/0	13	1260	752	-2									
628419	378450	5391090				PA	Chip	AMcN: 16/0	14	1662	1114	-2									
628420	378460	5391090				PA	C	AMcN: 16/0	33	900	1122	-2									
628421	378470	5391090				PA	C	AMcN: 16/0	20	394	588	-2									

APPENDIX II

Sample	PB (ppm)	Description	Location (AMG)	
203959		Galena veined felsic volcanic	5389390N	376870E
628418	1260	'c' horizon soil	5391090N	378440E
628419	1662	'c' horizon soil	5391090N	378450E
628420	900	'c' horizon soil	5391090N	378460E

CSIRO
AUSTRALIA

DIVISION OF EXPLORATION AND MINING

EXPLORATION AND MINING REPORT 299C

PB ISOTOPIC ANALYSIS OF SAMPLES FROM THE SILVER FALLS PROSPECT, BULGOBAC, TASMANIA

G.J. Denton, G.R. Carr, M.J. Korsch and B.L. Gardner

Sirotope

Prepared for

Aberfoyle Resources Ltd

August 1996

CONFIDENTIAL REPORT

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Dr B E Hobbs, Chief CSIRO Exploration and Mining	1
Dr G R Carr, CSIRO Exploration and Mining	1
Mr G J Denton, CSIRO Exploration and Mining	1
Confidential Records Section (North Ryde)	1

Copy No ..1..... of 6 copies

AIM

To determine the Pb isotopic composition and metallogenic association of four samples (a galena, and three soil samples), from the Silver Falls prospect, Bulgobac, Tasmania, and to establish whether they are Cambrian or Devonian. If they are Cambrian, determine if their Pb isotopic signature is similar to the Que River, Hellyer or Rosebery ore bodies.

SAMPLES

Four samples were provided for Pb isotopic analysis with the following information.

Sample	Pb conc. (ppm)	Description	Location	(AMG)
203959	N/A	galena veined felsic volcanic	376870E	5389390N
628418	1260	'c' horizon soil	378440E	5391090N
628419	1662	'c' horizon soil	378450E	5391090N
628420	900	'c' horizon soil	378460E	5391090N

RESULTS

The results of the analyses are listed in Table 1 and Figure 1.

Table 1. Pb isotopic composition of a galena and three soil samples from the Silver Falls prospect, Bulgobac, Tasmania.

	Client No.	6/4	7/4	8/4	Pb (ppm)	Date Analysed
1	203959	18.280	15.580	38.055	galena	12/06/96
2	628418	18.291	15.598	38.101	1000	27/06/96
3	628419	18.294	15.602	38.111	925	27/06/96
4	628420	18.286	15.592	38.080	704	27/06/96

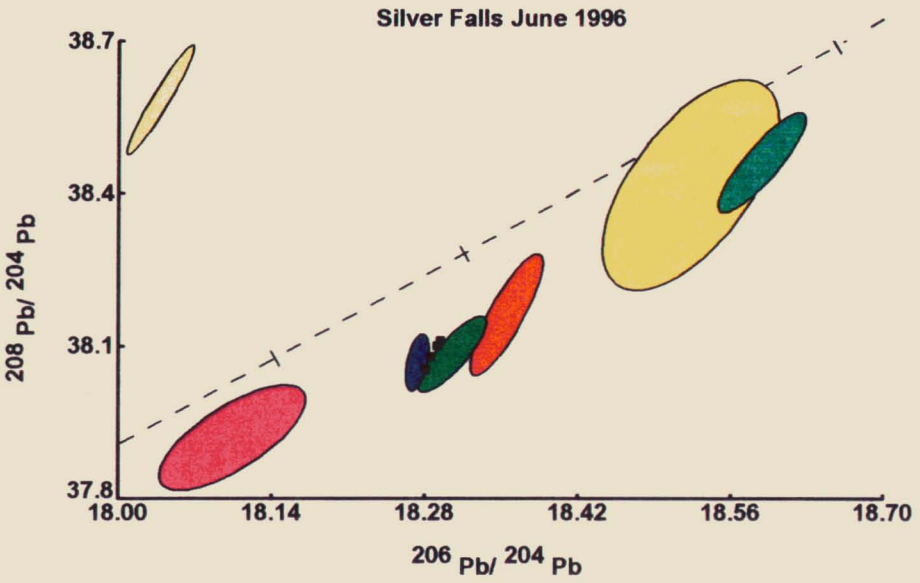
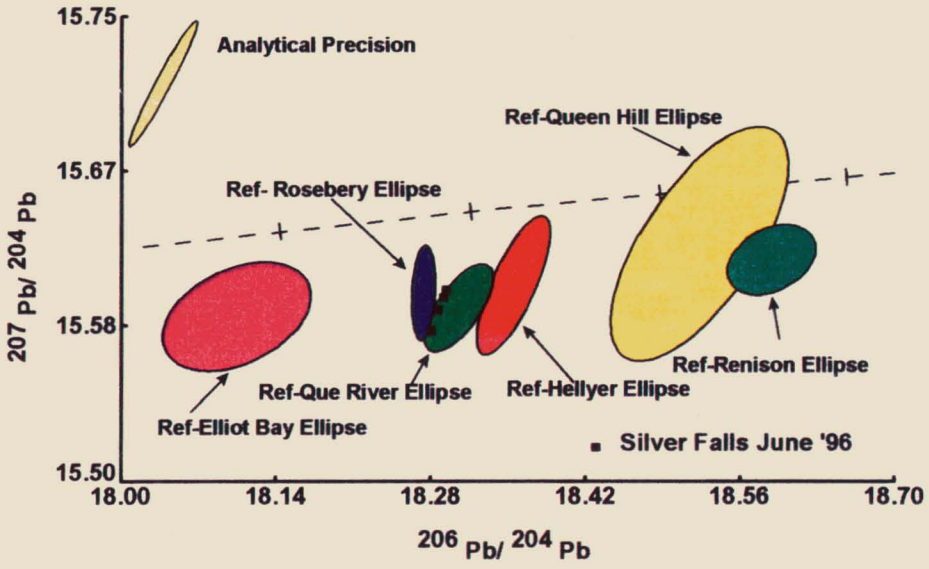


Figure 1. $^{208}Pb/^{204}Pb$ vs. $^{206}Pb/^{204}Pb$ and $^{207}Pb/^{204}Pb$ vs. $^{206}Pb/^{204}Pb$ plots of four samples from the Silver Falls prospect Bulgobac,

Figure 1. Cont.

Tasmania. Pb isotopic signatures of major ore bodies in the region are shown for comparison.



INTERPRETATION

Galena (PbS) samples will always maintain their initial Pb isotopic composition due to their high concentration of Pb. The three soil samples have high Pb concentrations which implies that they have probably maintained the initial Pb isotopic ratios of their precursor material. The isotopic composition of these samples falls within the Cambrian population on the $^{208}Pb/^{204}Pb$ vs. $^{206}Pb/^{204}Pb$ and $^{207}Pb/^{204}Pb$ vs. $^{206}Pb/^{204}Pb$ plots.

The Pb signature of these samples is homogenous and plots at the margin of the Que River ellipse (fig. 1). The Que River and Rosebery ellipses do overlap slightly but the precise signature of the samples, suggests that it is more likely that they have an association with the Que River ore body.

The level of understanding between the Pb isotopic composition of ore bodies and host rocks is understood sufficiently in Western Tasmania to place this study in Category 2 of Appendix 1.

Appendix 1 Level of Confidence of Interpretations

Interpretations of the economic significance of exploration samples using Pb isotopes are based on comparisons with a Pb isotope database of other mineralisation within the relevant geological province. The level of confidence of such interpretations is related to the amount and quality of data available and the level of understanding of the relationship between these "signatures" and the nature and timing of mineralisation in the context of the overall tectonic evolution of the province. A threefold classification has been developed to signify the confidence level for interpretations in all Australian geological provinces. Only the Lachlan Fold Belt falls into Category 1. The majority of prospective Australian geological provinces fall into Category 2 and it is the aim of research within the Division of Exploration and Mining to upgrade these to Category 1.

Category 1 Information

Lead isotopic signatures of each hydrothermal event represented in a geological province can be discretely defined (There are at least 10 examples of each event). There is a very good understanding of the metallogenic history of the prospect region, including the ages of different hydrothermal events and the style of mineralisation that is likely to be associated with each event. Interpretations based on Category 1 information can discriminate between mineralisation or anomalous surface geochemistry that has derived from either;

1. the main mineralisation window of a major mineralising epoch , or
2. minor mineralisation from waxing or waning stages of a major epoch or where only small hydrothermal cells were developed, or
3. minor mineralisation from an overprinted (epigenetic) hydrothermal event, or
4. near surface concentration due to weathering processes (false anomalies)

Category 2 Information

There are a number of known Pb isotopic signatures in a geological province, however, there is an incomplete understanding of the relationship of these signatures to metallogenesis and the timing of hydrothermal activity. Although discrimination of events can be made based on these signatures it is with a significantly reduced degree of confidence. Interpretations based on Category 2 information can discriminate between mineralisation or anomalous surface geochemistry that has derived from either,

1. a major mineralising epoch, or
2. minor mineralisation from an overprinted (epigenetic) hydrothermal event, or
3. near surface concentration due to weathering processes (false anomalies)

Category 3 Information

Lead isotopic signatures, and/or the metallogenic framework are only poorly understood in the prospect region. Discrimination can be made in some cases based on general principles and on comparisons with other similar, better understood provinces. Interpretations based on Category 3 information can discriminate between mineralisation or anomalous surface geochemistry that has derived from either;

1. small scale hydrothermal cells, or
2. near surface concentration due to weathering processes (false anomalies)

306031

APPENDIX III

ABERFOYLE EXPLORATION

SURFACE GEOCHEMISTRY DATA LEDGER

LICENCE: EL24/95

TOTAL: 9 samples

CODE: 2495bgRC

PROSPECT: BGB

SAMPLE#			TYPE	COLLECTED	PREPS	ROCKTYPE	PET RE	ORE SUITE Cu ppm GA101	Pb ppm GA101	Zn ppm GA101	Ag ppm GA101	Au ppm GG309	Ba ppm GX401	As ppm GX401	TRACE SUITE Cr ppm GX401	Zr ppm GX401	Ti ppm GX401	P2O5 wt% OX408	CALCULATED Ti/Zr	P2O5/TiO2	Al
628671	377080	5389440	RC	AMcN: 2/01/	G	GnVndSh		11	3900	860	-2	-0.008									
628673	377050	5389510	RC	AMcN: 2/01/	G	R-xv		41	260	231	-2	-0.008									
628674	377190	5390260	RC	AMcN: 2/01/	G	R-L		-4	294	45	-2	-0.008									
628675	377160	5390320	RC	AMcN: 2/01/	G	R-Lv		-4	279	65	-2	-0.008									
628676	377170	5390310	RC	AMcN: 2/01/	G	R-Lv		-4	106	118	-2	-0.008									
628853	377180	5390800	RC	AMcN: 2/01/	G	Si vlc		-4	10	284	-2	-0.008									
628854	377190	5390800	RC	AMcN: 2/01/	G	mas vlc		16	57	1015	-2	-0.008									
628855	377210	5390805	RC	AMcN: 2/01/	G	Si vlc		-4	14	249	-2	-0.008									
628856	377320	5390940	RC	AMcN: 2/01/	G	YLv		36	-5	292	-2	-0.008									

306033

APPENDIX IV

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
O	Dacite
A	Andesite
B	Basalt
Y	Polymict
Ss	Sandstone
Sh	Shale
Slt	Siltstone
Ba	Barite
Py	Pyrite
BMS	Base Metal Sulphide
Ch	Chert
TB	Tertiary Basalt
JDo	Jurrasic Dolerite
OCg	Ordovician Conglomerate

LITHOLOGY TEXTURE / FORM

l	lava
lb	lava breccia
pl	pillow lava
av	ash volcaniclastic
flv	fine lapilli volcaniclastic
mlv	medium " "
clv	coarse " "
bv	breccia "
xv	crystal "
ves	vesicular
por	porphyritic
eux	eutaxitic
fbn	flowbanded
gnlr	granular
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

fr	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 / Fu3. 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.sv	28	Rhyolitic volcaniclastic
YR.av YR.lv YR.bv	65	Rhyolitic Polymict volcaniclastic
D.l D.lb	63	Dacite lava, lava breccia
D.av D.lv D.bv D.sv	54	Dacite volcaniclastic
YD.av YD.lv YD.bv	66	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.sv	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.sv	49	Basalt volcaniclastic
YB.av YB.lv YB.bv	42	Basaltic Polymict volcaniclastic
Y.av Y.lv Y.bv	66	Polymict rock
av	52	Ash volcaniclastics (composition not determined)

SEDIMENTS

Ss Gw	71	Sandstone, micaceous Greywacke
Sh	46	Shale, black (carbonaceous, pyritic)
Slt	69	Siltstone, tuffaceous Siltstone

SULPHIDES, SULPHATES

BMS	21	Base Metal Sulphide rock
MPy	29	Massive pyrite rock
GS P	23	Glassy silica, colloform pyrite rock
Ba	22	Barite

POST CAMBRIAN ROCKS

TB	8	Tertiary Basalt
JD	32	Jurassic Dolerite
OCg	20	Ordovician Siliciclastics

ALTERATION ROCK TYPES

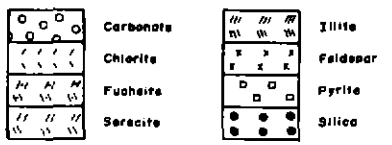
HA	9	Highly altered rock
Qtl	18	Quartzite
Q-lv Q-bv	17	Quartzite fragmental

PARTIAL STRATIGRAPHIC COLUMN

TB	8	TERTIARY BASALT
JD	32	JURASSIC DOLERITE
OCG	20	ORDOVICIAN SILICICLASTICS
URS	66	UPPER RHYOLITIC SEQUENCE
QRS	66	QUE RIVER SHALE
MGW	71	MT. CHARTER MICACEOUS GREYWACKE
HBS	46	HELLYER BASALT SEQUENCE
HVS SWS	86	HANGINGWALL VOLCANICLASTIC SEQUENCE / SWITCHBACK VOLCANICLASTIC SEQUENCE
HMS	21	HELLYER MINERALISED SEQUENCE
FPS	48	ANDESITE FELDSPAR PHYRIC SEQUENCE

ALTERATION SYMBOLS

Overprint on "HA" symbol (Combinations can be used)



SYMBOLS MAC79,110 AND MAC89,111 SERIES

(SYMBOLS AS SHOWN IN ABEX "STANDARDS FOR GEOLOGICAL DRAWINGS", JAN. 1983)

LINE THICKNESS / 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	50 350	Bedding, strike, dip
·25/50	50 350	Foliation, strike, dip
·25/50	50 350	Joint, strike, dip
·5/50,100	F 50 300 70	Fault, definite, strike, dip, mineralogy
·5/100	F ?	Fault, inferred
·35		Shear zone
·35/60	DDH	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 385012	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	⊕ MT17	Peg with number, stadia surveyed
·25		Alteration boundary

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

300034

RMD 554

306035

GEOLOGICAL MAPPING ABBREVIATIONS

Abundant	abn
Adularia	Adl
Agglomerate	agg
Albite	Ab
Alkali feldspar	Afd
Altered	ald
Alteration	alt
Amphibolitic	amb
Amphibole	Amb
Amygdaloidal	amg
Andalusite	An
Andesite	A
Angular	ang
Ankerite	An
Apatite	Apt
Aplite	Apl
Approximate	apx
Arcuate	ar
Arenaceous	arn
Argillaceous	arg
Argillite	Arg
Arkose	Ak
Arkosic	ak
Arsenopyrite	Ap
Ash vlcl	av
Autobrecciated	aub
Average	ave
Banded	bnd
Barite	Ba
Basalt	B
Bearing	brg
Bedded	bed
Biotite	Bio
Black	bk
Black shale	Bsh
Blue	bl
Boulder	bld
Breccia	b
Brecciated	bx
Breccia vlcl	bv
Bright	brt
Brown	br
Calcareous	cc
Calcite	Cc
Carbonaceous	carb
CarbonateCo	
Cassiterite	Cass
Cavernous	cav
Cementedcsm	
Chalcopyrite	Cp
Chert	Ch
Chlorite	Cl
Chromite	Cr
Chromitiferous	cr
Clast	_cst
Clast-supported	CS
Clay	cy
Cleavage	cvg
Coarse	c
Coarse grained	cg
Colloform	coll
Colour	col
Common	com
Conglomerate	Cg
Conglomeratic	cg
Crimson	cm
Crystal	x
Crystal rich	xr
Crystal vlcl	xv
Dacite	D
Dark	dk
Dense	dns
Devitrification	dv
Diorite	Di
Disseminated	Ds
Dolerite	Dol
Dolomite	Dm
Dyke	dy
Elongated	el
Emphasised	emp
Epiclastic (noun)	E
Epidote	Ep
Euhedral	euh
Eutaxitic	eux
Fabric	fab
Fault	F
Fault zoneFZ	
Feldspar	Fd
Feldspathoid	Fdd
Feldspar phyric	fp
Felspathicfel	
Ferruginous	fer
Fibrous	fb
Fine	f
Fine grained	fg
Fissile	fis
Flowbanded	fbn
Fluorite	Fl
Foliated	fo
Fragments	fr
Fuchsite	Fu
Gabbro	Gb
Galena	Gn
Glass	Gl
Glassy	gl
Gossan	Gos
Granite	Gr
Granodiorite	Gd
Granular	glr
Graphite	Gt
Graphitic	gt
Gravel	gr
Green	gn
Grey	gy
Greywacke	Gw
Groundmass	gm
Haematite	Hm
Hornblende	Hb
Hyaloclastite	hyb
Ignimbrite	Ig
Illite	Ill
Interbedded	ibd
Intercalated	icl
Intrusive	I
Joint	J
Jurassic	Ju
K-Feldspar	Kf
Khaki	kh
Laminatedlm	
Lapilli vlcl	lv
Lava	l
Lava breccia	lb
Leached	lch
Leucite	Lct
Leucitite	Ltt
Limonitic	Lim
Light	lgt
LimestoneLst	
Lithic	lh
Magnetite	Mt
Manganese	Mn
Marl	Ml
Massive	mas
Matrix	mtx
Matrix-supported	XS
Matrix dominated	md
Medium	med
Medium grained	mg
Metamorphosed	meta
Mica	Mic
Micaceous	mic
Mineralised	min
Minor	mnr
Mixed	mxd
Moderately sorted	ms
Mottled	mtl
Mudstone	Mst
Nodule	nd
Off white	ow
Olivine	Ol
Oolitic	oo
Orange	or
Ordovician	O
Oxidised	ox
Pale	pl
Patchy	pat
Pebble	peb
Pebbly	pby
Peperitic	pep
Perlitic	prl
Pervasive	per
Phenocrysts	phn
Phyllite	phyl
Phyric	p
Picrite	Pic
Pillow lavapl	
Pink	pk
Polymict	Y
Poorly sorted	ps
Porphyry	Por
Porphyritic	por
Predominantly	pred
Probable	prob
Pumice	Pu
Pumiceous	pu
Purple	pp
Pyrite	Py
Pyritic	py
Pyrolusite	Pr
Pyroxena	Px
Pyrrhotite	Po
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
Sericite	Se
Serpentine	Srp
Shale	Sh
Sheared	shd
Sheeted	sht
Siderite	Sid
Silica	Si
Siliceous	sil
Siltstone	Slt
Slickenside	slk
Sphalerite	Sp
Spotted	spt
Spotty	spy
Stockworkstw	
Stratabound	stb
Strong	str
Structure controlled	stc
Syngenetic	syn
Talc	Tc
Tertiary	T
Tourmaline	Tm
Trace	tr
Trachyte	Tr
Tuff	Tf
Tuffaceous	tf
Variable	var
Variolitic	vr
vein	vn
Very	v
Vesicular	ves
Vitric	vt
Volcanic	vlc
Volcaniclastic	Vc
Volcaniclastic Ss	Vs
Volcaniclastic Cg	VCg
Weak	wk
Weathered	wth
Well sorted	ws
White	wh
Yellow	yw

97-3998

ANNUAL REPORT - EL 24/95
BULGOBAC - ABERFOYLE
A. W. MCNEILL

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

North Western Tasmania
Bulgobac EL24/95
Geological Outcrop Mapping
Sheet E

Date:4/12/1996	
Author: RdeB	
Office: TASMANIA	
Drawing: BGB5E	
Scale: 1:2500	Projection: AMG Zone 55 (AGD 66)

0 25 50 100
metres

5 cm

306036