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EXPLORATION LICENCE 24/84

MT. ROMULUS

TASMANIA

REPORT ON EXPLORATION

TO 25th NOVEMBER 1989

MICROFILMED

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SEPTEMBER 1989.

89-3040

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D. TABLE OF GEOLOGICAL ABBREVIATIONS

P L A T E S

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MROM 17B 10 MILE CREEK GRID OUTCROP GEOLOGY - SHEET B

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MROM 20B. STREAM SEDIMENT ASSAY RESULTS

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MROM 22 MT ROMULUS EL 24/84 LOCALITY PLAN

MROM 23B REGIONAL MAPPING OUTCROP GEOLOGY

1. SUMMARY

This report summarises exploration activity on EL 24/84 Mt. Romulus, conducted by Aberfoyle Resources Limited for the 12 months to the 25th November, 1989.

All exploration was helicopter supported from Tullah to base camp situated on the slopes of Mount Remus.

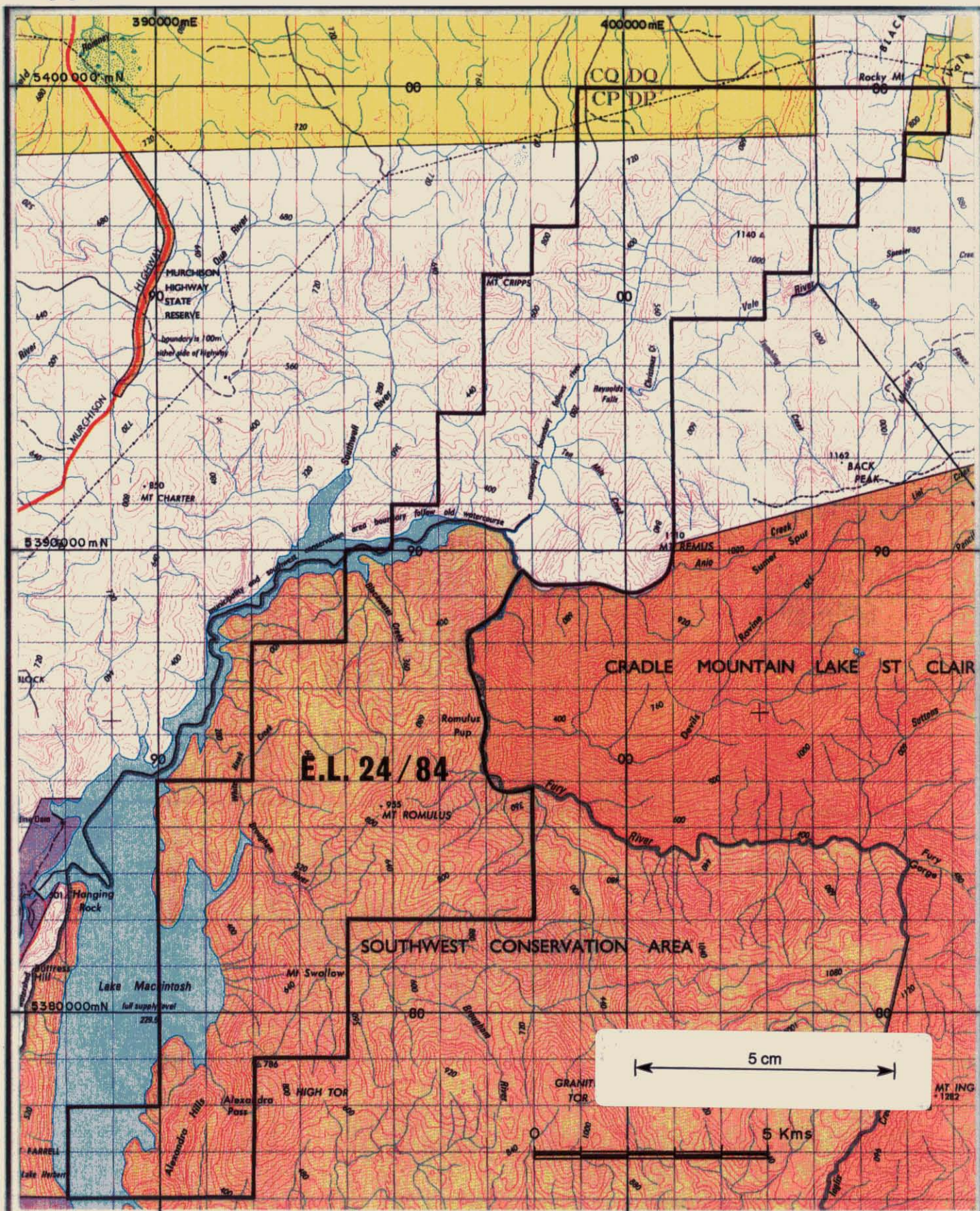
Extensions to the existing CRA grid at Ten Mile Creek was followed by mapping and soil sampling over a haematite stockwork contained within the volcanics of the Cambrian Tyndall Group.

A stream sediment sampling program was undertaken northeast of the existing mineralization, in the drainage system of the Vale River, to locate possible strike extensions of the Ten Mile Creek stockwork.

2. INTRODUCTION

Exploration Licence EL 24/84 Mt. Romulus of 119 square kilometres is situated between the western edge of the Cradle Mountain-Lake St. Clair National Park and Lake Mackintosh (see Plate MROM 22). The area is rugged and heavily forested and to date there is no road access to the majority of the licence.

Since the 28th April, 1988 the area has been explored by Aberfoyle Resources Limited under the terms of the Mount Read Volcanics Joint Venture with CRA Exploration Pty. Ltd.



Aberfoyle Resources Limited EXPLORATION DIVISION

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REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA
MT. ROMULUS E.L. 24/84 CRA J.V.
LOCALITY MAP

Compiled : RJH
Drawn : Lands Dept.
Traced : RJE
Checked :
Plate No. : MRom. 22

Location Code :

Scale : As shown

Date : October, 1989

3. EXPLORATION HISTORY

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A full account of previous exploration is contained in Aberfoyle Exploration Report - Mount Romulus 1. Report on Exploration Activity for the 12 months to October 1988.

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4. REGIONAL GEOLOGY

The regional geology of EL 24/84 Mount Romulus is outlined in Aberfoyle Exploration Report - Mount Romulus 1. Report on Exploration Activity for the 12 months to October 1988.

5. EXPLORATION ACTIVITY - 1989

5.1 Ten Mile Creek

5.1.1 Introduction

A reconnaissance mapping and sampling program was conducted by Aberfoyle in October, 1988 to determine the nature of the Au anomalous haematite stockwork mineralisation occurring in the Cambrian Bond Range Porphyry.

Results proved both encouraging and enigmatic. Further mapping in conjunction with rock chip and soil sampling over the haematite stockwork was recommended.

In the period February to March, 1989 the existing CRAE grid was infilled and extended to the northeast facilitating detailed mapping, and the collection of 322 'C' horizon soil samples over the zone of mineralization.

An orientation stream sediment survey was also conducted to act as a comparison for -80 mesh and BCL (Bulk Cyanide Leach) techniques. This survey also covered drainage from a possible northeast extension to the haematite mineralisation.

5.1.2 Geology (see Plates MROM 17B, 17C, 18B & 18C)

5.1.2.1 Cambro-Ordovician - €Oou

The Cambro-Ordovician geology in the Ten Mile Creek area is dominated by a suite of siliclastics known as the Owen Conglomerate. Facies range from fine grained quartzose sandstones and quartzites to pebble conglomerates.

Three discrete facies can be recognised from this sequence. Possibly the oldest, is a unit of pink to grey, medium grained quartzite with a minor micaceous component. Conformably overlying these quartzites is a unit of pink siliceous conglomerate, containing common pink chert clasts, interbedded with fine to medium grained sandstones. The youngest rocks of the sequence appear as grey siliclastic sandstones, striking in a north to northeasterly direction with moderate dips.

In most cases the only evidence of these rocks appears as float on the slopes of Mount Remus. For this reason the subcrop position of these units cannot be accurately defined. It would appear however that the direction of younging is essentially to the northwest. For the purposes of interpretation the whole sequence has been grouped together as €Oou.

5.1.2.2 Cambrian - €Rint

The entire Cambrian sequence appears as a pink-brown massive quartz-biotite-feldspar-hornblende porphyry of broadly rhyolitic composition, known as the Bond Range Porphyry. This unit outcrops on the western slopes of Mount Remus and attains a

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maximum thickness of around 3km in the Tumbling Creek region. Contact relationships with the Precambrian sediments in the Mount Remus area appear fracture related and suggest an intrusive origin for the porphyry. Thin section textures are also indicative of mildly intrusive rocks. The unconformable contact with the Cambro-Ordovician is disrupted by two relatively minor reverse faults with approximately 100-200 metres of movement.

Phenocrysts of quartz, plagioclase and occasional K-feldspar range up to 1cm in diameter. Phenocrysts of biotite and lesser hornblende are generally smaller around 2 to 4mm. Matrix composition is essentially quartz, plagioclase and K-feldspar. Accessory minerals include pyrite and leucoxene, with rare apatite, rutile and zircon.

Subordinate suites of a more felsic facies may indicate a differentiation trend in younger intrusives.

Occasional quartz/chlorite and rare quartz/feldspar veins crosscut the porphyry and may be related to later phases of intrusion.

5.1.3 Alteration

Alteration assemblages in the Bond Range Porphyry are typically phyllosilicate in nature with muscovite-sericite (after feldspar) and chlorite-illite, limonite-haematite (after biotite, amphibole). Patchy haematite alteration is also, in some cases, a result of martitised primary magnetite.

Strong pervasive haematite and chlorite alteration appears as both massive and selective replacements, forming a halo around the haematite stockwork.

The siliclastics of the Cambro-Ordovician generally exhibit weak phyllosilicate alteration of their matrix and in some cases haematite alteration broadly analogous to that in the Bond Range Porphyry.

5.1.4 Mineralisation

The only mineralisation detected during mapping traverses was the Ten Mile Creek haematite stockwork within the Bond Range Porphyry, which occurs as irregularly spaced stockworks and veins of specular haematite up to 10mm in thickness.

The vein assemblage also includes minor quartz, K-feldspar and phlogopitic mica. Rare inclusions of chalcopyrite and in one case gold were detected within the interstitial quartz grains.

The stockwork appears to become sporadic and weaker in nature to the northeast, and does not persist to any great extent past Line 10400N. In contrast, the mineralisation trend is open to the southwest, and appears to continue well past Line 8800N.

No mineralisation, apart from minor disseminated pyrite, was detected in the Cambro-Ordovician siliclastics.

5.1.5 Geochemistry

5.1.5.1 Rockchips (see Appendix A1)

A total of 45 rockchips samples were taken for geochemical analysis. Sample 431521 was selected for whole rock analysis (see Appendix A4) and sample 431546 was sent to the C.S.I.R.O for Pb isotope analysis (see Appendix C). ←

Six samples were considered anomalous for the elements tested:

- Sample 431504, containing 1940 ppb Au and 540 ppm Cu, was taken from a strongly chlorite altered piece of porphyry float. Further sampling of similar float material (431541, 542 & 543) were considered weakly anomalous (max. 44 ppb Au, 225 ppm Cu).
- A sample of gossaneous sandstone float (431502) was anomalous for Pb (3300 ppm), Ag (4.5 ppm) and As (34 ppm). A follow-up sample of the same material (431546) returned similar results of 3000 ppm Pb, 6.0 ppm Ag and 25 ppm As.
- Sample 431524, a highgraded channel sample of a quartz/chlorite vein in altered porphyry, returned values of 132 ppb Au and 415 ppm Cu.
- Another two samples 431534 & 539 taken from the haematite stockwork zone were anomalous in Au at 106 ppb and 123 ppb respectively.

Results of the Pb isotope analysis on sample 431546 plot within the Que/Hellyer field and indicate the mineralisation to be of possible Middle to Late Cambrian age.

5.1.5.2 Soils (see Plates MROM 21B & 21C and Appendix A2)

A total of 322 'C' horizon soil samples were taken. All samples were analysed for Cu, Pb, Zn, Au, Ag, Fe & As. Sample 516031 was sent to the C.S.I.R.O. for Pb isotope analysis (see Appendix C).

A number of zones were considered anomalous for the above elements.

Copper

A significant broad copper anomaly (max. 300 ppm) is concentrated over the southwestern end of Line 10000N and trends in a northeasterly direction into the adjacent licence EL 89/87 Back Peak. The anomaly is displaced some 200 metres between Lines 10400N and 10600N by a reverse fault. Although this anomalous zone follows the approximate trend of the haematite stockwork, it appears to cover a much larger area than could be attributed to the stockwork itself.

This broader feature could be a result of downslope chemical dispersion, but may also be related to the haloe of pervasive chlorite alteration surrounding the haematite stockwork.

Lead

Two small zones anomalous in Pb appear over Cambro-Ordovician rocks on Lines 9400N and 11000N.

On Line 9400N the anomaly (max. 125 ppm) is co-incident with a large vein of massive quartz in Cambro-Ordovician siliclastics, several metres in thickness. No field evidence exists for the anomalism on Line 11000N (max. 470 ppm) but it is most likely related to a similar feature.

A weak anomaly on Line 10000N (max. 60 ppm) appears related to gossaneous sandstone float known to be enriched in Pb.

Pb isotope signatures on sample 516031 taken from the anomaly on 11000N indicate the anomalism in Pb is related to a possible Cambrian mineralisation event of similar age to the Que/Hellyer deposits.

Zinc

Spot values of anomalous Zn occur throughout the area sampled. These anomalies (max. 175 ppm) do not appear to be related to the haematite stockwork, or any other recognisable feature. A weak correlation exists between a reverse fault around Line 9400N and a zone of Zn anomalism. This feature, however, is not seen over similar faults elsewhere on the grid.

Gold

Results from analysis for Au indicate more than ^{one} source for the anomalous values.

Two anomalies exist on line 9200N. The first, around 20300E has a maximum value of 92 ppb and is most likely sourced from the same quartz vein which is contributing to the high Pb values in the area. The second, larger anomaly centred at 20550E (max. 140 ppb) is related to the haematite stockwork and extends northeast to Line 9400N where it has a maximum value of 112 ppb.

Another high on Line 10000N (max. 142 ppb) is also related to the haematite stockwork. The anomaly in this area is also confirmed by rockchip geochemistry (max. 1940 ppb).

Other anomalous zones on Line 10400N at 20500E (max. 162 ppb) and on Line 10600N at 20300E (max. 126 ppb) are also related to the zone of haematite mineralisation.

Silver

A moderate Ag anomaly exists on Line 9800N between 20100E and 20250E (max. 5.5 ppm). No field evidence exists to support this anomaly, although it is 200 metres along strike from the position of a gossaneous sandstone from the Cambro-Ordovician known to be anomalous in Ag.

Iron

A broad zone of anomalous Fe, up to 20%, co-incides with the haematite stockwork and its associated haloes of haematite/chlorite alteration. Chemical dispersion has shifted the anomaly some 50-100 metres downslope.

Arsenic

None of the results for arsenic were considered to be of an anomalous nature with a maximum value of only 16 ppm. There appears to be some clustering of the higher values in the northeastern portion of the grid on Lines 10200N and 10400N, although no reason for this feature can be seen in the field.

Another cluster of higher values exists on Line 10800N and may possibly be related to reverse faulting in the area.

5.1.5.3 Stream Sediments (see Appendix A3)

A total of 11 -80 mesh and 4 BCL samples were taken as part of a program to compare the relative merits of each technique, and to test for northeastern extensions to the haematite stockwork mineralisation.

Results were dissapointing, with none of the -80 mesh samples returning values above detection for Au. A maximum result of 2200 ppt from the BCL sampling does not represent a significant anomaly.

Comparison between -80 mesh and BCL sampling techniques is considered pointless due to the low levels of Au in either sample. The BCL technique is considered more applicable in the Ten Mile Creek area, given the haematite stockwork contains moderately low levels of Au, unlikely to be detected in the smaller -80 mesh sample.

5.2 Regional Mapping (see Plate MROM 23B)

To facilitate emergency access to the Ten Mile Creek basecamp a walking access track was cut from the base of Mount Cripps across the Vale River to the baseline of the Ten Mile Creek grid.

The section from Cripps Road to the Vale River was mapped at 1:10,000 regional scale. The outcrop geology was dominated by two major rock types.

- . A unit of white-grey medium to coarse grained quartzose sandstone of the Siluro-Devonian Eldon Group.
- . A dark grey unit of massive dolomitic limestone, with minor quartz/calcite veins, of the Ordovician Gordon Limestone.

6. CONCLUSIONS

1. The zone of haematite stockwork at Ten Mile Creek appears to be approximately 50-100 metres in width, and extends well over 2 km in length, open to the southwest.

The stockwork and its associated haloe of pervasive haematite/chlorite alteration is anomalous in Au, with a maximum value of 1940 ppb in rockchips and 162 ppb in soils.

2. Another source of Au in the area is a massive quartz vein, several metres in thickness, outcropping in Ten Mile Creek. This vein, in Cambro-Ordovician siliclastics, has associated moderate Au (max. 92 ppb) and Pb (max. 125 ppm) soil anomalies. Rockchips of this vein material collected by Shell in 1983-84 returned a maximum value of 2200 ppb Au.

3. The zone of anomalous Cu trending northeast from Line 10000N appears related to the presence of pervasive chlorite alteration of the Bond Range Porphyry, rather than the actual haematite stockwork.

Southwest of Line 10000N the haematite stockwork persists, but chlorite alteration is restricted to selective replacement of biotite phenocrysts. This area is distinctly lacking in Cu anomalism.

Results from rockchip sampling support this theory, given that the only samples of the Bond Range Porphyry to have anomalous Cu were strongly chlorite altered samples containing 540 and 230 ppm Cu. Conversely, rockchip samples taken from the haematite stockwork returned low values of between 5 to 50 ppm Cu.

4. Stream sediment samples taken from creeks known to drain the zone of haematite stockwork are only weakly anomalous in Au for the BCL samples (max. 2200 ppt).

Since the level of Au detection for BCL analysis is an order of magnitude lower than that of the -80 mesh fire assay method, the BCL sample is considered more applicable in detecting subtle Au anomalies in stream sediments. The moderate levels of Au in the Ten Mile Creek haematite stockwork suggest that BCL sampling would be more applicable in this area. Results from the limited sampling program undertaken to date indicate this to be the case. CRAE sampling of the same area also failed to generate any Au anomalies using the -80 mesh technique.

5. Results from Pb isotope analysis conducted by the C.S.I.R.O. suggest a possible Middle to Late Cambrian mineralisation event has contributed to the anomalous Pb in the Cambro-Ordovician Owen Conglomerate sequence.

This observation poses a significant geochronological problem in the stratigraphy of the Cambro-Ordovician geology of the Ten Mile Creek area.

Considered more likely, is the model of structurally controlled Devonian Pb mineralisation remobilised from Cambrian rocks, without significant mixing with solutions high in radiogenic Pb. Low-levels of uranium in the Cambro-Ordovician host sediments has resulted in no change to the Cambrian isotopic signature (Dr G. Green, pers comm 1989).

Similar vein-style Pb/Zn mineralisation occurs elsewhere in the Back Peak - Mount Remus area with definite Devonian Pb isotope signatures.

6. A possible sequence of geological events at Ten Mile Creek is as follows:

- . Intrusion of the Bond Range Porphyry in the **Late Middle Cambrian**. Brecciation of the cooling porphyry by intrusion of more felsic dykes, representing the last stages of volcanism, resulting in the precipitation of late-stage Fe-rich solutions as a haematite stockwork breccia with associated hydrothermal alteration of the surrounding porphyry.
- . Deposition of the Owen Conglomerate sequence during the **Late Cambrian - Early Ordovician**.
- . Structural deformation during the **Devonian**, resulting in reverse faulting and emplacement of quartz veins similar to those seen in sections of Ten Mile Creek.

7. RECOMMENDATIONS

1. The zone of haematite mineralisation should be drill tested to a depth of approximately 40 metres. Drill holes should be targetted at the dominant Au geochemical anomalies. Two holes would be sufficient to test the possibility of Au enrichment with depth.
2. Follow-up to a significant Cu/Sn stream sediment anomaly generated by Shell on the eastern slopes of Mount Romulus should be undertaken. Rockchip and further stream sediment sampling should be sufficient to highlight the source of the anomalism. Helicopter support would be required.
3. Data from the remainder of the licence area should be examined for further exploration targets. The Cambrian volcanics have not been adequately assessed south of the Ten Mile Creek area. Discussion with Mines Department geologists indicates these rocks do contain some mineralisation, not sampled to date.

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Map 7. Geology of the Back Peak - Cradle Mountain Link Road Area.

Mount Read Volcanics Project, 1:25,000.

Geol. Surv. Tasmania - Dept. of Mines, Hobart.

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APPENDIX A
ASSAY RESULTS

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APPENDIX A1

Rockchips

PROJECT		BSS SIEVE SIZE CODE - MESH NUMBER				SAMPLE TYPE CODE				CARD PUNCH PRINT				VERIFY		DATE	SHEET																							
MR ROMULUS LA 2A104		A 200 B 150 C 100	D 80 E 60 F 40	G 30 H 20	I 10	OXIDIZED PRODUCTS FRESH ROCK STREAM SEDIMENTS	W T E M	WEATHERED BEDROCK SURFACE TRANSPORTED RESIDUAL SOIL MINE DUMP	YES NO	YES NO	YES NO	YES NO	8/3/1989	#1																										
GRID STATION	GRID N	SAMPLE NUMBER				DEPTH in CM	SIZE FRACTION	METAL VALUES PPM																GEOLOGICAL LOG																
20110	10000	431	501				FI	*	Cu, Pb, Zn, Au, Ag, As, Ba, Fe																gy-gn Rint / Cl 1-2.															
20205	"		502				FI																		rd-gy gossanous Sc / Ox3															
20300	"		503				FI																		pk-br Rint & chlor. brd.															
20400	"		504				FI	*																	gn-gy Rint / Cl 4-5.															
20310	9600		505				FI																		ow-br Rint / Ox 1.															
20410	"		506				FI																		rd-br Rint / Hm 4-5.															
20450	"		507				FI																		ow-br Rint / Ox 2 & Q/Cl vein (5 mm.)															
20405	"		508				FI																		rd-br Rint / Hm 3-4 & v Hm.															
20530	"		509				FI	**																	pk-rd Rint & Hm shw & chlor. brd.															
20260	10200		510				FI	*																	Ox-pk Rint & Hm shw / blobs															
20405	"		511				FI	*																	gn-br Rint / Cl 3 & chlor & Hm shw.															
20925	"		512				FI	*																	rd Rint / Ox 4 & limonite shw															
20905	"		513				FI	*																	gn Rint & Hm curmal.															
401800	5392950 (Hm)		514				FI																		Ox-br Rint & Q/Cl vein & chlor. brd.															
20600	9400		515				FI	**																	pu-rd Massive Hm. & minor Rint / Hms															
20600	"		516				FI																		pk-rd Rint & Hm shw.															
20600	"		517				FI																		pk-rd Rint & massive v Hm & H shw.															
20810	"		518				FI																		or Rint & chlor. brd & Q/Cl vein															
20710	"		519				FI	*																	rd-br Rint															
20600	9600		520				FI																		rd-br Rint / Hm 5															
20600	"		521				FI	**																	pk-or Rint & chlor. brd.															

* denotes Petrological Description Available
 ** denotes Petrological & Polished Section Available
 *** denotes Whole Rock Analysis Available

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ANALYTICAL DATA

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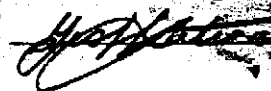
Results in ppm unless otherwise specified

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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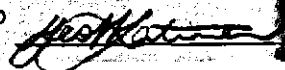
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14	431536	30	<5	45	<0.5	<0.008	75	4	12.60	
15	431537	<5	<5	30	<0.5	<0.008	670	4	10.50	
16	431538	<5	80	25	<0.5	0.010	1200	4	5.60	
17	431539	10	10	30	<0.5	0.123	1000	4	13.30	
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	0.05	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	
25	METHOD	101	101	101	101	309	401	114	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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OPERATOR	COMPUTER	CHECK	PLOTTER	DATE
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567024

ANALABS

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

567025

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06128

26/04/89

6280

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Fe	
1	431541	190	40	195	0.5	0.030	1150	6	7.50	
2	431542	225	<5	165	<0.5	0.044	1000	3	7.85	
3	431543	115	<5	130	<0.5	0.026	950	3	8.55	
4	431544	35	15	25	<0.5	0.030	1350	12	2.30	
5	431545	5	110	20	<0.5	<0.008	140	5	1.60	
6	431546	20	3000	25	6.0	<0.008	200	25	3.60	
7	431547	5	35	20	<0.5	0.008	2100	3	5.70	
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	0.05	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	
25	METHOD	101	101	101	101	309	401	114	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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APPENDIX A2

Soils

028

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

587027

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06151

11/05/89

7515

1 OF 15

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431710	20	25	105	<0.5	<0.008	6	5.00		
2	431711	20	25	130	<0.5	<0.008	6	4.05		
3	431712	55	35	160	<0.5	<0.008	4	4.40		
4	431713	40	30	85	<0.5	<0.008	6	4.65		
5	431714	65	135	80	<0.5	<0.008	4	5.75		
6	431715	35	15	75	<0.5	<0.008	6	4.35		
7	431716	30	15	70	<0.5	<0.008	6	4.65		
8	431717	20	20	55	<0.5	<0.008	5	5.00		
9	431719	10	20	50	<0.5	<0.008	8	5.80		
10	431720	5	5	35	<0.5	0.012	5	2.80		
11	431721	<5	15	45	<0.5	0.092	6	4.55		
12	431722	<5	15	30	<0.5	<0.008	2	3.60		
13	431723	<5	15	30	<0.5	<0.008	2	1.95		
14	431724	10	10	50	<0.5	<0.008	2	4.00		
15	431725	<5	<5	30	<0.5	<0.008	2	2.55		
16	431726	10	10	55	<0.5	<0.008	4	4.60		
17	431727	<5	<5	10	<0.5	<0.008	1	0.26		
18	431728	<5	<5	15	<0.5	<0.008	<1	0.27		
19	431729	<5	<5	10	<0.5	<0.008	1	0.29		
20	431730	<5	<5	15	<0.5	<0.008	1	0.36		
21	431731	<5	<5	15	<0.5	<0.008	<1	0.28		
22	431732	<5	<5	20	<0.5	<0.008	<1	0.34		
23	431733	<5	<5	15	<0.5	<0.008	<1	0.37		
24	431734	<5	<5	20	<0.5	<0.008	1	0.27		
25	431735	<5	<5	15	<0.5	<0.008	1	0.43		

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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027

ANALABS

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

567028

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06151

11/05/89

7515

2 OF 15

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431736	<5	<5	15	0.5	<0.008	2	0.45		
2	431737	<5	<5	15	<0.5	<0.008	1	0.36		
3	431738	<5	<5	15	<0.5	<0.008	1	0.39		
4	431739	<5	<5	15	<0.5	<0.008	1	0.49		
5	431740	<5	<5	20	<0.5	<0.008	1	0.33		
6	431741	<5	<5	30	<0.5	<0.008	1	0.31		
7	431742	<5	125	20	<0.5	<0.008	1	0.46		
8	431743	<5	<5	15	<0.5	<0.008	1	0.50		
9	431744	<5	5	40	<0.5	<0.008	1	2.35		
10	431745	<5	<5	15	0.5	0.008	1	0.33		
11	431746	5	5	30	<0.5	<0.008	1	0.73		
12	431747	10	10	60	<0.5	<0.008	2	5.00		
13	431748	5	10	45	<0.5	0.014	1	1.62		
14	431749	5	5	30	<0.5	<0.008	2	2.70		
15	431750	5	15	35	<0.5	<0.008	3	4.95		
16	431751	10	15	35	<0.5	<0.008	5	5.40		
17	431752	5	5	30	<0.5	<0.008	2	4.55		
18	431753	<5	10	40	<0.5	<0.008	3	5.05		
19	431754	<5	5	30	<0.5	<0.008	2	4.45		
20	431755	5	20	30	<0.5	<0.008	2	3.40		
21	431756	<5	10	30	<0.5	0.084	2	2.85		
22	431757	<5	5	40	<0.5	<0.008	<1	1.60		
23	431758	<5	<5	140	<0.5	<0.008	<1	3.80		
24	431759	<5	5	70	<0.5	<0.008	<1	3.20		
25	431760	5	10	60	<0.5	<0.008	<1	3.20		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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

567029

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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PAGE

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11/05/89

7515

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431761	15	10	95	<0.5	<0.008	<1	4.00		
2	431762	5	10	70	<0.5	<0.008	2	3.90		
3	431763	5	5	60	<0.5	<0.008	<1	3.15		
4	431764	20	10	115	<0.5	<0.008	2	4.05		
5	431765	<5	5	60	<0.5	<0.008	<1	3.60		
6	431766	20	10	120	<0.5	<0.008	3	4.65		
7	431767	15	5	80	<0.5	<0.008	<1	4.55		
8	431768	5	10	30	<0.5	0.092	<1	0.62		
9	431769	15	5	40	0.5	0.010	<1	1.50		
10	431770	15	10	40	0.5	0.014	<1	2.15		
11	431771	<5	5	30	<0.5	0.010	<1	1.60		
12	431772	<5	5	40	<0.5	<0.008	<1	4.25		
13	431773	<5	10	50	<0.5	0.094	1	5.25		
14	431774	<5	10	55	<0.5	0.110	<1	4.60		
15	431775	50	25	50	<0.5	0.018	1	6.75		
16	431776	<5	5	45	<0.5	0.094	2	3.80		
17	431777	5	10	50	<0.5	0.098	1	4.35		
18	431778	<5	20	45	<0.5	0.078	2	7.05		
19	431779	10	<5	50	<0.5	0.140	<1	4.35		
20	431780	5	10	50	<0.5	<0.008	<1	4.75		
21	431781	10	<5	80	<0.5	<0.008	<1	5.35		
22	431782	<5	10	65	<0.5	<0.008	<1	4.20		
23	431783	<5	15	75	<0.5	<0.008	<1	3.10		
24	431784	5	10	130	<0.5	<0.008	<1	3.95		
25	431785	<5	65	25	<0.5	<0.008	<1	0.46		

Results in ppm unless otherwise specified

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X = element concentration is below detection limit

-- = element not determined

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

567030

ANALYTICAL DATA

SAMPLE PREFIX

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7515

4 OF 15

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431786	75	25	65	<0.5	0.052	1	4.80		
2	431787	40	15	70	<0.5	0.055	<1	4.45		
3	431788	45	25	65	<0.5	0.048	1	4.40		
4	431789	30	35	80	<0.5	<0.008	2	5.30		
5	431790	25	35	75	<0.5	0.084	1	4.90		
6	431791	20	20	55	<0.5	0.112	<1	3.80		
7	431792	35	20	85	<0.5	<0.008	<1	6.75		
8	431793	5	10	45	<0.5	0.098	<1	2.90		
9	431794	<5	5	100	<0.5	<0.008	<1	5.75		
10	431795	<5	15	55	<0.5	<0.008	1	4.10		
11	431796	35	15	80	<0.5	0.058	11	20.00		
12	431797	25	5	60	<0.5	<0.008	<1	2.25		
13	431798	<5	5	55	<0.5	<0.008	<1	2.40		
14	431799	10	<5	75	<0.5	<0.008	<1	2.20		
15	431800	25	20	70	<0.5	0.088	2	5.75		
16	431801	55	35	95	<0.5	<0.008	5	8.55		
17	431802	5	15	50	<0.5	<0.008	<1	3.15		
18	431803	35	50	15	<0.5	0.060	3	4.70		
19	431804	35	50	25	<0.5	<0.008	3	3.90		
20	431805	15	50	15	<0.5	<0.008	1	4.80		
21	431806	10	45	10	<0.5	<0.008	3	3.80		
22	431807	25	65	15	<0.5	<0.008	4	4.95		
23	431808	40	65	15	<0.5	<0.008	6	4.85		
24	431809	15	55	15	<0.5	0.090	<1	5.00		
25	431810	15	60	5	<0.5	<0.008	1	5.60		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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

567031

030

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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CLIENT ORDER No.

PAGE

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7515

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431811	35	60	20	<0.5	<0.008	1	5.45		
2	431812	20	10	15	<0.5	<0.008	3	5.60		
3	431813	15	35	15	<0.5	0.012	1	4.00		
4	431814	10	30	95	<0.5	<0.008	<1	2.35		
5	431815	20	50	10	<0.5	<0.008	<1	3.70		
6	431816	15	45	10	<0.5	<0.008	1	5.10		
7	431817	15	30	5	<0.5	<0.008	2	3.20		
8	431818	20	40	<5	<0.5	<0.008	<1	3.05		
9	431819	10	85	10	<0.5	<0.008	1	4.75		
10	431820	25	70	5	<0.5	<0.008	2	5.40		
11	431821	5	25	30	<0.5	0.020	1	1.05		
12	431822	90	50	25	<0.5	<0.008	2	4.45		
13	431823	95	65	30	<0.5	0.070	1	3.65		
14	431824	75	60	20	4.5	0.130	<1	2.80		
15	431825	40	40	15	2.0	<0.008	<1	2.40		
16	431826	105	80	10	5.0	<0.008	1	3.90		
17	431827	20	25	15	2.0	<0.008	<1	1.50		
18	431828	35	15	45	5.5	<0.008	1	2.85		
19	431829	100	10	60	5.0	<0.008	<1	3.70		
20	431830	95	10	75	4.0	<0.008	1	5.15		
21	431831	65	15	70	1.5	<0.008	1	4.85		
22	431832	125	65	70	<0.5	<0.008	2	4.90		
23	431833	125	10	80	<0.5	<0.008	1	4.95		
24	431834	75	10	65	<0.5	<0.008	3	4.20		
25	431835	150	10	80	<0.5	<0.008	<1	4.25		

Results in ppm unless otherwise specified

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X = element concentration is below detection limit

- = element not determined

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[Signature]

031

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

567032

ANALYTICAL DATA

SAMPLE PREFIX

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7515

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431836	40	10	80	1.0	<0.008	2	5.25		
2	431837	5	10	35	<0.5	<0.008	<1	4.65		
3	431838	20	15	40	1.5	<0.008	<1	4.85		
4	431840	20	5	45	<0.5	<0.008	<1	3.30		
5	431841	60	5	80	<0.5	<0.008	1	4.10		
6	431842	45	10	55	<0.5	0.050	<1	3.70		
7	431843	110	5	80	<0.5	<0.008	<1	3.75		
8	431844	35	<5	55	1.5	<0.008	<1	3.20		
9	431845	5	<5	20	<0.5	<0.008	<1	1.25		
10	431846	5	<5	25	<0.5	<0.008	<1	2.90		
11	431848	5	<5	30	<0.5	0.050	<1	2.20		
12	431849	5	5	65	<0.5	<0.008	<1	2.10		
13	431850	10	<5	55	<0.5	0.096	4	2.55		
14	431851	25	5	85	2.0	0.048	2	3.95		
15	431852	15	<5	70	<0.5	<0.008	2	3.75		
16	431853	15	10	60	<0.5	<0.008	1	3.85		
17	431854	15	<5	120	<0.5	<0.008	<1	4.25		
18	431855	60	<5	80	<0.5	<0.008	13	3.40		
19	431856	25	5	90	<0.5	<0.008	1	3.95		
20	431857	30	<5	80	<0.5	<0.008	2	3.85		
21	431858	25	5	65	<0.5	<0.008	5	3.85		
22	431859	20	5	80	<0.5	0.102	<1	3.90		
23	431860	10	<5	95	<0.5	<0.008	<1	2.95		
24	431861	10	<5	95	<0.5	<0.008	<1	3.25		
25	431862	180	60	90	<0.5	<0.008	3	5.10		

Results in ppm unless otherwise specified

T = element present, but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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032

ANALABS

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

567033

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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7515

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431863	45	20	40	<0.5	0.048	2	3.80		
2	431864	215	10	80	<0.5	<0.008	1	5.60		
3	431865	110	10	65	<0.5	<0.008	1	5.65		
4	431866	170	<5	135	<0.5	0.120	<1	5.20		
5	431867	80	10	60	<0.5	0.142	<1	4.95		
6	431868	195	10	90	<0.5	0.096	1	5.90		
7	431869	235	10	105	<0.5	<0.008	<1	5.95		
8	431870	170	5	75	<0.5	<0.008	<1	6.20		
9	431871	65	5	45	<0.5	<0.008	<1	3.55		
10	431872	210	15	100	<0.5	<0.008	1	4.70		
11	431873	50	10	70	<0.5	<0.008	2	4.85		
12	431874	30	<5	60	<0.5	<0.008	<1	3.20		
13	431875	60	5	90	<0.5	<0.008	<1	3.05		
14	431876	85	5	95	<0.5	<0.008	<1	4.65		
15	431877	15	<5	25	<0.5	<0.008	1	2.20		
16	431878	20	5	30	<0.5	<0.008	<1	3.25		
17	431879	10	10	25	<0.5	<0.008	<1	2.85		
18	431880	15	<5	30	<0.5	0.046	1	3.40		
19	431881	10	<5	20	<0.5	0.046	<1	1.75		
20	431882	20	<5	40	<0.5	<0.008	2	3.34		
21	431883	20	5	45	<0.5	<0.008	2	3.55		
22	431884	130	15	70	<0.5	<0.008	2	5.20		
23	431885	55	10	35	<0.5	<0.008	6	3.75		
24	431886	105	10	65	<0.5	<0.008	3	5.60		
25	431887	55	10	45	<0.5	<0.008	1	5.65		

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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035

ANALABS

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

567034

ANALYTICAL DATA

SAMPLE PREFIX

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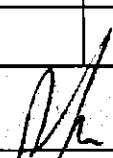
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431888	60	10	55	<0.5	<0.008	2	4.55		
2	431889	75	10	55	<0.5	<0.008	2	7.05		
3	431890	100	10	75	<0.5	<0.008	2	5.05		
4	431891	45	15	50	<0.5	<0.008	2	6.15		
5	431892	65	10	35	<0.5	<0.008	1	4.65		
6	431893	50	5	30	<0.5	<0.008	<1	4.35		
7	431894	170	5	115	<0.5	<0.008	2	3.90		
8	431895	70	10	95	<0.5	<0.008	2	3.90		
9	431896	145	15	120	<0.5	<0.008	2	4.50		
10	431897	50	15	55	<0.5	<0.008	<1	3.55		
11	431898	25	15	165	<0.5	<0.008	1	2.85		
12	431899	45	10	100	<0.5	<0.008	1	3.05		
13	431900	25	<5	60	<0.5	<0.008	1	3.05		
14	431901	30	10	65	<0.5	0.072	2	3.30		
15	431902	15	10	45	<0.5	<0.008	1	3.55		
16	431903	15	5	50	<0.5	<0.008	<1	2.90		
17	431904	20	15	70	<0.5	<0.008	5	3.15		
18	431905	20	10	65	<0.5	<0.008	8	2.80		
19	431906	20	5	75	<0.5	<0.008	13	3.30		
20	431907	20	10	110	<0.5	<0.008	1	3.45		
21	431908	10	<5	60	<0.5	<0.008	5	3.35		
22	431909	20	10	75	<0.5	<0.008	3	3.85		
23	431910	10	<5	65	<0.5	<0.008	<1	3.15		
24	431911	15	5	50	<0.5	<0.008	1	3.70		
25	431912	40	10	50	<0.5	<0.008	2	3.90		

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

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7515

9 OF 15

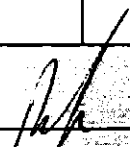
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431913	30	5	50	<0.5	<0.008	1	3.30		
2	431914	20	5	60	<0.5	<0.008	1	3.75		
3	431915	5	<5	40	<0.5	<0.008	1	2.20		
4	431916	10	<5	35	<0.5	0.013	<1	2.05		
5	431917	5	10	175	<0.5	<0.008	<1	8.35		
6	431918	10	15	25	<0.5	<0.008	<1	1.05		
7	431919	40	20	55	<0.5	<0.008	2	3.05		
8	431920	5	10	20	<0.5	<0.008	<1	0.57		
9	431921	5	10	15	<0.5	<0.008	<1	0.69		
10	431922	5	10	10	<0.5	<0.008	<1	0.56		
11	431923	10	5	15	<0.5	<0.008	<1	1.00		
12	431924	90	20	60	<0.5	<0.008	2	3.50		
13	431925	25	10	50	<0.5	<0.008	<1	3.05		
14	431926	20	10	30	<0.5	<0.008	<1	1.95		
15	431927	45	10	70	<0.5	<0.008	1	4.20		
16	431928	70	5	75	<0.5	<0.008	<1	4.40		
17	431929	85	10	70	<0.5	<0.008	1	4.50		
18	431930	90	<5	75	<0.5	0.052	<1	4.40		
19	431931	115	5	95	<0.5	<0.008	<1	4.55		
20	431932	85	5	70	<0.5	0.052	<1	4.25		
21	431933	120	5	85	<0.5	<0.008	<1	4.40		
22	431934	70	5	85	<0.5	<0.008	<1	5.40		
23	431935	160	10	80	<0.5	<0.008	1	4.55		
24	431936	85	<5	60	<0.5	<0.008	<1	4.30		
25	431937	200	15	70	<0.5	0.162	4	6.40		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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030

ANALABS

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

567036

ANALYTICAL DATA

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431938	30	<5	30	<0.5	0.082	<1	3.05		
2	431939	35	5	60	<0.5	0.096	<1	2.80		
3	431940	10	10	35	<0.5	0.046	<1	3.65		
4	431941	20	5	65	<0.5	<0.008	<1	3.10		
5	431942	20	5	85	<0.5	<0.008	1	3.50		
6	431943	20	25	95	<0.5	<0.008	4	4.50		
7	431944	10	20	70	<0.5	<0.008	2	2.35		
8	431945	10	15	50	<0.5	<0.008	2	2.60		
9	431946	35	20	60	<0.5	<0.008	5	3.35		
10	431947	20	25	50	<0.5	<0.008	5	3.45		
11	431948	15	25	45	<0.5	<0.008	4	3.35		
12	431949	15	30	90	<0.5	<0.008	4	4.15		
13	431950	20	25	75	<0.5	<0.008	5	4.35		
14	431951	20	25	50	<0.5	<0.008	4	3.45		
15	431952	20	25	50	0.5	<0.008	3	3.30		
16	431953	25	35	90	<0.5	<0.008	6	3.70		
17	431954	25	20	65	<0.5	<0.008	6	3.95		
18	431955	30	30	70	<0.5	<0.008	5	3.95		
19	431956	30	35	80	<0.5	<0.008	6	3.90		
20	431957	40	30	55	<0.5	<0.008	10	2.90		
21	431958	15	25	40	<0.5	<0.008	16	2.55		
22	431959	15	30	30	<0.5	<0.008	1	1.00		
23	431960	15	15	30	<0.5	<0.008	1	0.74		
24	431961	5	15	20	<0.5	<0.008	<1	0.33		
25	431962	20	60	35	<0.5	<0.008	3	1.30		

Results in ppm unless otherwise specified.

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AUTHORISED
OFFICER


036

ANALABS

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

567037

ANALYTICAL DATA

SAMPLE PREFIX

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431963	10	5	20	<0.5	<0.008	<1	0.34		
2	431964	5	<5	20	<0.5	<0.008	1	0.27		
3	431965	10	10	25	<0.5	<0.008	2	0.39		
4	431966	10	15	25	<0.5	<0.008	<1	0.41		
5	431967	5	<5	20	<0.5	<0.008	1	0.30		
6	431968	10	15	30	<0.5	<0.008	3	1.85		
7	431969	20	40	135	<0.5	0.092	5	6.55		
8	431970	30	25	120	<0.5	<0.008	5	4.45		
9	431971	25	25	75	<0.5	<0.008	3	3.80		
10	431972	15	25	90	<0.5	0.126	2	4.60		
11	431973	15	20	55	<0.5	0.060	3	3.75		
12	431974	30	25	80	<0.5	<0.008	4	4.00		
13	431975	15	35	85	<0.5	<0.008	3	3.60		
14	431976	45	25	170	<0.5	<0.008	3	4.25		
15	431977	45	30	95	<0.5	<0.008	4	4.30		
16	431978	85	25	80	<0.5	<0.008	3	4.45		
17	431979	70	30	90	<0.5	<0.008	7	5.25		
18	431980	65	25	70	<0.5	<0.008	4	4.25		
19	431981	160	25	110	<0.5	<0.008	5	4.90		
20	431982	300	25	110	<0.5	<0.008	4	4.40		
21	431983	80	25	65	<0.5	<0.008	7	4.25		
22	431984	50	30	65	<0.5	<0.008	5	4.15		
23	431985	50	30	90	<0.5	0.050	5	4.50		
24	431986	50	35	85	<0.5	<0.008	4	4.55		
25	431987	30	25	70	<0.5	<0.008	7	3.60		

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.

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	431988	30	30	80	<0.5	<0.008	8	4.00		
2	431989	30	35	70	<0.5	<0.008	5	3.75		
3	431990	25	20	65	<0.5	<0.008	3	3.90		
4	431991	35	15	65	<0.5	0.064	4	3.70		
5	431992	10	5	15	<0.5	<0.008	<1	0.61		
6	431993	10	10	15	<0.5	<0.008	<1	0.56		
7	431994	10	10	15	<0.5	<0.008	1	0.53		
8	431995	10	5	15	<0.5	<0.008	1	0.30		
9	431996	10	<5	15	<0.5	<0.008	1	0.41		
10	431997	10	10	15	<0.5	<0.008	1	0.58		
11	431998	10	5	15	<0.5	0.056	<1	0.55		
12	431999	10	30	15	0.5	<0.008	1	0.62		
13	432000	30	35	55	<0.5	<0.008	5	4.90		
14	516001	25	30	50	<0.5	<0.008	4	4.50		
15	516002	25	25	70	<0.5	<0.008	4	4.20		
16	516003	30	40	90	<0.5	<0.008	5	3.40		
17	516004	10	15	15	<0.5	<0.008	1	1.05		
18	516005	10	10	15	<0.5	<0.008	<1	0.80		
19	516006	10	10	15	<0.5	<0.008	<1	0.69		
20	516007	10	10	20	<0.5	<0.008	1	0.50		
21	516008	10	15	20	<0.5	<0.008	1	0.65		
22	516009	110	30	115	<0.5	<0.008	3	5.35		
23	516010	85	45	115	<0.5	<0.008	4	5.50		
24	516011	130	45	110	<0.5	<0.008	3	5.40		
25	516012	210	40	105	<0.5	<0.008	3	5.70		

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.

567039

ANALYTICAL DATA

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Fe		
1	516013	90	30	80	<0.5	<0.008	1	4.20		
2	516014	150	30	75	<0.5	<0.008	3	5.15		
3	516015	75	15	50	<0.5	<0.008	3	3.05		

8	516020	10	20	20	<0.5	<0.008	1	0.60		
9	516021	25	25	30	<0.5	<0.008	2	1.40		
10	516022	10	15	30	<0.5	<0.008	1	0.75		
11	516023	10	5	55	<0.5	<0.008	<1	0.49		
12	516024	10	10	15	<0.5	<0.008	1	0.40		
13	516025	10	15	15	<0.5	<0.008	1	0.71		
14	516026	10	15	20	<0.5	<0.008	1	0.38		
15	516027	20	20	35	<0.5	<0.008	4	2.00		
16	516031	40	470	70	0.5	<0.008	13	2.55		
17	516032	10	435	25	1.5	<0.008	11	2.30		
18	516033	30	30	20	1.0	<0.008	11	1.60		
19	516034	20	110	20	<0.5	<0.008	16	3.05		

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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039

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

567040

ANALYTICAL DATA

SAMPLE PREFIX

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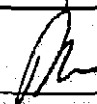
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	As	Se	Fe		
7	516055	20	30	30	<0.5	<0.008	1	0.63		
8	516056	15	25	25	<0.5	<0.008	<1	0.53		
9	516057	10	15	10	<0.5	<0.008	<1	0.49		
10	516058	10	15	10	<0.5	<0.008	<1	0.41		
11	516059	10	<5	10	<0.5	0.072	<1	0.43		
12	516060	10	5	10	<0.5	<0.008	1	0.46		
13	516061	15	15	20	<0.5	<0.008	1	1.20		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

— = element not determined

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APPENDIX A3
Stream Sediments

557042

DATE _____

042

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

567043

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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23.3.08.06068

30/03/89

6214

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Sa	As		
1	431604	90	5	75	<0.5	<0.008	650	3		
2	431605	180	90	300	<0.5	<0.008	IS	8		
3	431607	105	60	160	<0.5	<0.008	IS	4		
4	431609	90	40	140	<0.5	<0.008	IS	2		
5	431611	120	70	200	<0.5	<0.008	IS	11		
7	431616	90	25	170	<0.5	<0.008	IS	3		
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECT (GN)	5	5	5	0.5	0.008	10	1		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	401	114		

Results in ppm unless otherwise specified

T = element present; but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

AA PA XLF

AUTHORISED OFFICER

[Signature]

ANALABS

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

567044

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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28/04/89

6294

1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Fe	
2	431614	125	105	225	<0.5	<0.008	13	10	2.25	
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	0.05	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	
25	METHOD	101	101	101	101	309	401	114	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

[Signature]

LABORATORY REPORT

Brisbane Head Office and Laboratory
32 Shand Street, Stafford, Q. 4053
P.O. Box 66, Everton Park, Q. 4053.
Phone: (07) 352 5577
Fax: (07) 352 5105

Perth Laboratory
Lot 197 Victoria Road, Malaga, W.A. 6060
Phone: (09) 249 2988. Fax: (09) 249 2989

Townsville Laboratory
21 Bombala Street, Garbutt, Q. 4814.
Phone: (077) 79 9155. Fax: (077) 799 7155

Charters Towers Laboratory
18 Drew Street, Charters Towers, Q. 4820
Phone: (077) 87 4155 Fax: (077) 87 4220

Bendigo Laboratory
127A Victoria Street, Eaglehawk, Vic. 3556
Phone: (054) 46 1390. Fax: (054) 46 1389.

Orange Laboratory
10 Leewood Drive Orange, N.S.W. 2800.
Phone: (063) 631 722. Fax: (063) 631 189.

File [REDACTED] ABERFOYLE RESOURCES LIMITED
Address: PO BOX 952
BURNIE
TAS 7

7320

567045

Page 1 of 1

Batch Number: Q426

Contact: **EXPLORATION MANAGER**

Doc No. **5696**

Sample Type: **STREAM SEDIMENT**

No. of Samples: 5
Date Received: 20/03/89
Date Completed: 23/03/89

[illegible]

Comments:

UNLESS NOTIFIED PULPS WILL BE DUMPED ON 20/09/89 AND SPLITS (IF ANY) ON 20/06/89

Signed:

Signature: Robt. H. H. H. H.

040

567046

APPENDIX A4

Whole Rock Geochemistry - Dept. of Mines, Launceston



TASMANIA

046

DEPARTMENT OF MINES

567047

Launceston Office:

Chemical and Metallurgical
Laboratory,
287 Wellington Street,
LAUNCESTON 7249

Enquiries:

Phone:

Your ref.:

Our file:

Aberfoyle Resources Ltd
Exploration division
39 River Road
Wivenhoe 7320
Tasmania

7.4.89

Attent Mr. R.J. Henham

Reg. no 892656 Chip sample No 431521

Dear Sir,

Please find below results of sample submitted
to this laboratory.

<u>Reg. No</u>	<u>892656</u>	<u>Trace elements</u>	<u>Desc. 431521</u>
As g/t	<20		
Ba	1350		
Ce	115		
Cr	120		
Cu	38		
Ga	14		
Mo	<6		
Nb	13		
Ni	39		
Pb	11		
Rb	250		
Sc	<9		
Sn	<8		
Sr	41		
Th	25		
V	71		
W	14		
Y	15		
Zn	115		
Zr	180		
Ag (XRF)	13	Check (AAs)	
Au	0.05		

<u>Reg. No</u>	<u>Major Elements</u>	<u>892656 %</u>
	SiO ₂	69.12
	TiO ₂	0.40
	Al ₂ O ₃	13.32
	Fe ₂ O ₃ *	6.17
	MnO	0.12
	MgO	2.06
	CaO	0.08
	Na ₂ O	0.12
	K ₂ O	6.77
	P ₂ O ₅	0.14
	L.O.I.	2.32
	HCl Soluble Fe	3.65

*Total Fe expressed as Fe₂O₃
FeO to come.

Analyses by *M. L. James*

P. L. James for

(P.L. James)

Chief Chemist & Metallurgist



TASMANIA

048

DEPARTMENT OF MINES

567049

Launceston Office:

Chemical and Metallurgical
Laboratory,
287 Wellington Street,
LAUNCESTON 7249

Enquiries: Aberfoyle Resources Ltd
Phone: Exploration Division
Your ref.: 39 River Road
Our file: Wivenhoe 7320

14.4.89

Attent. — Mr. R.J. Henham

Reg. No. 892656 Chip Sample No 431521

Dear Sir,

Re: Your enquiry concerning the silver value.

The silver in the above rock was measured in the course of our normal program for rock analyses by XRF using a Rhodium tube.

A high degree of precision in silver determination is not obtainable by XRF at very low levels.

However any silver present is detected and the read-out result is included in the list of determinations. The determination limit is 13 g/t.

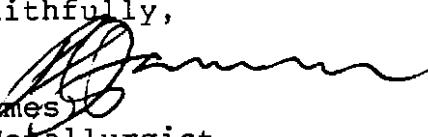
If a precise value for silver is required we determine it by acid solution/AAS method.

Our Departmental Geologists are aware of this and if silver is critical to their studies we are usually advised and use the appropriate method of determination.

The silver content of your rock has now been determined by acid solution/AAS measurement with the following result.

Ag - 2 g/t

Yours faithfully,


(P.L. James)
Chief Chemist & Metallurgist



TASMANIA

DEPARTMENT OF MINES

567050

Launceston Office:
Chemical and Metallurgical
Laboratory,
287 Wellington Street,
LAUNCESTON 7249

Enquiries: Aberfoyle Resources Ltd
Phone: Exploration Division
Your ref.: 39 River Road
Our file: Wivenhoe 7320

7.7.89

Attent. Mr. R.J. Henham

Reg. No 892656 Chip Sample

Dear Sir,

Please find below further results on sample submitted
to this laboratory.

<u>Reg. No</u>	<u>892656</u>	<u>Major Elements Desc. 431521</u>
FeO %	2.66	
Fe ₂ O ₃ %	3.21	

Analyses by *[Signature]*

Yours faithfully,

[Signature]
(P.L. James)

Chief Chemist & Metallurgist

Fee Already charged

567051

APPENDIX B

PETROLOGICAL REPORTS - CENTRAL MINERALOGICAL SERVICES



Central Mineralogical Services

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

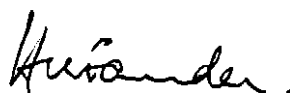
Mr. R.J. Henham
Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

8th May, 1989

REPORT CMS 89/3/30

YOUR REFERENCE:	Letter dated 20.3.1989
DATE RECEIVED:	22nd March, 1989
SAMPLE NOS.:	9 Samples
SUBMITTED BY:	R.J. Henham
WORK REQUESTED:	Petrology

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


H.W. Fander, M. Sc.

REPORT CMS 89/3/30

A suite of nine rock chip samples from the Bond Range Porphyry was received for petrological examination (of eight samples), with two samples delineated for mineragraphic determination. Representative sections were prepared, as requested. Thin-sections were examined in transmitted light and, together with respective cobaltinitrite-stained offcuts, in oblique incident light.

Attached descriptions, appended by mineragraphic notes on samples 431509 and 431515, summarise the microscopic data and include interpretative comments.

Summary

The bulk of this suite comprises altered coarsely porphyritic hornblende-biotite rhyolites, texturally similar, with rather insignificant compositional and textural variations, and with minor medium-scale intrusive characteristics. These rocks exhibit phyllosilicate alteration assemblages, typically composites of semi- to sericitic white mica (feldspar-replacive) and chlorite (after biotite, amphibole), with the chlorite, at least locally, overprinting an earlier phase of biotitisation (selective, after amphibole).

It should be noted that amphibole-derived pseudomorphs in these rocks are at best semi-diagnostic in terms of habit, and some examples may include altered phenocrystal pyroxene. However, no clearly pyroxene-derived pseudomorphs are evident in the various sections examined.

A subordinate suite of relatively felsic rhyolites is represented by sample 431512 and 431509, which may be categorised as biotite-rhyolitic and felsic-rhyolitic respectively. These rocks exhibit relatively simple sericitic alteration assemblages.

There is thus an apparent trend from relatively "basic" to felsic facies, with associated variations in the alteration assemblage which may well reflect a simple differentiation trend in progressively younger intrusives. This tends to be confirmed by rather consistent textures and accessory mineral assemblages throughout this suite as a whole.

Zones of hematitic mineralisation are associated with relatively advanced sericitic alteration. This is variously represented in veinlets, massive replacements, or selective replacements, for example of feldspathicmiarolitic vugs. The vein assemblage includes a little quartz, K-feldspar and pale phlogopitic mica, and appears late but semi-contemporaneous with pervasive sericitic alteration in the relatively felsic rhyolitic intrusives. The chloritic assemblage, typical of the relatively "basic" (amphibole-bearing and biotite-rich) rhyolitic intrusives, conceivably represents a marginal variant.

Close mineragraphic examination of two examples of hematitic alteration revealed no detectable associated sulphides or gold. Additional mineragraphic work, however, may be warranted on specific (assay-)anomalous material.

It is noted that porphyritic rhyolites have previously been described from this area. Comparison and review may be warranted, but the previous report is erroneously delineated as CMS 88/10/17.

D. Cowan, B. Sc.

REPORT CMS 89/3/30Mineragraphic Notes431509 (P.S. 61461)

This section represents the discontinuous micaceous-hematitic veinlets, and veinlet-marginal Fe-oxide impregnations. Vein-hematite is specular-textured with planar to variably curved and contorted platy laths to 100 μm diameter, but typically < 20 μm and high length to breadth ratios. Close examination of these aggregates revealed no detectable associated sulphide (or sulphide-derived boxworks) and no detectable gold.

Vein-marginal Fe-oxides are composites of ultrafine-grained spongy masses of limonite ("goethite") and minor to locally conspicuous relics of very fine-grained flaky hematite, with this finer material clearly relatively prone to weathering. These zones include disseminations of extensively martitised (i.e. hematite-pseudomorphed) primary magnetite, which are also distributed throughout the host rock, and minor occurrence of partly hematitised leucoxenic semi-opaques. Close examination revealed no evidence of sulphides and no detectable gold.

431515 (P.S. 61466)

This section represents semi-massive fine-grained hematite aggregates. These consist typically of weakly banded masses of fine (mean 10-15 μm , range < 5-35 μm diameter) tabular laths of hematite in specular-textured masses with sporadic zones (to 2 mm diameter) of microcrystalline hematite. Interstices consist of Fe-pigmented silicates partly identifiable as quartz, and fine-grained phyllosilicate ("sericite"). "Phenocrystal" quartz grains and hematitic phyllosilicate to massive microcrystalline hematitic pseudomorphs after feldspar are recognisable and general features are consistent with a hematitised/phyllosilicate "rhyolite". Martitised magnetite is present in accessory proportions.

Extremely rare ultrafine pyrite is present as inclusions in the "phenocrystal" quartz grains and appears to represent a minor accessory to the primary "rhyolitic" assemblage. These represent the only sulphide component detected. Close examination revealed no detectable gold.

D. Cowan, B. Sc.

SAMPLE NO.:

431501

(T.S. 61459)

1.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Phenocrysts of variably corroded quartz, sericite-pseudomorphed plagioclase, fresh to incipiently sericitised orthoclase, variably chloritised and partly degraded/ferruginised biotite and completely chloritised amphibole in a groundmass of fine (mean 35 um) granular K-feldspar with subordinate quartz and sericitised plagioclase; minor chloritised biotite and ?amphibole laths. Minor chlorite amygdales.

FABRIC:

Strongly and coarsely porphyritic/weakly amygdaloidal, with essentially evenly disseminated phenocrysts (to 5 mm, mode 1-1.5 mm), incipiently flow-orientated in an even-grained microgranular groundmass. Stressed to locally granulated and chlorite-matrixed.

ACCESSORIES:

Disseminated fine magnetite [partly hematitised ("martitised")]; rare zircons. Semi-conspicuous very fine leucoxenitic semi-opaques and dark brown rutile in ferromag.-replacive chlorite aggregates. Extremely rare fine oxidised pyrite.

COMMENTS:

An extensively chlorite-sericite-altered, stressed to locally granulated and chlorite-healed sodi-potassic rhyolite with conspicuous phenocrystal ferromags. (biotite, amphibole), largely represented by pseudomorphous chlorite aggregates. Exhibits marked differential alteration of feldspars. Textural features consistent with a minor intrusive mode of origin.

SAMPLE NO.: 431504 (T.S. 61460) 2.

CLASSIFICATION: Altered, Veined Hornblende-Biotite Rhyolite

COMPOSITION: Phenocrysts of variably corroded quartz, sericitic K-feldspar, sericite-chlorite-pseudomorphed plagioclase, chloritised biotite and amphibole in a groundmass of fine granular quartz (mean 50 um), and similarly differentially altered feldspars with interspersed irregular spongy masses of chlorite. Sporadic discontinuous veinlets and films of fine an- to subhedral quartz with interspersed clots and films of K-feldspar (adularia) and chlorite. Discontinuous chloritic selvages and displacive chloritic fractures.

FABRIC: Similar to 431501; modally finer phenocrysts and a slightly coarser-grained granular groundmass. Exhibits relatively marked chloritic fracturing effects postdating the chloritic quartz-feldspar veinlets (to 1.5 mm wide).

ACCESSORIES: Disseminated fine magnetite, minor leucoxenised opaques, and very thinly disseminated zircons. Secondary leucoxenic semi-opaques in altered ferromags.

COMMENTS: This rock exhibits textural and compositional affinities with 431501 and is similarly interpreted. In comparison, this rock exhibits a relatively chloritic alteration assemblage enhanced by chloritic quartz-adularia veinlets and subsequent chloritic fracturing effects.

SAMPLE NO.:

431509

(T.S. 61461)

3.

CLASSIFICATION:Altered, Veined RhyoliteCOMPOSITION:

Disseminated sericite-pseudomorphed feldspar phenocrysts (mean 1.5 mm) and subordinate corroded quartz phenocrysts in an altered groundmass of sericitised microcrystalline feldspar with subordinate sericitic secondary and relict primary clear microgranular quartz. Sporadic irregular veinlets of semi-sericitic white mica with impersistent selvages of pale phlogopite, minor quartz and K-feldspar. Disseminated veinlet-hosted and metasomatic opaques (mainly specular hematite). Semi-pervasive veinlet-marginal secondary limonitic impregnations.

FABRIC:

Strongly porphyritic/weakly flow- and compositionally banded, with irregular networks of hematitic micaceous veinlets. Very incipient late (post-veining) stress effects.

ACCESSORIES:

Conspicuous fine/subordinate coarser, partly martitised relict primary magnetite, relatively quite minor leucoxenised opaques. Minor corroded relics of phenocrystal plagioclase (?albite). Sparse quartz-sericite aggregates vaguely pseudomorphous after fine phenocrystal K-feldspar.

COMMENTS:

A thoroughly sericite-quartz-altered rhyolitic porphyry, distinctly felsic and devoid of altered ferromags. in comparison with 431501 and 431504, and thus interpreted as a separate, relatively differentiated minor intrusive phase. Irregular networks of hematitic mica (sericite-phlogopite) veinlets carry minor quartz and discontinuous films of K-feldspar (orthoclase).

SAMPLE NO.:

431510

(T.S. 61462)

4.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent chloritised biotite, subordinate corroded quartz, sericite-pseudomorphed plagioclase, chloritised amphibole and kaolin-stained but otherwise fresh orthoclase phenocrysts in a groundmass of fine granular kaolin-clouded orthoclase, subordinate quartz and sericitised plagioclase, with sporadic chloritised biotite flakes.

FABRIC:

Analogous to 431504, and particularly 431501, but relatively strongly porphyritic, only very incipiently flow-structured, and with a coarser-grained (mean 65 um) groundmass. Essentially unstressed.

ACCESSORIES:

Minor relics of primary (phenocrystal) and secondary (amphibole-pseudomorphous) biotite. Thinly disseminated magnetite and rare zircons. Ultrafine secondary leucoxenitic semi-opaques in altered ferromags. (biotite). Weak but semi-pervasive secondary Fe-stainings.

COMMENTS:

Close affinities with 431501 and 431504, and similarly interpreted. In contrast, this rock exhibits evidence of partial biotitisation (of amphibole) in association with selective sericitisation of plagioclase and overprinted by chloritisation, possibly weathering-induced at least in part. No positive evidence of sulphides.

SAMPLE NO.:

431511

(T.S. 61463)

5.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent chloritised biotite and sericitised plagioclase phenocrysts, subordinate corroded phenocrystal quartz, chlorite-pseudomorphed amphibole and minor weakly sericite-chlorite-veined phenocrysts of orthoclase. Altered groundmass of fine granular quartz, sericite-stained orthoclase, and sericitised plagioclase in near-equant proportions with thinly disseminated microphenocrystal grains of quartz and altered (chloritised) ferromags. (biotite, amphibole). Sporadic discontinuous chlorite veinlets with interspersed films of hematite, crudely lensoid clusters of oxidised pyrite and a little quartz.

FABRIC:

Analogous to 431504, and particularly 431501 and 431510, but relatively stressed, with a mildly sheared "network" of semi-stockwork-style hematitic/pyritic chlorite(-quartz) veinlets.

ACCESSORIES:

Disseminated primary magnetite, rare zircons and minor leucoxenised opaques. Secondary leucoxenic semi-opaques in altered ferromags. (biotite).

COMMENTS:

Close affinities with 431501 etc. in terms of relict primary compositional and textural features. Similarly altered, with some evidence of a chloritic overprint on biotitisation (i.e. similar to 431510), and with hematite-pyrite-mineralised, weakly siliceous chlorite veinlets predating late stress effects.

SAMPLE NO.:

431512

(T.S. 61464)

6.

CLASSIFICATION:Altered, Sheared Biotite RhyoliteCOMPOSITION:

Frequent sericite-pseudomorphed feldspar and fine to semi-sericitic muscovite-pseudomorphed biotite phenocrysts, subordinate variably stressed/partly recrystallised relict, variably corroded quartz phenocrysts; sporadic zones (to 2.5 mm) of relatively massive sericite "studded" with fine muscovitised biotite flakes in a matrix of sericitised and sericitic quartz-pseudomorphed fine (mean 75 μ m) granular feldspar and subordinate quartz. Sporadic irregular films of micro-crystalline vein-quartz with interspersed spongy zones of limonite and Mn-oxide.

FABRIC:

Strongly and generally coarsely porphyritic with late magmatic "megacrysts" of (sericitised) biotite-inclusive feldspar and an even-grained granular groundmass. Heterogeneously sheared to semi-mylonitised (post veining and alteration).

ACCESSORIES:

Thinly disseminated martitised magnetite and subordinate leucoxenised opaques. Secondary leucoxenitic semi-opaques and ultrafine rutile in altered biotite. Semi-pervasive limonitic and Mn-oxidic stainings partly concentrated in discontinuous microfractures.

COMMENTS:

A thoroughly altered (sericitised, partly silicified) biotite rhyolite verging texturally on a (feldspar-biotite-quartz) "porphyry" (porphyritic biotite microgranite). The alteration pattern is similar to that in sample 431509. In contrast, this rock exhibits quartz veinlets, with spongy limonite and Mn-oxide masses apparently representing degraded "sideritic" carbonate, and relatively marked post-alteration heterogeneous shearing effects.

SAMPLE NO.:

431513

(T.S. 61465)

7.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent semi- to sericitic white mica-pseudomorphed feldspar-, chlorite-pseudomorphed biotite-, subordinate chloritised ferromagnesian (?amphibole), and relict variably corroded quartz phenocrysts in an altered groundmass of granular quartz (mean 100 um), and quartz-chlorite-sericite-altered feldspar with disseminated chloritised biotite flakes and minor corroded relics of orthoclase. Sporadic relatively massive aggregates of hematite-stained fine to semi-sericitic white mica with marginal patches/clusters of chloritised biotite and impersistent selvages of fine- to medim-grained "crystal" quartz.

FABRIC:

Strongly/coarsely porphyritic, with a relatively coarse and uneven-grained granular groundmass. Variably stressed, with associated networks of chloritic, weakly displacive micro-fractures.

ACCESSORIES:

Partly degraded and ferruginised corroded relics of phenocrysts green-brown biotite. Minor phenocrystal ferromag.-replacive semi-sericitic white mica. Disseminated, partly martitised, relatively coarse magnetite, rare zircons and leucoxenised opaques. Secondary altered biotite-associated leucoxenitic semi-opaques.

COMMENTS:

Compositional affinities with 431501 etc. and similarly altered. Contrasts with the relatively felsic and sericite-altered 431509 and 431512. Coarser, hematitic, relatively massive patches of "sericite" exhibit compositional zoning with chloritised biotitic margins and siliceous selvages, and are interpreted as (altered feldspathic) miarolytic vugs on the basis of textural and compositional features. These features suggest a relatively shallow intrusive mode of origin.

002
SAMPLE NO.:

431519

(T.S. 61467)

567063
8.

CLASSIFICATION:

Altered Hornblende-Biotite Rhyolite

COMPOSITION:

Frequent sericite-pseudomorphed plagioclase and variously muscovitised to chloritised biotite phenocrysts, subordinate corroded quartz, incipiently sericite-veined sanidine-anorthoclase and chloritised amphibole phenocrysts in a groundmass of fine granular K-feldspar (mean 50 um), with subordinate quartz and sericitised ?albite.

FABRIC:

Strongly porphyritic, weakly flow-structured, with minor "megaphenocrysts" of sanidine-anorthoclase. Very weakly stressed.

ACCESSORIES:

Minor miarolitic vugs of sericite (after feldspar?) with marginal chloritised biotite and impersistent quartz selvages. Disseminated to semi-conspicuous magnetite, minor leucoxenised opaques, rare zircons, very rare apatite. Minor chloritic/partially degraded relics of phenocrystal biotite. Sporadic discontinuous sericitic and chloritic microfractures. Secondary limonitic Fe-stainings.

COMMENTS:

A typically altered porphyritic hornblende-biotite-rhyolitic minor intrusive with compositional affinities to 431501 etc. The minor miarolitic vugs are similar to those in 431513, compositionally and texturally (i.e. similarly zoned), but are distinctly finer-scale (max. 1.5 mm). Alteration is rather selective, with much of the primary K-feldspar persisting.

068

567064



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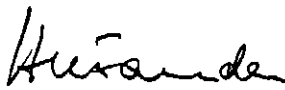
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12th May, 1989

REPORT CMS 89/3/40

YOUR REFERENCE:	Letter dated 23.3.1989
DATE RECEIVED:	30th March, 1989
SAMPLE NOS.:	9 Samples
SUBMITTED BY:	R.J. Henham
WORK REQUESTED:	Petrology

Copy to:
Mr. H. Skey
Exploration Manager
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H.W. Fander, M. Sc.

REPORT CMS 89/3/40

A suite of nine rock chip samples was received for petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with respective cobaltinitrite-stained offcuts, in oblique incident light.

Attached descriptions, appended by mineragraphic notes on sample 431536, summarise the microscopic data and include interpretative comments.

Summary

The bulk of this suite comprises altered porphyritic rhyolites with minor intrusive characteristics. These rocks are variously relatively sodic to sodi-potassic types with generally conspicuous altered ferromagnesian silicate phenocrysts (biotite, amphibole and possibly pyroxene), and are closely analogous to the altered Bond Porphyry hornblende-biotite rhyolites recently described (refer CMS 89/3/30).

Alteration assemblages are detailed in the individual descriptions and typically comprise sericite-chlorite assemblages. Chlorite is, at least locally, overprinted on replacive, as distinct from primary, biotite. Hematitic "mineralisation" appears in conjunction with relatively sericitic assemblages, and temporally intermediate to late quartzofeldspathic veining is developed locally. Overall, there are broad similarities with the alteration pattern in Cu- and Au-porphyry situations.

A subordinate suite of quartzose sediments is represented. These rocks are weakly acid volcanomict and locally weakly tuffaceous. A sand-matrixed conglomerate (sample 431536) exhibits hematite-phyllsilicate alteration broadly analogous to that in the altered rhyolites.

D. Cowan, B. Sc.

SAMPLE NO.:

431522

(T.S. 61496)

1.

CLASSIFICATION:Sericitic OrthoquartziteCOMPOSITION:

Framework of silt to medium/minor coarse sand-sized angular to subround quartz grains/minor orthoquartzitic, metaquartzitic and vein-type composites, minor clasts of pure and impure (sericitic) chert. Intergranular cement of semi- to sericitic white mica with a little microcrystalline quartz, supplemented by minor overgrowth quartz.

FABRIC:

Poorly/trend bimodally sorted silty fine to medium sandy clastic with slumped bedding traces. Incipiently stressed and microfractured.

ACCESSORIES:

Sporadic irregular limonitic/Fe-stained sericitic microfractures. Disseminated detrital leucoxenic semi-opaques, degraded/Fe-stained opaques, zircons, traces of monazite, tourmaline, chromite, rare apatite and rutile. Minor traces of silt-sized detrital muscovite. Traces of oxidised sericitic cement-hosted fine-grained pyrite.

COMMENTS:

A well consolidated, weakly stressed and microfractured but essentially unmetamorphosed argillaceous orthoquartzite. This rock includes thinly disseminated weakly abraded volcanic quartz grains, but these represent the only volcanically derived component and there are no tuffaceous features. Includes minor low-grade metamorphic terrain-derived lithoclasts. Only incipiently micaceous.

056

SAMPLE NO.:

431525

(T.S. 61497)

2.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent semi- to sericitic white mica-pseudomorphed plagioclase-, subordinate chlorite-sericite-pseudomorphed biotite and amphibole-, mildly corroded quartz and weakly/variably sericitised K-feldspar (orthoclase) phenocrysts. Groundmass of microgranular (mean 20 um), incipiently sericitic Fe-pigmented albite with relatively minor quartz, minor clots and crude microspherulites of K-feldspar, and disseminated microscopic flakes and laths of chloritised biotite and similarly altered amphibole.

FABRIC:

Strongly porphyritic/trend glomeroporphyritic and incipiently flow-structured.

ACCESSORIES:

Conspicuous partly martitised primary magnetite, relatively minor leucoxenised ilmenite, rare zircons. Traces of chloritic/degraded amphibole-replacive biotite and similarly distributed K-feldspar. Ultrafine cloudy rutile in altered ferromagnesian phenocrysts.

COMMENTS:

Textural features consistent with a minor intrusive mode of origin. Exhibits chlorite-sericite alteration with some evidence of a prior K-metasomatic (biotitisation/K-feldspathisation) alteration assemblage. Exhibits relatively abundant primary magnetite, partly martitised, but devoid of strictly secondary hematite.

SAMPLE NO.:

431526

(T.S. 61498)

3.

CLASSIFICATION:Chloritised, Veined Biotite RhyoliteCOMPOSITION:

Aggregates of fine-grained Fe-chlorite, with a little intergrown semi-sericitic white mica, and relict fine granular (mean 75 μ m, "granitic") quartz with disseminated weakly white micaceous chloritic pseudomorphs after phenocrystal biotite, sericitic to chloritic semi-pseudomorphs after feldspar phenocrysts, and stressed/partly recrystallised corroded relict phenocrystal quartz. Sectioned area includes a zone of relatively massive fine-grained vein-chlorite with disseminated an- to euhedral, variably chlorite-stained quartz crystals (mean 300 μ m) and disseminated to marginally concentrated intraclasts and "xenocrysts" of the altered host rock (mainly phenocrystal quartz grains).

FABRIC:

Variable. Gradational from strongly porphyritic/weakly flow-banded with irregular networks of Fe-stained chlorite-sericite veinlets, through zones of chlorite-matrix breccia, to massive chlorite(-quartz) rock with intraclasts of the altered rhyolitic host rock.

ACCESSORIES:

Disseminated variably martitised and degraded magnetite (relict primary in host rock, intraclastic in vein), relatively minor similarly distributed leucoxenised opaques and rare zircons. Thinly disseminated single grains and microscopic clots of oxidised pyrite, concentrated in the host rock. Secondary Fe-stainings.

COMMENTS:

A thoroughly altered veined and marginally brecciated biotite-rhyolitic minor intrusive, relatively coarse-grained in comparison with previous examples. Vein-distal zones are relatively sericitic and the apparent alteration trend is sericitisation overprinted by fracture-controlled chloritisation. The oxidised pyrite disseminations appear to be related to the initial sericitic phase, but finer detail is obscured by secondary Fe-stainings and the presence of locally thoroughly degraded primary magnetite.

SAMPLE NO.:

431528

(T.s. 61499)

4.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent extensively sericitised to locally degraded/chloritic biotite-stained feldspar (?albite) phenocrysts, subordinate weakly corroded quartz phenocrysts and sericite-chlorite-pseudomorphed amphibole phenocrysts, minor similarly altered phenocrystal biotite flakes. Altered groundmass of sericite-stained microcrystalline feldspar (?albite, mean 15 um) with a little similarly textured quartz and pervasive microscale networks of sericite films.

FABRIC:

Strongly porphyritic, incipiently flow-structured and compositionally banded on a centimetric scale, with alternate relatively quartz- and altered feldspar-phenocrystal zones.

ACCESSORIES:

Kaolinitic-degraded, poorly optically determinate corroded relics of phenocrystal feldspar. Minor traces of feldspar phenocryst-replacive quartz. Minor irregular veinlets of sericite and chloritic-degraded biotite. Disseminated magnetite, relatively minor leucoxenised opaques and rare zircons. Minor ultrafine secondary leucoxenitic semi-opaques.

COMMENTS:

Interpreted as primarily a relatively sodic rhyolite with compositional affinities to 431525, but relatively deficient in (altered) phenocrystal biotite and with a finer-grained relatively feldspathic/quartz-deficient groundmass. Poorly diagnostic in terms of extrusive or intrusive modes of origin, but probably intrusive. Exhibits essentially sericitic alteration with some evidence of selective biotite-quartz(-sericite) alteration of accessory phenocrystal K-feldspar. Finer detail obscured by partial weathering effects.

SAMPLE NO.:

431529

(T.S. 61500)

5.

CLASSIFICATION:Ferruginised Sericitic OrthoquartziteCOMPOSITION:

Framework of fine to medium sand/minor coarse sand to grit sized subangular to subround quartz grains, relatively minor orthoquartzitic and metaquartzitic, vein-type and stressed/partly recrystallised vein-type composites, clasts of pure and impure (argillaceous) chert, minor clasts of silicified/sericite-stained felsitic-devitrified "rhyolite" and thinly disseminated feldspar (oligoclase-albite, orthoclase, rare microcline) grains. Variably degraded and limonitic Fe-stained to ferruginised semi- to sericitic white mica cement with a little crypto- to microcrystalline quartz.

FABRIC:

Poorly/trend bimodally sorted and essentially massive (i.e. unbanded). In detail, exhibiting slumped/contorted bedding traces and minor intraclastic zones of sericitic pelite-matrixed sandstone and quartzose sandy pelite. General features analogous to 431522. Similarly incipiently stressed.

ACCESSORIES:

Thinly disseminated/relatively conspicuous detrital chromite, subordinate leucoxenic semi-opaques, variably degraded opaques (magnetite in part), minor zircons, tourmaline, rare rutile. Minor ferruginised sericitic microfractures.

COMMENTS:

Close affinities with 431522, similarly slumped and incipiently stressed. In comparison, this rock is coarser-grained, slightly relatively feldspathic and lithoclastic, and exhibits relatively abundant reworked acid volcanic debris with abraded "phenocrystal" quartz grains supplemented by siliceous (altered) felsitic rhyolitic lava clasts. Includes minor traces of siliceous lithoclast-hosted oxidised very fine pyrite. Clastic grains of chromite are relatively abundant.

SAMPLE NO.:

431531

(T.S. 61502)

7.

CLASSIFICATION:Altered Hornblende-Biotite RhyoliteCOMPOSITION:

Frequent chloritised biotite and sericite-pseudomorphed plagioclase phenocrysts, subordinate variably corroded quartz, fresh to weakly sericitised K-feldspar (sanidine), and chlorite-pseudomorphed (+ a little quartz and sericitic fringes) amphibole phenocrysts. Weakly altered felsic groundmass of fine (mean 50 um) granular K-feldspar, subordinate quartz and relatively minor sericitic plagioclase (?albite). Minor discontinuous microscale quartz veinlets with interspersed clots of microcrystalline hematite.

FABRIC:

Relatively strongly porphyritic and flow-structured (dimensionally orientated phenocrysts/very incipiently directed groundmass). Very incipiently stressed. Quartz veinlets are subparallel to the weak flow fabric.

ACCESSORIES:

Disseminated magnetite, subordinate leucoxenised opaques, rare zircons. Relatively conspicuous ultrafine leucoxenic semi-opaques in altered biotite. Traces of corroded relict primary (red-brown) and secondary (amphibole-replacive, green) biotite.

COMMENTS:

A relatively porphyritic but otherwise texturally typical sodi-potassic hornblende-biotite rhyolite. This rock exhibits good evidence of "K-metasomatic" alteration in terms of biotitisation of phenocrystal amphibole, although this is largely obscured by subsequent chloritisation of the replacive biotite aggregates. It is uncertain whether the quartz veinlet and minor altered phenocryst-hosted hematitic Fe-oxide clots were initially hematitic or represent degraded sulphide disseminations.

SAMPLE NO.:

431533

(T.S. 61503)

8.

CLASSIFICATION:Altered, Hematitised, Veined RhyoliteCOMPOSITION:

Disseminated relict variably corroded quartz and variably sericite-hematite-stained K-feldspar (sanidine) phenocrysts, relatively frequent extensively sericitised and hematite-stained plagioclase phenocrysts and hematite + minor sericite and quartz semi-pseudomorphs after phenocrystal ferromags. (biotite and ?amphibole). Groundmass of granular K-feldspar (mean 50 um) with subordinate quartz and selectively sericitised plagioclase with discontinuous variably hematitic films of sericite. Discontinuous veins (to 4 mm wide) of K-feldspar (adularia) and quartz with minor associated "blind" quartz-sericite veinlets.

FABRIC:

Strongly porphyritic with a weakly microporphyritic even-grained granular groundmass. Stressed with mildly displacive sericitic veinlets. Relatively stressed, comb-structured, early generation and mildly unstressed, relatively massive, late adularia-quartz veins.

ACCESSORIES:

Variably martitised primary magnetite, rare leucoxenised/hematitised opaques and rare zircons. Traces of poorly twinned albite in adularia-quartz veins.

COMMENTS:

Interpreted as primarily a hornblende-biotite-rhyolitic minor intrusive with affinities to the associated suite. Exhibits marked sericite-hematite alteration, semi-selective after phenocrystal plagioclase and ferromags. This is complexed by two stages of quartz-adularia veining with an intermediate phase of sericitic fractures grading locally into sericite-quartz veining. Bulk of veining appears to postdate, but may be late semi-contemporaneous with, the pervasive sericite-hematite assemblage.

SAMPLE NO.:

431536

(T.S. 61504)

CLASSIFICATION:Hematitic ConglomerateCOMPOSITION:

Loose pebbly framework of variably hematite-stained low-grade regional metaquartzite and quartzose metasiltstone clasts, clasts of pure chert and variably hematitised-argillaceous impure chert/cherty argillite, subordinate clasts of relatively hematitised pelite and ?sericitic/argillaceous altered rhyolitic lava, minor coarse vein-type quartz composites. Matrix of hematite-cemented, fine-to medium-grained, angular to subangular orthoquartzitic sand with relatively abundant clasts of chert supplementing detrital quartz grains. Sporadic vugs (to 2 mm) of relatively massive hematite.

FABRIC:

Hematite-cemented, fine to medium sand-supported, conglomeratic.

ACCESSORIES:

Thinly disseminated detrital zircons, leucoxene, rare tourmaline. Sporadic clots of degraded/poorly determinate phyllosilicate (?biotite) interspersed with the hematite cement.

COMMENTS:

Bulk of clastic debris is a composite of cherty and pelitic sedimentary, low-grade regional metasedimentary and quartzose detrital sandy components. This rock is, however, weakly acid-volcanomict and includes rare locally derived and possibly strictly pyroclastic volcanic quartz grains. The hematite cement is mildly corrosive and also replaces labile (argillaceous) lithic clasts. Associated clots of degraded phyllosilicate indicate a hydrothermal origin.

REPORT CMS 89/3/40Mineragraphic Notes

431536 (P.S. 61504)

Mineragraphic examination of this altered conglomerate confirms the cement and replacive oxide phase as hematite, typically microcrystalline with subordinate fine-grained specular-textured aggregates. Replacive hematite is invariably microcrystalline. The cement is a composite of microcrystalline and subordinate specular hematite aggregates, the latter typically at the cores of relatively massive aggregates, for example the sporadic interclastic vugs, and then partly in composite with decussate-textured, partly degraded clots of phyllosilicate.

Martitised magnetite is thinly disseminated throughout the hematite-stained lithoclasts and also occurs as discrete clastic grains. Lithoclasts rarely contain traces of pyrite exhibiting "primitive" microtextures (framboidal in part) and extensively pseudomorphed by hematite. One clast exhibits a microscopic bleb of chalcopyrite. Accessories include traces of clastic chromite and traces of rutile developing along with hematite as a replacement of the detrital leucoxene.

Closer examination revealed no detectable sulphide or noble metal components in association with the secondary hematite.

D. Cowan, B. Sc.

567075

APPENDIX C
LEAD ISOTOPE GEOCHEMISTRY - C.S.I.R.O.

073

Sirotope



CSIRO
AUSTRALIA

567070

Division of Exploration Geoscience

Delhi Road, North Ryde, NSW Postal Address: PO Box 136, North Ryde NSW 2113
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Chief: Dr B.J. Embleton

REPORT TO ABERFOYLE RESOURCES LIMITED

ON THE Pb ISOTOPIC COMPOSITIONS

AND METALLOGENIC ASSOCIATION OF EXPLORATION SAMPLES

FROM TEN MILE GRID AND THE MACKINTOSH LICENCE, N.W TASMANIA

REPORT SR 092

GRAHAM R. CARR
JUDITH A. DEAN

29/8/89

R e s e a r c h A d v a n c i n g A u s t r a l i a

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1. AIMS OF STUDY

The aim of this study has been to determine the likely metallogenic association of exploration samples from the Ten Mile Creek grid, Mount Romulus situated about 10km ENE of Hellyer, and from two locations in the Mackintosh licence (106/87).

2. SAMPLES

TEN MILE GRID A sample of gossanous sandstone with 3000ppm Pb (431546) and a soil with an anomolous Pb content (516031) were provided by A. McNeill. Both were from probable Cambro-Ordovician rocks.

3. TARGET SIGNATURES

All major Cambrian ore deposits of western Tasmania have similar Pb isotopic compositions confirming that they formed as part of a major metallogenic event (see Gulson and Porritt, 1987). A relatively homogeneous isotopic composition over such a region suggests the hydrothermal systems were very large, leaching Pb and other elements from a significant volume of crust and thus tending to average out local variations in the Pb isotopic composition of the source rocks. The Cambrian massive sulfide ("target") signature is represented in this study by the overlapping fields for Hellyer, Que River and Rosebery(+Hercules) (Fig. 1). The fields are 95% confidence ellipses which depict the mean ± 2 x standard deviations of data for each deposit. Despite the averaging effect of the hydrothermal systems, minor differences can be expected between deposits, as is exemplified by Rosebery/Hercules and Que River/Hellyer fields.

Minor mineralization in western Tasmania commonly consists of discontinuous pods or veins. The isotopic composition of such mineralization varies between occurrences indicating that the hydrothermal systems were probably much smaller. Most examples of this mineralization have isotopic compositions that are more radiogenic than the Cambrian target (i.e. higher $^{206}\text{Pb}/^{204}\text{Pb}$ ratios, Fig 1.) and some can be associated with Devonian plutonism (e.g. Queen Hill, Mt Farrell).

However, other examples have isotopic compositions that are less radiogenic than the Cambrian target, e.g. WOW/CAB, an old Comstaff prospect in the Oonah Formation and the Marionoak mineralization on the Pieman Dam road (Fig. 1). While the origin of such mineralization remains enigmatic, the low $^{206}\text{Pb}/^{204}\text{Pb}$ ratios may result from leaching of Pb from nearby Precambrian source rocks. At both WOW/CAB and Marionoak both more radiogenic and less radiogenic populations are present indicating a complex

Although it is likely that Devonian thermal events were responsible for the generation of these relatively localized hydrothermal systems, it is possible they developed at other times, even during the Cambrian. Irrespective of the age, it is unlikely that such mineralization would have significant economic potential.

4. METHODS

Whole rock powders provided by Aberfoyle were leached in a mixture of 7N HNO_3 and 7N HCl acids. Lead was purified from the leachate by anion exchange in HBr solutions and by micro-electrodeposition techniques. The galena sample was dissolved in concentrated nitric acid and Pb was purified by electroplating

onto Pt electrodes as above.

Analyses were performed on an ISOMASS 54E thermal ionization mass spectrometer run in fully automated mode. Precision estimates for the ratios are depicted as error bars in the upper left hand corner of the ratio plots and are based on the analyses of over 1000 standards.

5. RESULTS

TEN MILE GRID The results are presented in Table 1 and in Figure 1. The Ten Mile Grid data show some variation, but plot within the Que River/Hellyer field.

6. DISCUSSION AND CONCLUSIONS

The Ten Mile Grid prospect samples have a high probability of representing the same Cambrian metallogenic event responsible for the Que River/Hellyer massive sulfide deposits.

TABLE 1. LEAD ISOTOPE RATIOS FOR TEN MILE GRID AND MACKINTOSH LICENCE.

Sample	$\frac{208 \text{ Pb}}{206 \text{ Pb}}$	$\frac{207 \text{ Pb}}{206 \text{ Pb}}$	$\frac{206 \text{ Pb}}{204 \text{ Pb}}$	$\frac{207 \text{ Pb}}{204 \text{ Pb}}$	$\frac{208 \text{ Pb}}{204 \text{ Pb}}$	Pb(ppm)
<u>TEN MILE GRID</u>						
1 431546	2.0824	0.8513	18.313	15.589	38.135	3,000
2 516031	2.0821	0.8502	18.359	15.608	38.225	470

REFERENCE DATA - TASMANIA

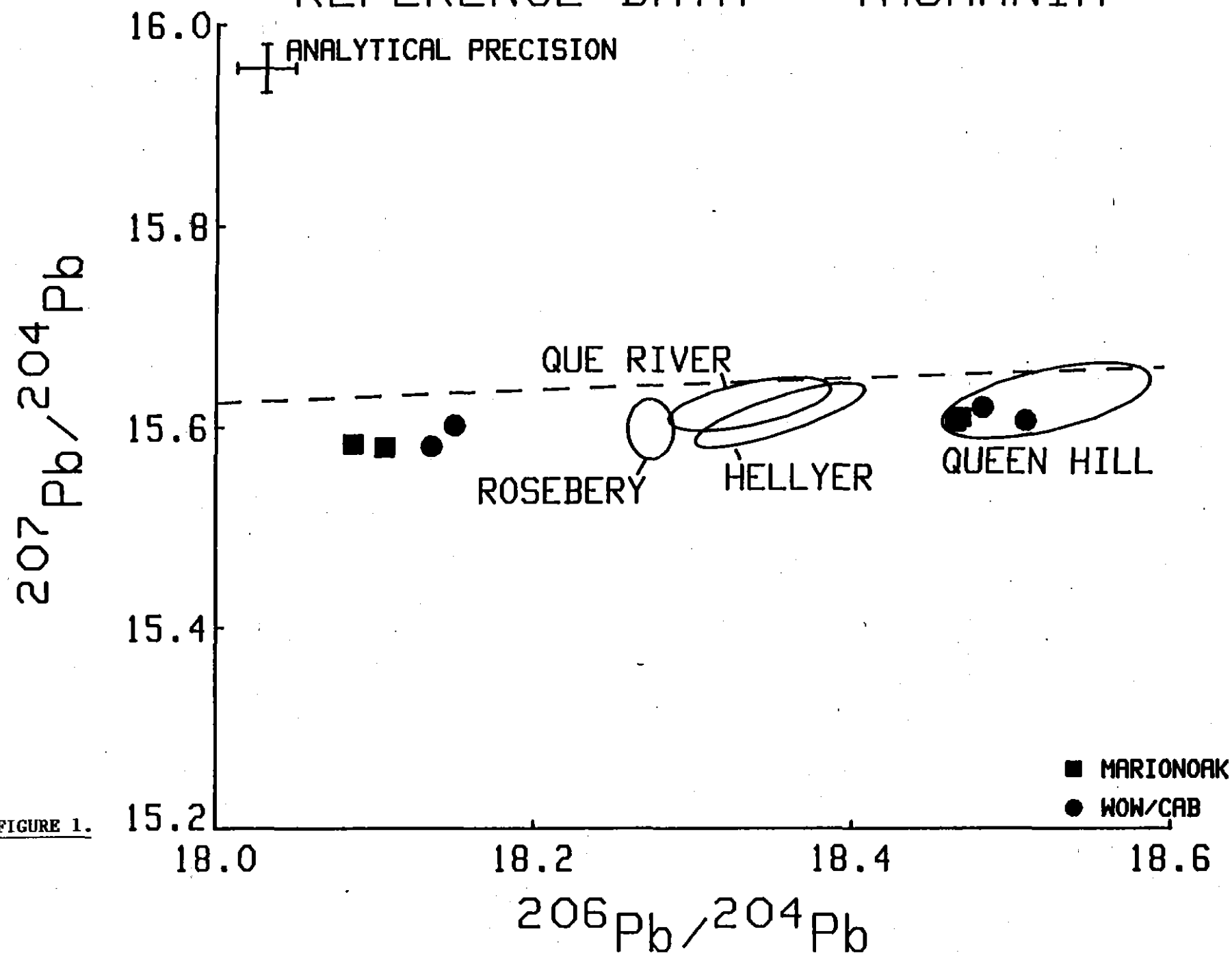


FIGURE 1.

567031

TEN MILE CREEK GRID

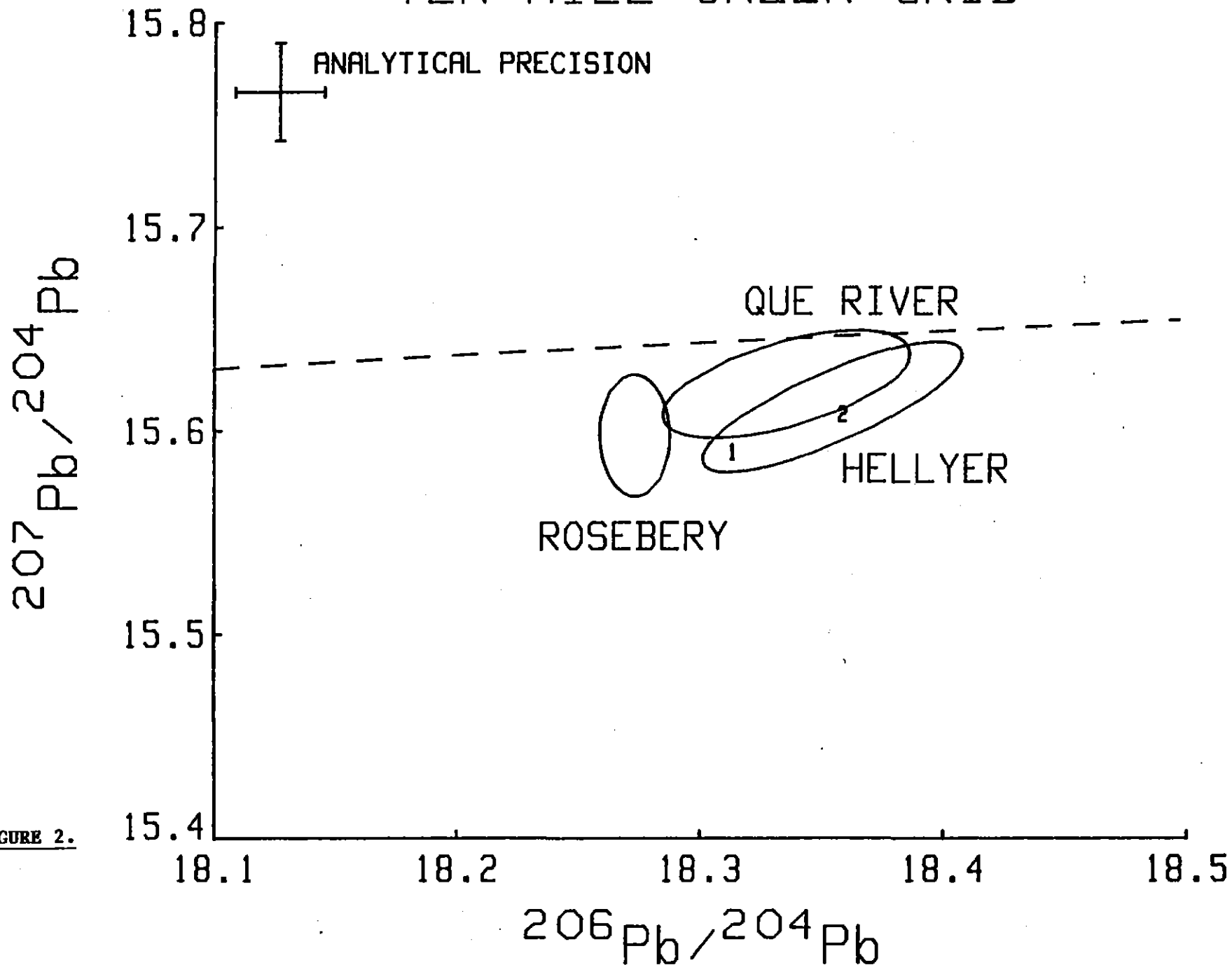


FIGURE 2.

567032

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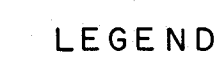
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APPENDIX D
TABLE OF GEOLOGICAL ABBREVIATIONS

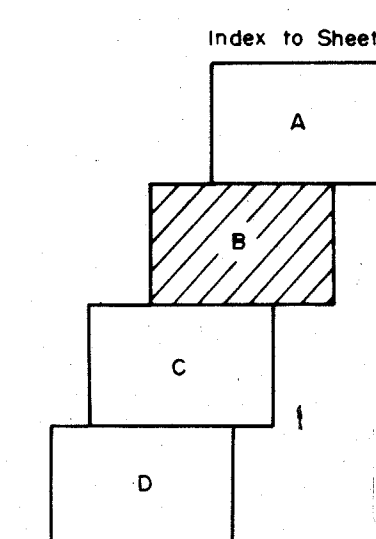
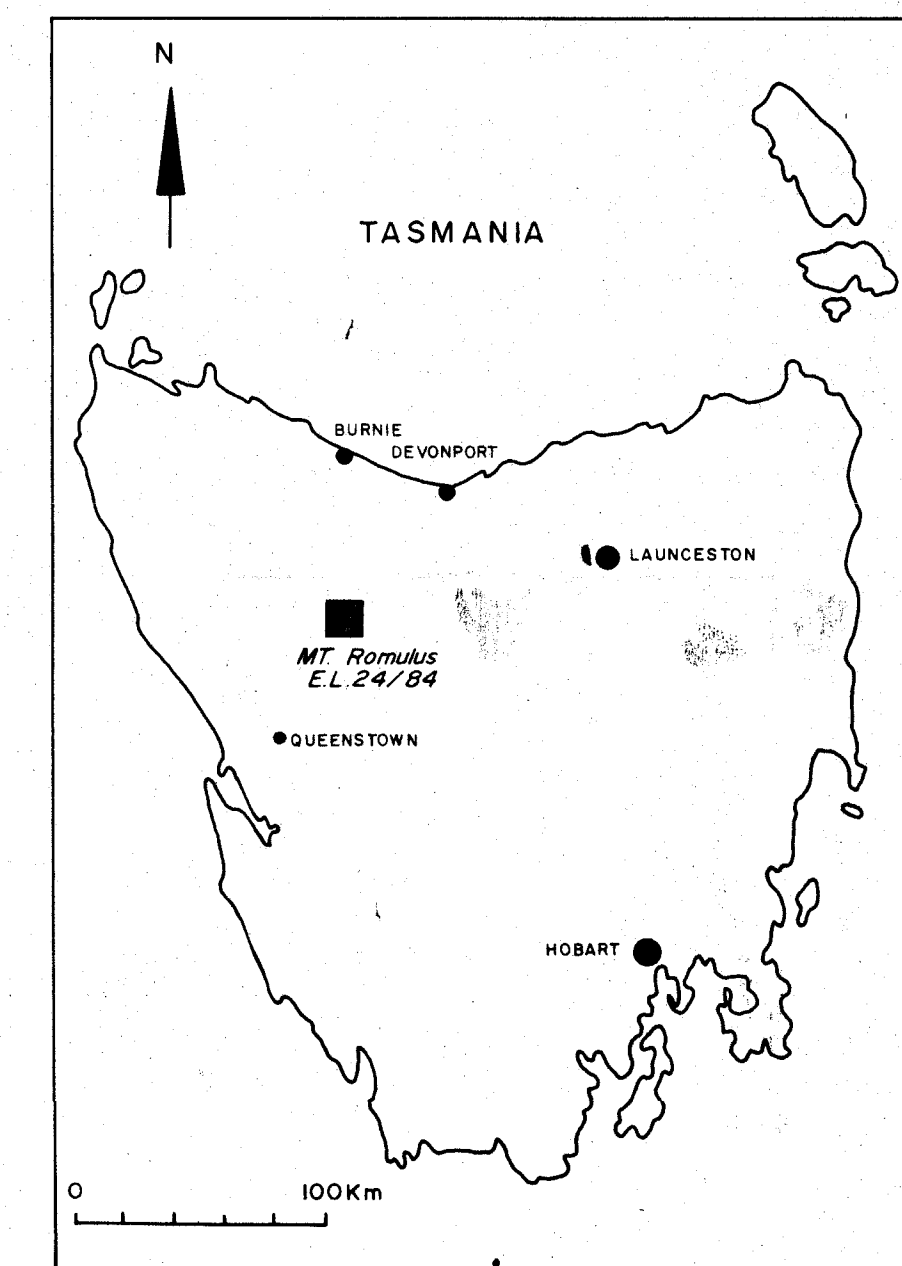
Abundant	abn	Dolomite	Dol	Mottled	mtl	Trace	tr
Adularia	Adl	Dyke	Dm	Mudstone	Mst	Trachyte	Tr
Agglomerate	agg	Elongated	dy	Nodule	nd	Tuff	Tf
Aibite	Ab	Emphasised	el	Off white	ow	Tuffaceous	tf
Alkali feldspar	Afd	Epiclastic (adj.)	emp	Olivine	Ol	Variable	var
Altered	alt	Epiclastic (noun)	e	Oolitic	oo	Variolitic	vr
Amphibolitic	amb	Epidote	Ep	Orange	or	Vein	vn
Amphibole	Amb	Euhedral	Euh	Ordovician	O	Vein concordant to bedd	cv
Amygdaloidal	amg	Eutaxitic	eux	Oxidised	ox	Vein discordant to bedd	dv
Andalusite	An	Fabric	fab	Patchy	pat	Very	v
Andesite	A	Fault	F	Peperitic	pep	Vesicular	ves
Angular	ang	Fault zone	FZ	Perlitic	pri	Vitric	vtr
Aplite	Ap	Feldspar	Fd	Pervasive	per	Volcanic	vlc
Approximate	apx	Feldspar phyrlic	fp	Phenocrysts	phn	Volcaniclastic	vlcl
Arcuate	ar	Felspathic	fel	Phyllite	phyl	Weak	wk
Arenaceous	arn	Ferruginous	fer	Phyrlic	P	Weathered	wth
Argillaceous	arg	Fibrous	fb	Picrite	Pic	White	wh
Argillite	Arg	Fine	f	Pillow lava	pl	Yellow	yw
Arkose	Ak	Fine grained	fg	Pink	pk		
Arkosic	ak	Fissile	fis	Polymict	Y		
Arsenopyrite	Ap	Flowbanded	fhn	Porphyritic	por		
Ash volcaniclastic	av	Foliated	fo	Predominantly	pred		
Autobrecciated	aub	Fragments	fr	Pumice	Pu		
Average	ave	Fuchsita	Fu	Pumiceous	pu		
Banded	bnd	Galena	Gn	Purple	pp		
Barite	Ba	Glass	Gl	Pyrite	Py		
Basalt	B	Glassy	gl	Pyritic	py		
Bedded	bd	Gossan	Gos	Pyroxene	Px		
Biotite	Bio	Granular	glr	Pyrrhotite	po		
Black	bk	Graphite	Gt	Quartz	Q		
Black shale	Bsh	Graphitic	gt	Quartzite	Qtz		
Blue	bl	Green	gn	Quellite	Qll		
Boulder	bld	Grey	gy	Questionable	?		
Breccia	b	Greywacke	Gw	Recrystallised	rx		
Breccia volcaniclastic	bv	Haematite	Hmt	Red	rd		
Bright	bri	Hornblende	Hb	Rehealed	rdh		
Brown	br	Ignimbrite	Ig	Reworked	rw		
Calcareous	cc	Illite	Il	Rhyodacite	RD		
Calcite	Cc	Interbedded	ibd	Rhyolite	R		
Carbonaceous	carb	Intercalated	icl	Ripple marks	rmk		
Carbonate	Co	Intrusive	int	Round	rnd		
Cavernous	cav	Jurassic	Ju	Rubble	rbb		
Chalcopryite	Cp	K-Feldspar	Kfd	Sandstone	Ss		
Chert	Ch	Khaki	kh	Schist	Sch		
Chlorite	Cl	Laminated	lm	Schistose	sch		
Chromite	Cr	Lapilli volcaniclastic	lv	Sediment	sed		
Chromitiferous	cr	Lava	l	Selected fragments	sfr		
Clay	cy	Lava breccia	lb	Sericite	Se		
Coarse	c	Leached	lch	Serpentine	Srp		
Coarse grained	cg	Limonitic	lhm	Shale	Sh		
Colloform	coll	Light	lgt	Sheared	shd		
Colour	col	Limestone	lst	Sheeted	sht		
Common	com	Lithic	lh	Siderite	Sid		
Conglomerate	Cg	Magnetite	Mt	Silica	si		
Conglomeratic	cg	Massive	mas	Siliceous	sll		
Crystal	x	Matrix	mtx	Siltstone	slt		
Crystal volcaniclastic	xv	Matrix dominated	md	Slickenside	slk		
Dacite	D	Medium	med	Sphalerite	Sp		
Dark	dk	Medium grained	mg	Spotted	spt		
Dense	dns	Metamorphosed	mg	Spotty	spt		
Devitrification	dv	Mica	mic	Stockwork	stw		
Diorite	Di	Micaceous	mic	Strong	str		
Disseminated	dis	Mineralised	min	Structure controlled	stc		
		Minor	mnr	Talc	Tc		
		Mixed	mx	Tertiary	T		
				Tourmaline	Tm		

567034

△ MT. Cripps



- 80 # SAMPLE LOCATION
- ⊙ 80 # AND BCL SAMPLE LOCATION

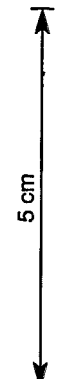


89-3040

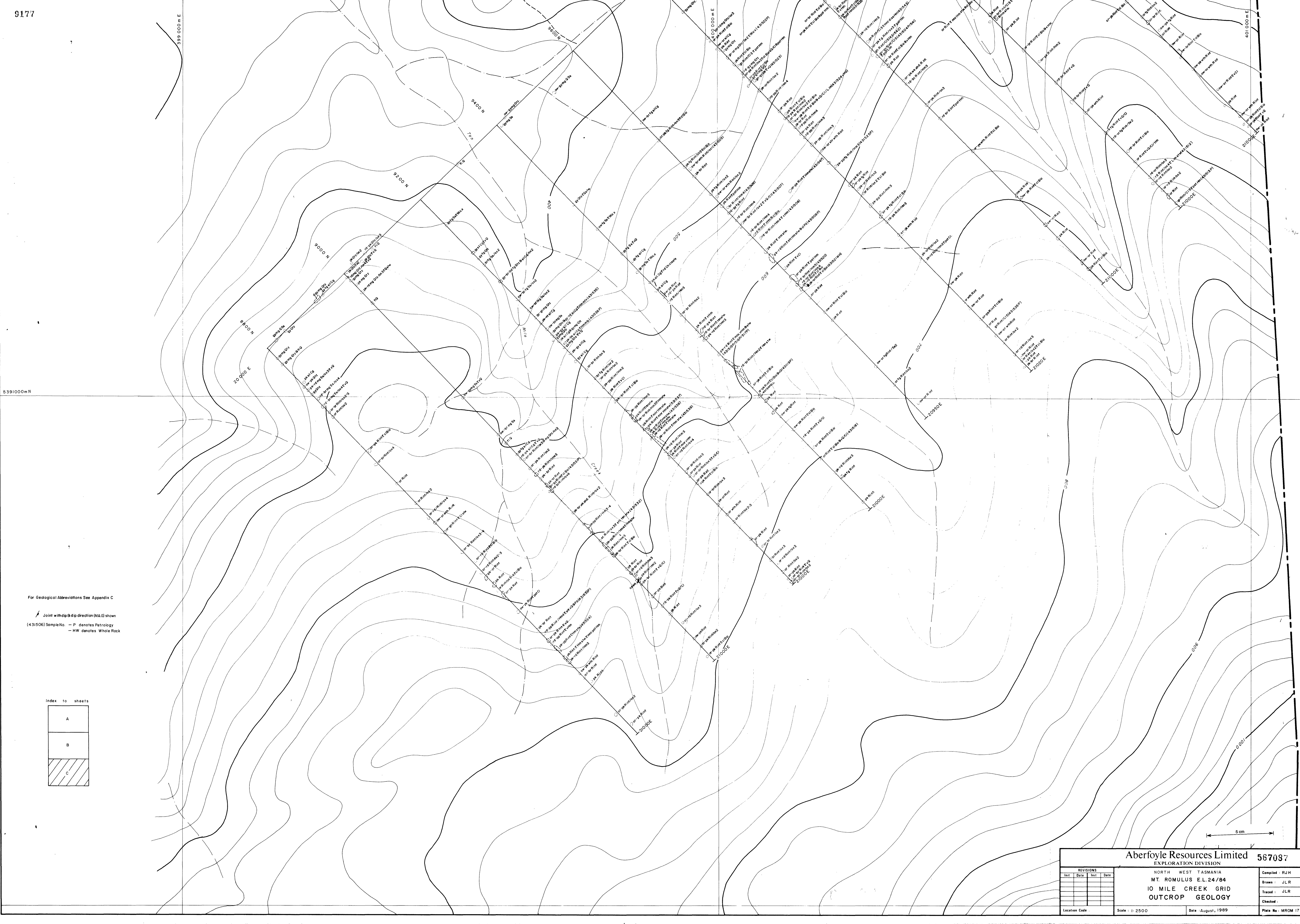
1000 metres

567085

Aberfoyle Resources Limited EXPLORATION DIVISION				Compiled : R J H	
NORTH WEST TASMANIA				Drawn : J L R	
MT. ROMULUS E.L.24/84 CRA J.V.				Traced :	
STREAM SEDIMENT SAMPLE LOCATIONS				Checked :	
Location Code :		Scale : 1:10,000		Date : March, 1989	
Plate No : M/Rom.14-B					



53 92 000 m N



For Geological Abbreviations See Appendix C

Joint with dip & dip direction (MA/G) shown
(431506) Sample No. — P denotes Petrology
— HW denotes Whole Rock

Index to sheets

A
B
C

REVISIONS

Init	Date	Init	Date

Aberfoyle Resources Limited 567087

EXPLORATION DIVISION

NORTH WEST TASMANIA

MT. ROMULUS E.L. 24/84

10 MILE CREEK GRID

OUTCROP GEOLOGY

Compiled: R/H

Drawn: JLR

Traced: JLR

Checked: JLR

Location Code:

Scale: 1:2500

Date: August, 1989

Plate No: MROM 17C

399 000m E

5393 000m N

400 000m E

401 000m E

To Mt. Cripps

Wetland

Trace

9500

10000

10200

10400

10600

10800

11000

11200

11400

5 cm

For Geological Legend See Sheet C.

5392 000m N

Index to sheets

A
B
C

REVISIONS

Init	Date	Init	Date

Location Code :

NORTH WEST TASMANIA

MT. ROMULUS E.L. 24/84

10 MILE CREEK GRID

GEOLOGICAL INTERPRETATION

Scale : 1 : 2 500

Date : August , 1989

Aberfoyle Resources Limited

EXPLORATION DIVISION

56708a

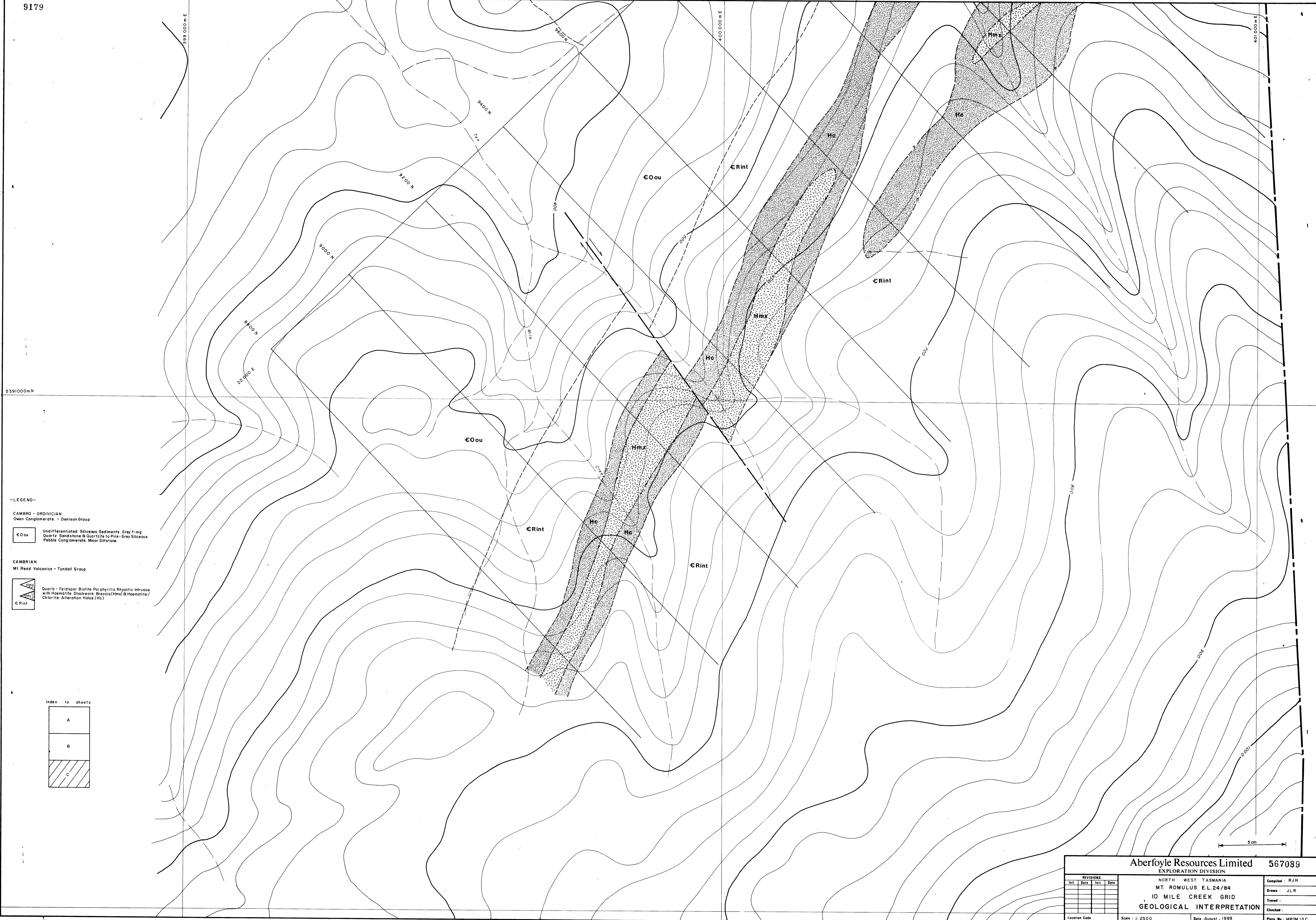
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Checked :

Plate No : MROM 188





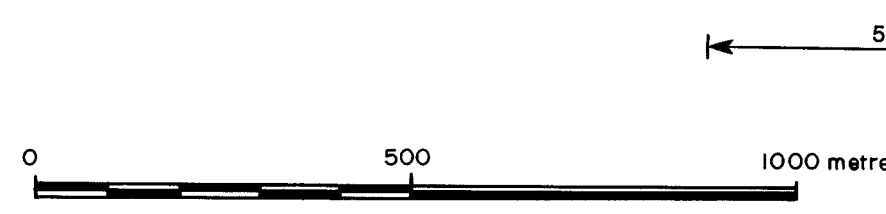
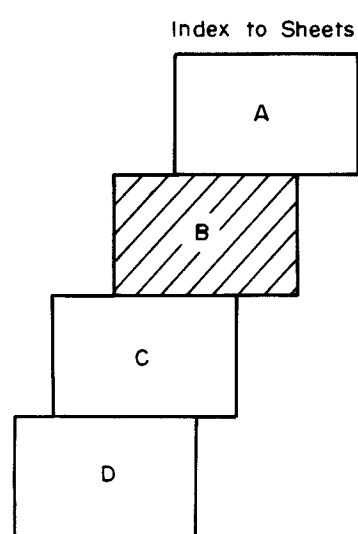
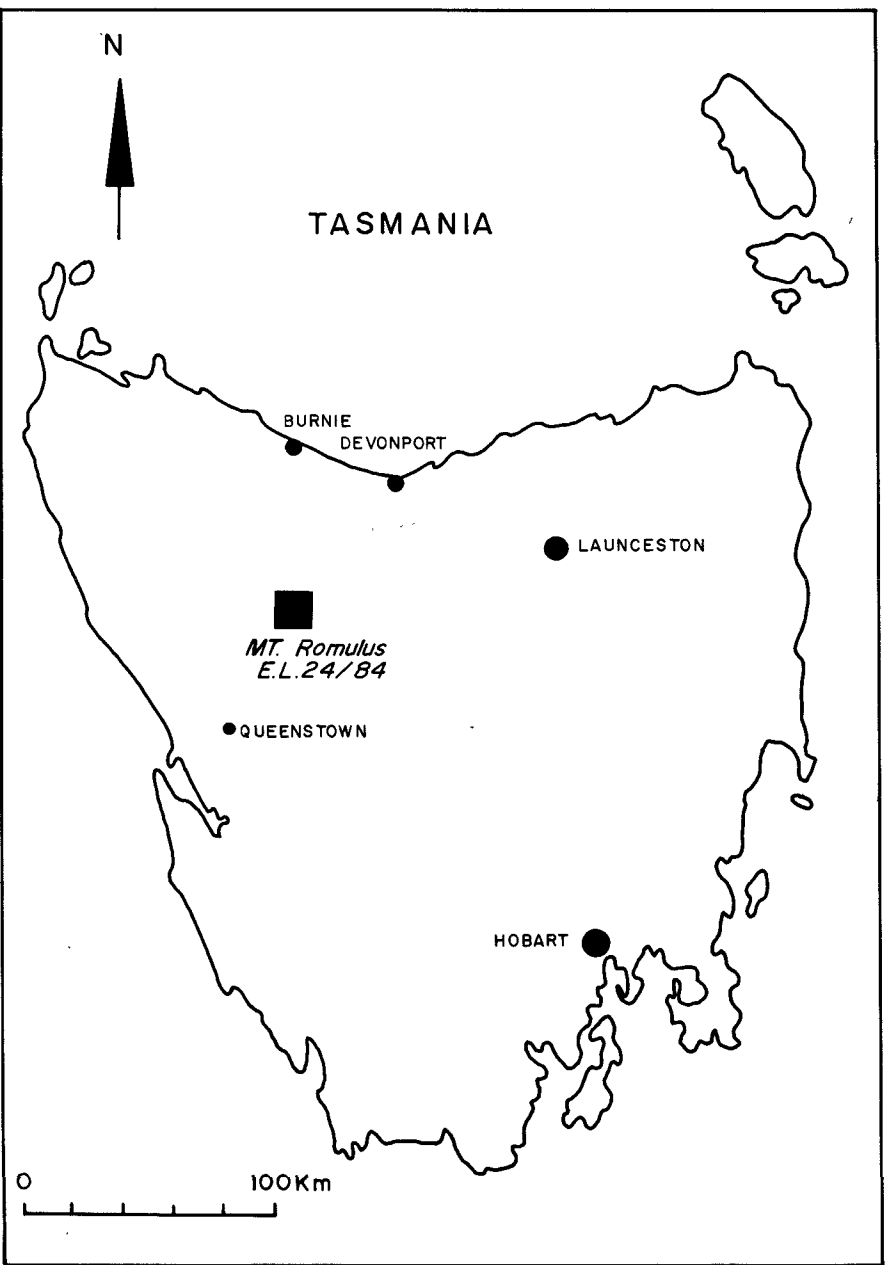
LEGEND

- 80 # SAMPLE LOCATION
- ⊙ 80 # AND BCL SAMPLE LOCATION

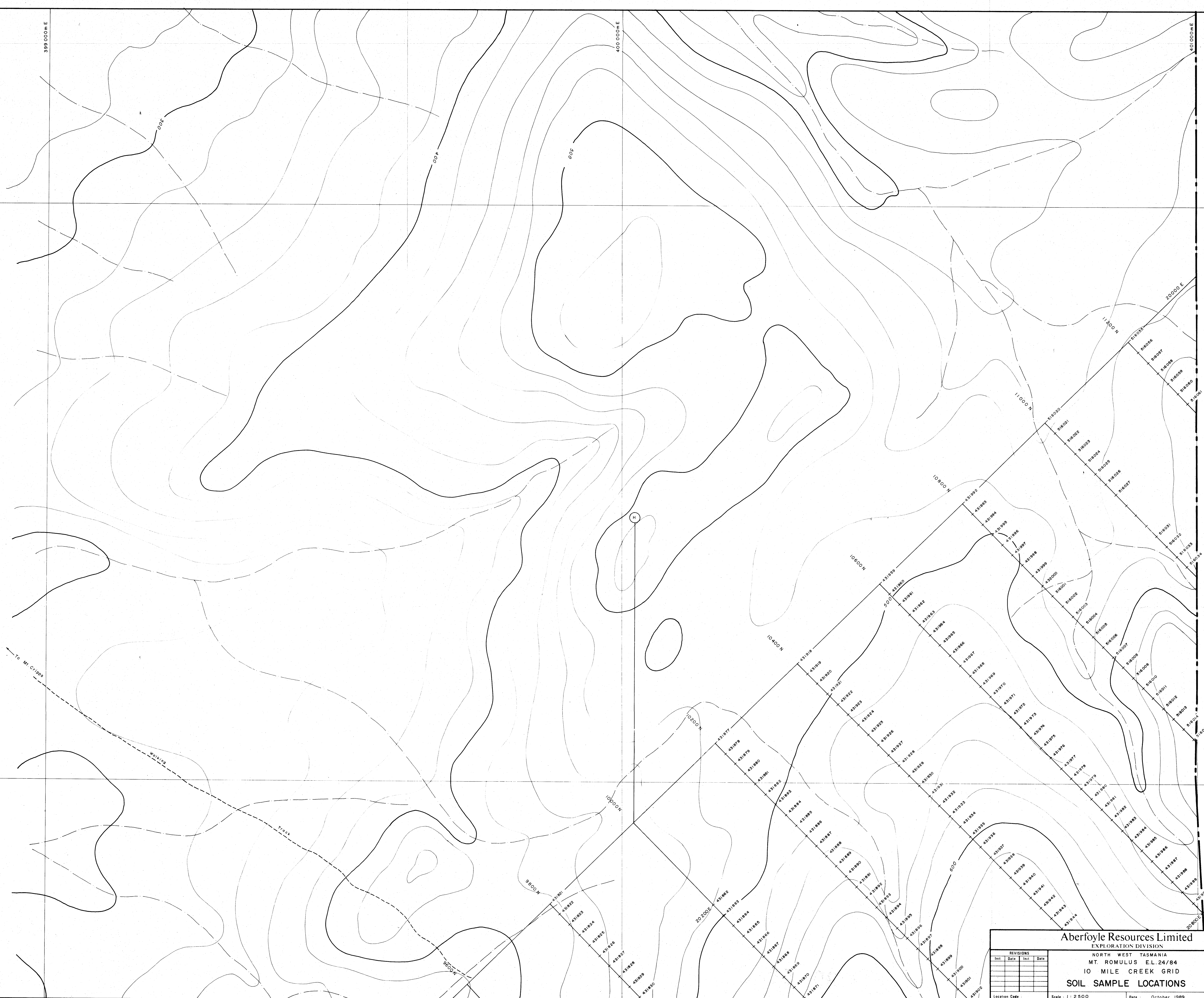
ALL RESULTS IN ppm EXCEPT FOR Fe % AND BCL Au IN ppt.

Cu, Pb, Zn, Au, Ag, As, Ba, Fe / Au (BCL)

X DENOTES BELOW THE LEVEL OF DETECTION.



Aberfoyle Resources Limited				567030
EXPLORATION DIVISION				
NORTH WEST TASMANIA				Compiled : R.J.H.
MT. ROMULUS E.L. 24/84 CRA J.V.				Drawn : J.M.S.
STREAM SEDIMENT ASSAY RESULTS				Traced : J.M.S.
				Checked : J.M.S.
Location Code :		Scale : 1:10,000	Date : October 1989	Plate No : M Rom. 20B



index to sheets	
A	D
B	E
C	

Aberfoyle Resources Limited EXPLORATION DIVISION				567091																																											
REVISIONS <table><thead><tr><th>Inst</th><th>Date</th><th>Inst</th><th>Date</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>				Inst	Date	Inst	Date																																					NORTH WEST TASMANIA MT. ROMULUS E.L.24/84 10 MILE CREEK GRID SOIL SAMPLE LOCATIONS		Compiled : R. J. H. Drawn : J. L. R. Traced : J. M. S. Checked :	
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Location Code		Scale : 1 : 2 500		Date : October 1989		Plate No. MROM 21B																																									



A	D
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Aberfoyle Resources Limited EXPLORATION DIVISION 567092																																											
<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>Int</th> <th>Date</th> <th>Int</th> <th>Date</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> NORTH WEST TASMANIA MT. ROMULUS E.L.24/84 10 MILE CREEK GRID SOIL SAMPLE LOCATIONS Compiled R.J.H. Drawn J.L.R. Traced : J.M.S.* Checked:				REVISIONS				Int	Date	Int	Date																																
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Location Code		Scale 1:2500	Date October 1989																																								
Plate No. MROM 21C.																																											

Lake Mackintosh

SOUTHWEST CONSERVATION AREA

89-3040

Aberfoyle Resources Limited				537093	
EXPLORATION DIVISION					
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MT. ROMULUS E.L. 24/84 BACKPEAK E.L. 89/87CRAJV.				Drawn:	
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OUTCROP GEOLOGY				Checked:	
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