EXPLORATION LICENCE 26/86

SWIFT CREEK

TASMANIA

REPORT ON EXPLORATION ACTIVITY

TO 14TH JANUARY 1989

DISTRIBUTION	COPY NO.
DEPARTMENT OF MINES	1/4
CRA EXPLORATION	2/4
ABERFOYLE - HAWTHORN	3/4
ABERFOYLE - BURNIE	4/4

PREPARED BY:
R. J. HENHAM,
GEOLOGIST.

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

JANUARY 1989.

CONTENTS

APPENDICES

PLATES

1. SUMMARY

This report summarises the exploration activity on EL 26/86 conducted by Aberfoyle Resources Limited for the 12 months to 14th January, 1989.

Gridding followed by geological mapping, rock chip and soil sampling was conducted in the Rinadeena area during July and August of 1988.

Pulps from 1984-85 stream sediment samples taken from the Swift Creek drainage system by EZ were reanalysed for Au, Ag and As.

2. INTRODUCTION

Exploration Licence 26/86 (Swift Creek) of 76 square kilometres is centred approximately 18 kilometres south-west of Queenstown (see plate SWC 1b). The majority of the area is rugged and heavily forested. A primitive road system gives limited access to the western and southern portions of the EL. In the Rinadeena area foot access can be gained along the Abt railway cutting from Lynchford, and from the Lyell Highway via a HEC track.

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.

05

370000mE

375000mE

380000mE

5335000mN

5330000mN

5325000mN

5320000mN

N

LYELL HIGHWAY

Rinadeena

Jack Creek

Sailor RIVER

TEEPOOKANA

KING

Open Creek

SWIFT

CREEK

EXPLORATION LICENCE BOUNDARY

0 5 Kilometres

5 cm

67006

Aberfoyle Resources Limited

EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

Location Code :

NORTH WEST TASMANIA

SWIFT CREEK E.L.26/86 (CRA-JV)

LOCATION PLAN

Scale : 1:50000

Date : February, 1989

Compiled : RJH

Drawn : JLR

Traced :

Checked :

Plate No. : SWC 1b

89-2918

3. EXPLORATION HISTORY

Evidence of alluvial sluicing can be seen along Sailor Jack Creek and its tributaries although no records of recoveries are available. Alluvial gold was also recorded at Flannigans Creek.

In modern times exploration has been limited to stream sediment, rock chip and some soil geochemistry as well as airborne and ground geophysics.

3.1 Cyprus (1971)

Stream sediment sampling in the Teepookana area with peak values of 34/42/122 ppm Cu/Pb/Zn. No Au analysis were carried out.

3.2 Electrolytic Zinc (1983-1985)

Stream sediment sampling southeast of the Teepookana Area testing Ordovician Limestone sequences for "Irish style" base metals. No anomalies were generated.

Grid based rock chip geochemical sampling and ground magnetics were conducted in the Rinadeena area to test if aeromagnetic highs were related to some form of mineralisation. The source of the magnetic anomalies was identified as a magnetic tuffaceous conglomerate within Silurian sediments. Anomalous

Au results of 0.4 ppm, 0.54 ppm and 1.1 ppm were obtained from bedrock samples of vein quartz. Additional rock chip and soil geochemical sampling failed to repeat these anomalies.

3.3 CRA Exploration (1986-1987)

Regional stream sediment sampling in which no significant anomalies were generated. A 1000 ppt BCL Au anomaly in Pine Cove Creek is thought to be related to Tertiary gravels and therefore of little significance.

4. REGIONAL GEOLOGY

The oldest rocks in the EL are Cambrian in age and appear as a volcano-sedimentary sequence dominated by siltstones, micaceous sandstone, graded greywacke, quartzite and siliceous conglomerate and outcrop extensively on the westernmost boundary of the EL.

Separated from these Cambrian units by a major NW-SE trending zone of sinistral shear zones are Cambro-Ordovician and younger rocks which comprise the northeastern half of the EL.

The oldest units of the Cambro-Ordovician sequence outcrop in the Mt. Strahan area and appear as siliceous pebble conglomerates. Conformably overlying these conglomerates is a unit of quartzites and micaceous sandstones which are interpreted as correlates of the Moina Sandstone. Faulted against these sandstones is a younger Ordovician sequence of grey-brown slates and siltstones grading into limestones to the south, correlates of the Gordon sub-group.

Conformably overlying the Gordon sub-group sediments are Siluro-Devonian rocks of the Eldon group comprising micaceous sandstones, with minor mudstone and granule conglomerate layers.

A north-south fault contact separates the Silurian and Devonian sediments which range in composition from fine quartz sandstones grading upwards to interbedded mudstones and sandstones.

The Ordovician to Devonian sequence has undergone tight folding around a NNW-SSE trending axis and locally bedding is overturned.

Tertiary sediments unconformably overly the Cambrian sequence to the south and are commonly represented by interbedded sandstone, siltstone, clay and conglomerate. In the headwaters of Pine Cove and Swift Creek dolerite boulder and cobble beds are present.

Quarternary alluvium appears in isolated areas throughout the EL.

5. EXPLORATION ACTIVITY 1988

5.1 Rinadeena

Introduction

Sampling by EZ in the Rinadeena area during 1984-85 obtained three anomalous bedrock samples of 0.4, 0.54 and 1.1 ppm Au from vein quartz in the approximate vicinity of an airborne magnetic high. Follow up sampling, involving further rock chip and limited stream sediment and soil sampling, failed to repeat the initial anomalies.

Exploration on the Coupon Prospect located immediately north of Rinadeena in EL 9/84 by Montroyal Mining N.L. has returned anomalous Au in both soil and rock chip samples with a maximum of 3.4 ppm and 21.0 ppm respectively. These anomalous zones appear to be related to a faulted contact between the Ordovician Rinadeena Mudstone and Cambro-Ordovician siliclastics of the Owen Conglomerate sequence.

Gridding followed by geological mapping, rock chip and soil sampling was conducted by Aberfoyle during July and August of 1988 over the southern extension of the Coupon Prospect Fault Structure.

Geology (refer plates SWC 4a and 4b)

The geology of the Rinadeena area consists of a sedimentary sequence of siliclastics and mudstones ranging from Cambro-Ordovician to Silurian in age.

The Cambro-Ordovician appears a two discrete conformable units.

The uppermost of the two is a white-grey, thick bedded, medium to very coarse grained quartz sandstone with a minor acid, volcanomict component. Compositionally in the range of Orthoquartzite to Protoquartzite (Pettijohn, 1957) it exhibits a moderately well sorted fabric of quartz, with minor plagioclase grains and rarer altered chert, siltstone and silicified felsic rhyolite clasts in a quartz, sericite, carbonate matrix. Also present in varying amounts are detrital muscovite (most common), tourmaline, leucoxene, chromite, biotite, rutile, monazite and zircon.

Although outcrop was poor the unit appears to strike approximately north-south with a moderate to steep dip to the east. Locallised stockworks of barren quartz veins are present throughout although in greater concentration in proximity to the contact with the Ordovician Rinadeena Mudstone.

The lower Cambro-Ordovician unit appears as a buff-coloured quartz rich granular conglomerate with a quartz sericite matrix (seen only in float).

The Ordovician Rinadeena Mudstone outcrops in the vicinity of Sailor Jack Creek and along the cuttings of the Abt Railway. This sequences consists of highly cleaved grey-brown interbeds of siltstone and shale with minor thin quartzite units. Measurements of slaty cleavage indicate a north-south strike with generally steep dips to the west.

Locallised stockworks of quartz and limonite appear throughout the unit as well as bedding conformable sheeted vein sets of predominantly quartz with minor oxides of iron.

Although the contact with Cambro-Ordovician sediments was not located, the change in dip direction from east to west and the concentration of quartz veining in both units suggests a faulted contact. The presence of Cambrian volcanics in the vicinity of the fault zone, which appear in the Coupon Prospect, were not noted, although outcrop was poor. Similar quartz veining and contortion of the mudstone units suggesting a faulted contact between the Cambro-Ordovician and the Rinadeena Mudstone has been noted at the head of King River Gorge (Corbett, Baillie et al, 1985).

Conformably overlying the Rinadeena Mudstone is a thick bedded sequence of quartzites, sandstones with minor siltstone and shale interbeds and have been interpreted as correlates of the Crotty Quartzite of the Siluro-Devonian Eldon Group.

The sandstones and quartzites of this unit are off-white to light brown in colour and consist of fine to coarse grained well-sorted sub-angular grains of quartz and minor feldspar with sericitic shale and impure chert lithoclasts. Minor traces of muscovite, leucoxene, zircon, tourmaline and rare apatite can be seen in thin section.

Minor quartz veinlets appear throughout the unit and are both concordant and discordant to bedding, which strikes north-south with a steep dip to the west.

Lingoid ripple marks are common in the sandstone beds as well as abundant bivalve casts.

Alteration

Little to no alteration occurs throughout both the Cambro Ordovician and Silurian quartzites other than mild sericite/kaolonite alteration to a few of the coarser lithic clasts and to the matrix associated with weak fracturing. Mild weathering has resulted in weak Fe-staining of argillaceous clasts and partial dissolution of leucoxene.

The Ordovician Rinadeena Mudstone exhibits moderate to strong pervasive oxidation with limonite being the dominant oxide present along with minor haematite.

Limonite staining of quartz veins may be the result of oxidation of iron sulphides although no fresh pyrite, or other sulphides, were detected.

Mineralisation

No mineralisation, other than a trace of disseminated pyrite in an outcrop of Rinadeena Mudstone, was detected throughout the entire sedimentary sequence.

Geochemistry (refer plates SWC 4c & SWC 5, 5a-f)

A total of 22 rock chips and 210 'C' horizon soil samples were taken from the Rinadeena area. All samples were assayed for Cu, Pb, Zn, Ag, Au, As and Sb (Appendix A1-A2).

Rock Chips

Results from rock chip samples were generally disappointing with the exception of samples taken from the northern end of the grid where six samples returned anomalous values for either As, Au, Pb or Zn. Sample 431226, taken from the Rinadeena Mudstone close to the Cambro-Ordovician/Ordovician contact, returned the maximum values of 290/520/50/0.018 ppm for Pb/Zn/As/Au.

Soils

As with the rock chips, geochemical anomalies generated from 'C' horizon soil sampling were low-order and confined to one or two lines or a few samples.

A weak, co-incident Au/As/Cu anomaly (max. 0.010/68/60 ppm) exists on Line 31800N in the proximity of the contact between the Rinadeena Mudstone and Moina Sandstone.

The broad north-south trending Cu/Pb/Zn geochemical highs appear to correlate with the Rinadeena Mudstone position and are interpreted as formational, especially in light of high Cu/Pb/Zn results for rock chips taken from outcrop of the mudstone.

Other 'bulls-eye' or spot anomalies do not appear co-incident between individual elements although a weak Au anomaly (max. 0.016 ppm) on line 30800N may be related to a stronger Cu/Pb/Zn anomaly further down slope on the same line.

5.2 Swift Creek

During the 1984/85 field season, a number of -80 mesh stream sediment samples were taken from Swift Creek and its tributaries by EZ in search of "Irish Style" base metal mineralisation, within the Gordon Limestone (refer plates SWC 10a & 10b).

Pulps from these 55 samples were reassayed for Au, Ag and As by Aberfoyle in 1988.

Geochemistry (refer plates SWC 11a & 11b)

Results from the reanalysis were disappointing with only 8 of the samples being above detection for Au, the maximum of which was 0.014 ppm.

6. CONCLUSIONS

1. Weakly anomalous Au/As zones in the Rinadeena area appear in proximity to the contact between the Ordovician Rinadeena Mudstone and the Cambro-Ordovician Moina Sandstone, although this relationship is at best tenuous.

2. Anomalous Cu/Pb/Zn zones trend north-south and appear related to the Rinadeena Mudstone unit and are thus interpreted as purely formational.

3. Structural measurements taken in the proximity of the above mentioned contact suggest it to be faulted although the contact itself has not been seen in outcrop. Substantial amounts of float quartz and contorted quartz veins within both units close to the contact tends to support a faulted relationship.

4. The weak stream sediment anomalies ranging from 0.008 to 0.014 ppm Au, taken from the Swift Creek area, are in most cases randomly distributed throughout the total drainage basin, and as such are point source or spot anomalies of unknown origin.

5. Anomalous rock chip geochemistry in the northern end of the grid coincides with the Au/As soil anomaly on Line 31800N and may reflect some similarity to the Coupon Prospect to the north, which also exhibits strong Au/As anomalies.

7. RECOMMENDATIONS

1. The soil and rock chip geochemical anomalies in the northern end of the grid be followed up by further bedrock sampling.

2. Resample the anomalous gold zones delineated by EZ in their bedrock sampling program and determine their significance especially in relation to the Coupon Prospect.

3. The point source stream sediment Au anomalies in the Swift Creek area, although considered of low-order, may warrant further investigation at some later stage.

4. Further detailed mapping be undertaken in the northern end of the grid to understand the geological controls to the mineralisation and attempt to locate the contact between the Rinadeena Mudstone and the Moina Sandstone.

8. REFERENCES

Baillie, P.W., Corbett, K.D. et al (1985), Geological Atlas 1:50,000 Series Sheet 57 (7913N) - Strahan Dept. Mines, Tasmania.

Funnell, F.R. (1987), Swift Creek EL 26/86, Progress Report on Exploration for the 12 months to 10th December, 1987. CRA Exploration Pty. Ltd. - Company Report.

Hopton, D.L. & Mathison, I.J. (1985), Part Exploration Licence 31/83, "Macquarie", Rinadeena Area Report on Work completed 2nd October, 1984 to 30th June, 1985. EZ Company of Aust. Ltd. - Company Report.

Mathison, I.J. (1984), Part Exploration Licence No. 31/83, "Macquarie", Swift Creek Area Progress Report on Exploration Activity 1st October, 1983 to 30th March, 1984. EZ Company of Aust. Ltd. - Company Report.

Pettijohn, F.J. (1987), Sedimentary Rocks. Second Ed. N.Y. Harper & Bros. 718 pp.

APPENDIX A1

ASSAY RESULTS - SOILS

ANALABS

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

678022

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	1 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431001	5	<5	20	<0.5	<0.008	<1	4		
2	431002	<5	<5	15	<0.5	<0.008	<1	3		
3	431003	<5	<5	15	<0.5	<0.008	<1	<3		
4	431004	<5	30	20	<0.5	<0.008	6	<3		
5	431005	<5	10	35	<0.5	<0.008	1	<3		
6	431006	<5	10	25	<0.5	<0.008	<1	<3		
7	431007	10	15	35	<0.5	<0.008	6	<3		
8	431008	15	15	45	<0.5	<0.008	22	<3		
9	431009	<5	25	75	<0.5	<0.008	<1	<3		
10	431010	35	5	25	<0.5	<0.008	20	<3		
11	431011	<5	<5	15	<0.5	<0.008	1	<3		
12	431012	<5	<5	20	<0.5	<0.008	<1	3		
13	431013	<5	<5	5	<0.5	<0.008	<1	<3		
14	431014	<5	<5	10	<0.5	<0.008	<1	6		
15	431015	50	30	70	<0.5	<0.008	28	<3		
16	431016	5	<5	20	<0.5	<0.008	1	<3		
17	431017	<5	<5	10	<0.5	<0.008	<1	<3		
18	431018	<5	<5	10	<0.5	<0.008	<1	<3		
19	431019	<5	<5	10	<0.5	<0.008	<1	<3		
20	431020	<5	<5	15	<0.5	<0.008	<1	<3		
21	431021	<5	<5	10	<0.5	<0.008	<1	3		
22	431022	<5	<5	25	<0.5	<0.008	<1	<3		
23	431023	<5	<5	15	<0.5	<0.008	<1	<3		
24	431024	<5	5	20	<0.5	<0.008	2	<3		
25	431025	<5	10	15	<0.5	<0.008	<1	<3		

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

AUTHORISED OFFICER

ANALABS

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

678023

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	2 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431026	<5	<5	10	<0.5	<0.008	<1	4		
2	431027	15	<5	75	<0.5	<0.008	3	<3		
3	431028	<5	<5	20	<0.5	<0.008	5	3		
4	431029	<5	10	45	<0.5	<0.008	1	<3		
5	431030	5	30	70	<0.5	<0.008	1	<3		
6	431031	5	25	90	<0.5	<0.008	1	<3		
7	431032	60	15	60	<0.5	<0.008	68	<3		
8	431033	20	<5	25	<0.5	<0.008	20	<3		
9	431034	<5	<5	15	<0.5	0.010	1	<3		
10	431035	5	5	35	<0.5	<0.008	3	<3		
11	431036	5	15	30	<0.5	<0.008	3	<3		
12	431037	<5	10	20	<0.5	<0.008	1	<3		
13	431038	<5	<5	10	<0.5	<0.008	<1	<3		
14	431039	<5	<5	10	<0.5	<0.008	<1	<3		
15	431040	<5	<5	5	<0.5	<0.008	<1	3		
16	431041	<5	<5	5	<0.5	<0.008	<1	4		
17	431042	<5	<5	5	<0.5	<0.008	<1	<3		
18	431043	<5	<5	15	<0.5	<0.008	<1	<3		
19	431044	<5	<5	10	<0.5	<0.008	<1	<3		
20	431045	<5	10	20	<0.5	<0.008	<1	<3		
21	431046	<5	<5	15	<0.5	<0.008	<1	<3		
22	431047	<5	<5	15	<0.5	<0.008	<1	<3		
23	431048	<5	<5	10	<0.5	<0.008	<1	<3		
24	431049	5	<5	30	<0.5	<0.008	8	<3		
25	431050	25	20	80	<0.5	<0.008	16	<3		

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

AUTHORISED OFFICER

ANALABS

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

678024

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	3 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431051	5	<5	45	<0.5	<0.008	4	<3		
2	431052	25	25	190	<0.5	<0.008	3	<3		
3	431053	5	20	120	<0.5	<0.008	14	<3		
4	431054	<5	<5	5	<0.5	<0.008	<1	<3		
5	431055	<5	<5	5	<0.5	<0.008	<1	<3		
6	431056	<5	<5	15	<0.5	<0.008	<1	<3		
7	431057	<5	<5	30	<0.5	<0.008	<1	<3		
8	431058	<5	<5	5	<0.5	<0.008	<1	<3		
9	431059	<5	5	5	<0.5	<0.008	<1	6		
10	431060	<5	<5	<5	<0.5	<0.008	<1	<3		
11	431061	<5	<5	<5	<0.5	<0.008	<1	<3		
12	431062	<5	<5	5	<0.5	<0.008	<1	4		
13	431063	<5	<5	5	<0.5	<0.008	<1	4		
14	431064	<5	5	20	<0.5	<0.008	<1	<3		
15	431065	<5	<5	15	<0.5	<0.008	<1	<3		
16	431066	<5	<5	15	<0.5	<0.008	<1	<3		
17	431067	<5	<5	10	<0.5	<0.008	<1	<3		
18	431068	<5	<5	5	<0.5	<0.008	<1	<3		
19	431069	<5	<5	10	<0.5	<0.008	<1	<3		
20	431070	<5	<5	15	<0.5	<0.008	<1	4		
21	431071	5	25	25	<0.5	<0.008	9	<3		
22	431072	20	20	40	<0.5	<0.008	6	<3		
23	431073	25	5	115	<0.5	<0.008	13	<3		
24	431074	<5	<5	5	<0.5	<0.008	<1	<3		
25	431075	<5	<5	10	<0.5	<0.008	<1	<3		

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

AUTHORISED OFFICER

ANALABS

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

678025

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	4 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431076	<5	<5	25	<0.5	<0.008	7	<3		
2	431077	160	20	95	<0.5	<0.008	9	5		
3	431078	<5	<5	5	<0.5	<0.008	<1	4		
4	431079	<5	<5	5	<0.5	<0.008	<1	5		
5	431080	<5	<5	5	<0.5	0.009	<1	<3		
6	431081	<5	<5	<5	<0.5	0.008	<1	<3		
7	431082	<5	<5	5	<0.5	<0.008	<1	<3		
8	431083	<5	<5	5	<0.5	<0.008	<1	4		
9	431084	<5	<5	5	<0.5	0.008	<1	<3		
10	431085	<5	<5	15	<0.5	<0.008	<1	<3		
11	431086	<5	<5	10	<0.5	<0.008	<1	3		
12	431087	<5	<5	10	<0.5	<0.008	<1	4		
13	431088	<5	<5	10	<0.5	0.010	<1	3		
14	431089	<5	<5	10	<0.5	<0.008	<1	<3		
15	431090	<5	<5	10	<0.5	<0.008	<1	<3		
16	431091	<5	<5	10	<0.5	<0.008	<1	4		
17	431092	<5	<5	10	<0.5	0.009	<1	<3		
18	431093	15	10	25	<0.5	<0.008	7	<3		
19	431094	25	15	70	<0.5	<0.008	8	<3		
20	431095	15	15	90	<0.5	<0.008	8	<3		
21	431096	40	30	125	<0.5	0.008	10	<3		
22	431097	<5	<5	5	<0.5	<0.008	<1	3		
23	431098	10	<5	20	<0.5	<0.008	3	5		
24	431099	20	20	100	<0.5	<0.008	8	<3		
25	431100	<5	<5	<5	<0.5	<0.008	<1	<3		

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

AUTHORISED OFFICER

ANALABS

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

678026

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	5 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431101	<5	<5	<5	<0.5	<0.008	<1	<3		
2	431102	<5	30	<5	<0.5	0.016	<1	<3		
3	431103	<5	<5	<5	<0.5	0.010	<1	<3		
4	431104	<5	<5	<5	<0.5	0.012	<1	4		
5	431105	<5	<5	<5	<0.5	<0.008	<1	<3		
6	431106	<5	<5	10	<0.5	<0.008	<1	3		
7	431107	<5	<5	5	<0.5	0.008	<1	<3		
8	431108	<5	<5	5	<0.5	<0.008	<1	<3		
9	431109	<5	15	15	<0.5	<0.008	<1	<3		
10	431110	<5	10	<5	<0.5	<0.008	<1	3		
11	431111	<5	<5	5	<0.5	<0.008	<1	<3		
12	431112	<5	<5	15	<0.5	<0.008	1	<3		
13	431113	<5	<5	10	<0.5	0.009	1	<3		
14	431114	<5	<5	<5	<0.5	<0.008	<1	<3		
15	431115	15	10	50	<0.5	<0.008	4	<3		
16	431116	30	10	155	<0.5	<0.008	7	<3		
17	431117	5	<5	25	<0.5	<0.008	2	4		
18	431118	20	15	85	<0.5	0.011	6	<3		
19	431119	45	35	130	<0.5	0.010	8	<3		
20	431120	<5	10	5	<0.5	<0.008	<1	<3		
21	431121	<5	5	<5	<0.5	<0.008	1	3		
22	431122	<5	15	10	<0.5	<0.008	1	<3		
23	431123	10	25	10	<0.5	<0.008	12	<3		
24	431124	<5	5	5	<0.5	<0.008	5	5		
25	431125	<5	<5	<5	<0.5	<0.008	<1	6		

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

AUTHORISED OFFICER

ANALABS

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

678027

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	6 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431126	<5	<5	5	<0.5	<0.008	<1	6		
2	431127	<5	<5	<5	<0.5	<0.008	<1	4		
3	431128	<5	<5	<5	<0.5	<0.008	<1	<3		
4	431129	<5	<5	5	<0.5	<0.008	<1	<3		
5	431130	<5	35	10	<0.5	<0.008	<1	<3		
6	431131	<5	10	15	<0.5	<0.008	9	5		
7	431132	<5	<5	<5	<0.5	<0.008	<1	3		
8	431133	<5	10	10	<0.5	<0.008	<1	<3		
9	431134	<5	10	10	<0.5	<0.008	1	<3		
10	431135	20	35	25	<0.5	<0.008	7	<3		
11	431136	<5	20	10	<0.5	0.012	1	<3		
12	431137	25	20	140	<0.5	0.008	8	<3		
13	431138	<5	15	15	<0.5	<0.008	3	<3		
14	431139	5	20	50	<0.5	<0.008	3	<3		
15	431140	65	40	180	<0.5	0.014	9	<3		
16	431141	<5	10	30	<0.5	<0.008	10	<3		
17	431142	<5	10	45	<0.5	<0.008	1	<3		
18	431143	<5	20	10	<0.5	<0.008	20	<3		
19	431144	<5	<5	<5	<0.5	<0.008	1	<3		
20	431145	<5	<5	<5	<0.5	<0.008	<1	<3		
21	431146	<5	<5	<5	<0.5	<0.008	1	<3		
22	431147	<5	<5	<5	<0.5	<0.008	<1	3		
23	431148	<5	<5	10	<0.5	<0.008	<1	<3		
24	431149	<5	30	5	<0.5	<0.008	<1	<3		
25	431150	<5	10	10	<0.5	<0.008	<1	<3		

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

AUTHORISED OFFICER

ANALABS

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

678028

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	7 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431151	<5	<5	5	<0.5	<0.008	<1	6		
2	431152	<5	15	20	<0.5	0.008	2	<3		
3	431153	<5	<5	10	<0.5	<0.008	<1	<3		
4	431154	<5	15	15	<0.5	0.008	1	<3		
5	431155	10	30	45	<0.5	<0.008	6	<3		
6	431156	20	50	65	<0.5	<0.008	9	<3		
7	431157	10	35	50	<0.5	<0.008	7	<3		
8	431158	<5	20	30	<0.5	<0.008	10	<3		
9	431159	<5	25	20	<0.5	<0.008	14	<3		
10	431160	<5	45	50	<0.5	<0.008	5	<3		
11	431161	<5	15	5	<0.5	<0.008	<1	<3		
12	431162	<5	5	5	<0.5	<0.008	<1	3		
13	431163	<5	<5	5	<0.5	<0.008	<1	6		
14	431164	<5	5	<5	<0.5	<0.008	<1	3		
15	431165	<5	10	<5	<0.5	<0.008	<1	<3		
16	431166	<5	5	<5	<0.5	0.014	<1	<3		
17	431167	<5	5	<5	<0.5	<0.008	<1	<3		
18	431168	<5	10	<5	<0.5	0.016	<1	<3		
19	431169	<5	10	5	<0.5	0.008	<1	3		
20	431170	<5	5	5	<0.5	<0.008	<1	3		
21	431171	<5	15	15	<0.5	<0.008	<1	5		
22	431172	<5	10	5	<0.5	<0.008	<1	<3		
23	431173	<5	10	10	<0.5	<0.008	<1	<3		
24	431174	<5	10	10	<0.5	<0.008	<1	3		
25	431175	<5	15	15	<0.5	<0.008	2	<3		

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

AUTHORISED OFFICER

ANALABS

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

678029

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	8 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431176	25	30	100	<0.5	<0.008	2	<3		
2	431177	10	15	45	<0.5	<0.008	4	<3		
3	431178	<5	5	5	<0.5	<0.008	<1	3		
4	431179	<5	<5	<5	<0.5	0.014	<1	<3		
5	431180	<5	<5	<5	<0.5	<0.008	<1	<3		
6	431181	<5	<5	<5	<0.5	<0.008	<1	<3		
7	431182	<5	<5	5	<0.5	<0.008	2	<3		
8	431183	<5	<5	5	<0.5	<0.008	<1	3		
9	431184	<5	<5	<5	<0.5	<0.008	<1	<3		
10	431185	<5	<5	10	<0.5	<0.008	1	<3		
11	431186	<5	<5	10	<0.5	<0.008	<1	<3		
12	431187	<5	<5	10	<0.5	<0.008	3	<3		
13	431188	<5	10	5	<0.5	<0.008	<1	<3		
14	431189	<5	<5	5	<0.5	<0.008	2	<3		
15	431190	<5	5	10	<0.5	0.011	<1	<3		
16	431191	<5	10	10	<0.5	<0.008	<1	9		
17	431192	<5	<5	10	<0.5	<0.008	<1	<3		
18	431193	<5	<5	10	<0.5	<0.008	<1	<3		
19	431194	<5	20	40	<0.5	<0.008	1	<3		
20	431195	<5	10	10	<0.5	0.008	<1	<3		
21	431196	<5	10	35	<0.5	<0.008	2	<3		
22	431197	25	5	100	<0.5	<0.008	4	<3		
23	431198	30	35	95	<0.5	<0.008	6	<3		
24	431199	<5	5	10	<0.5	<0.008	<1	<3		
25	431200	<5	15	10	<0.5	<0.008	1	<3		

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

AUTHORISED OFFICER

ANALABS

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

678030

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05682	20/09/88	4489	9 OF 9

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431201	<5	20	20	<0.5	0.010	5	<3		
2	431202	<5	5	5	<0.5	<0.008	<1	<3		
3	431203	<5	<5	5	<0.5	<0.008	<1	<3		
4	431204	<5	<5	5	<0.5	<0.008	1	<3		
5	431205	<5	5	10	<0.5	<0.008	1	<3		
6	431206	<5	5	10	<0.5	<0.008	<1	<3		
7	431207	<5	<5	<5	<0.5	<0.008	1	<3		
8	431208	<5	10	<5	<0.5	0.010	1	<3		
9	431209	<5	<5	10	<0.5	<0.008	<1	<3		
10	431210	<5	<5	<5	<0.5	<0.008	<1	<3		
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	1	3		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	114	401		

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

AUTHORISED OFFICER

APPENDIX A2

ASSAY RESULTS - ROCK CHIPS

ANALABS

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

678032

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05651	02/09/88	4445	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431211	<5	10	35	<0.5	<0.008	1	<3		
2	431212	<5	5	30	<0.5	<0.008	<1	4		
3	431213	<5	<5	20	<0.5	0.010	<1	<3		
4	431214	<5	<5	20	<0.5	<0.008	<1	7		
5	431215	<5	10	30	<0.5	<0.008	1	<3		
6	431216	<5	5	20	<0.5	<0.008	6	<3		
7	431217	20	10	20	<0.5	<0.008	20	<3		
8	431218	80	25	55	<0.5	<0.008	18	<3		
9	431219	100	5	45	<0.5	<0.008	1	<3		
10	431220	10	20	40	<0.5	<0.008	<1	<3		
11	431221	<5	10	15	<0.5	<0.008	2	<3		
12	431222	<5	<5	<5	<0.5	<0.008	<1	<3		
13	431223	10	10	20	<0.5	<0.008	6	<3		
14	431224	<5	<5	10	<0.5	0.011	<1	<3		
15	431225	25	40	90	<0.5	<0.008	45	<3		
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	1	3		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	114	401		

Results in ppm unless otherwise specified
- Element present: but concentration too low to measure
- Element concentration is below detection limit
- Element not determined

AUTHORISED OFFICER

ANALABS

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

678033

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05688	15/09/88	4812	1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	As	Sb		
1	431226	40	290	520	<0.5	0.018	50	IS		
2	431227	<5	10	30	<0.5	<0.008	3	5		
3	431228	25	150	300	<0.5	<0.008	34	<3		
4	431229	<5	85	195	<0.5	0.009	26	<3		
5	431230	<5	60	65	<0.5	<0.008	5	<3		
6	431231	<5	30	105	<0.5	<0.008	9	<3		
7	431232	10	50	135	<0.5	<0.008	87	<3		
8	431233	5	55	135	0.5	<0.008	15	6		
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	1	3		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	114	401		

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

AUTHORISED OFFICER

APPENDIX A3

ASSAY RESULTS - STREAM SEDIMENTS

ANALABS

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

678035

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05587	18/07/88	3868	1 OF 3

TUBE No.	SAMPLE No.	As	Ag	Au						
1	59253	4	0.5	<0.008						
2	59254	4	1.0	0.010						
3	59255	5	<0.5	0.013						
4	59256	3	<0.5	<0.008						
5	59257	2	<0.5	<0.008						
6	59258	3	<0.5	<0.008						
7	59259	9	0.5	<0.008						
8	59708	1	<0.5	0.014						
9	59710	2	<0.5	<0.008						
10	59711	2	<0.5	<0.008						
11	59713	2	<0.5	<0.008						
12	59715	3	<0.5	<0.008						
13	59716	5	<0.5	<0.008						
14	59912	7	<0.5	<0.008						
15	59914	6	<0.5	<0.008						
16	59916	10	<0.5	<0.008						
17	59917	6	<0.5	<0.008						
18	59918	6	<0.5	0.011						
19	60005	8	<0.5	0.010						
20	60006	4	<0.5	0.010						
21	60048	1	0.5	<0.008						
22	60051	<1	0.5	<0.008						
23	60053	3	0.5	0.008						
24	60055	1	<0.5	0.009						
25	60057	1	<0.5	<0.008						

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

AUTHORISED OFFICER

ANALABS

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

678036

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05587	18/07/88	3868	2 OF 3

TUBE No.	SAMPLE No.	As	Ag	Au						
1	60059	1	0.5	<0.008						
2	60060	1	0.5	<0.008						
3	60061	1	<0.5	<0.008						
4	60101	9	<0.5	<0.008						
5	60102	8	<0.5	<0.008						
6	60103	9	0.5	<0.008						
7	60104	6	<0.5	<0.008						
8	60105	2	0.5	<0.008						
9	60106	6	0.5	<0.008						
10	60107	7	0.5	<0.008						
11	60108	3	<0.5	<0.008						
12	60109	9	0.5	<0.008						
13	60110	7	0.5	<0.008						
14	60112	5	0.5	<0.008						
15	60114	7	<0.5	<0.008						
16	60116	12	<0.5	<0.008						
17	60117	7	0.5	<0.008						
18	60118	4	<0.5	<0.008						
19	60120	7	<0.5	<0.008						
20	60209	14	<0.5	<0.008						
21	60210	3	<0.5	<0.008						
22	60212	2	<0.5	<0.008						
23	60213	2	<0.5	<0.008						
24	60214	2	<0.5	<0.008						
25	60225	3	<0.5	<0.008						

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

AUTHORISED OFFICER

ANALABS

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

678037

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	23.3.08.05587	18/07/88	3868	3 OF 3

TUBE No.	SAMPLE No.	As	Ag	Au
1	60226	5	<0.5	<0.008
2	60227	3	<0.5	<0.008
3	60228	2	<0.5	<0.008
4	60229	1	<0.5	<0.008
5	60230	4	<0.5	<0.008
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23	DETECTION	1	0.5	0.008
24	UNITS	PPM	PPM	PPM
25	METHOD	114	101	309

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

AUTHORISED OFFICER

APPENDIX B

PETROLOGICAL REPORTS - CENTRAL MINERALOGICAL SERVICES

678039

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
Exploration Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

14th September, 1988

REPORT 88/8/10

YOUR REFERENCE:	Letter dated 12.8.1988
DATE RECEIVED:	15th August, 1988
SAMPLE NOS.:	4 Samples
SUBMITTED BY:	R.J. Henham
WORK REQUESTED:	Petrology

H.W. Fander, M.Sc.

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

REPORT CMS 88/8/10

Four rock chip samples from the Swift Creek/Rinadeena area south of Queenstown were received for petrological examination. Representative thin sections were prepared and examined together with respective offcuts. Attached descriptions summarise the microscopic data and include comparative comments.

Summary

Samples 431214, 431215 and 431221 are texturally and compositionally similar fine-grained quartzose sandstones, ranging from proto- to orthoquartzitic. These rocks are weakly feldspathic, with lithoclastic components dominated by sericitic pelitic sedimentary types. These three rocks exhibit a prominent accessory detrital heavy mineral assemblage, and exhibit a sericitic quartz cement.

Sample 431222 represents a coarser-grained, weakly carbonaceous quartzose sandstone. This rock is relatively incipiently stressed, is weakly acid-volcanomict and exhibits a marked relative abundance of low-grade regional metasediment-derived lithoclasts. These are largely siliceous types, metaquartzite and weakly micaceous metaquartzite and, in this sense, the rock, although strictly a protoquartzite, verges on orthoquartzitic composition.

D. Cowan, B. Sc.

678041

SAMPLE NO.: 431214 (T.S. 60530)

CLASSIFICATION: **Sericitic Orthoquartzite**

COMPOSITION: Framework of subangular to subround quartz grains with relatively quite minor (< 5 %) sericitic shale and impure (sericitic) chert clasts. Overgrowth quartz and intergranular sericitic microcrystalline quartz cement. Sporadic micro-fractures with films of microcrystalline quartz and partly degraded (kaolinised) sericite.

FABRIC: Well sorted, massive to incipiently banded fine sandstone. Stressed, with sheared/semi-granulated cherty quartz veinlets.

ACCESSORIES: Minor late unstressed discontinuous quartz veinlets. Conspicuous detrital heavy mineral grains (leucoxene, subordinate zircon and tourmaline, rare apatite). Minor traces of detritial muscovite.

INTERPRETATION/ COMMENTS: A sericitic/weakly micaceous fine-grained orthoquartzite with a prominent leucoxene-rich, evenly disseminated to incipiently banded detrital heavy mineral assemblage. Exhibits "diagenetic", weakly argillaceous cherty quartz veinlets, stress effects, and minor post-stress discontinuous quartz veinlets.

SAMPLE NO.: 431215 (T.S. 60531)

CLASSIFICATION: **Sericitic Protoquartzite**

COMPOSITION: Framework of silt- to fine sand-sized, subangular to subround quartz grains, subordinate sericitic pelite clasts, minor sericitic impure chert clasts; conspicuous detrital heavy mineral grains (leucoxene, subordinate zircon, tourmaline, minor apatite). Overgrowth quartz/intergranular sericitic microgranular quartz cement.

FABRIC: Moderately to well sorted silty fine sandstone; massive to weakly bedded. Very incipiently stressed.

ACCESSORIES: Minor detrital muscovite, minor traces chloritic/degraded detrital biotite flakes. Minor traces of detrital rutile, rare sphene, minor trace detrital sericitic-kaolinitic poorly determinate feldspar.

INTERPRETATION/ COMMENTS: Close affinities with 431214, slightly quartz-deficient and relatively micaceous and lithoclastic in comparison; slightly relatively micaceous and only incipiently stressed. Exhibits mild weathering effects, with weak Fe-staining of argillaceous components and partial dissolution of detrital leucoxene.

SAMPLE NO.: 431221 (T.S. 60532) 2.

CLASSIFICATION: **Sericitic Protoquartzite**

COMPOSITION: Framework of fine sand-sized, subangular to subround quartz grains, subordinate sericitic pelite and minor low-grade regional metapelite (quartz-sericite phyllite/slate) clasts, minor sericitic impure chert clasts, muscovite flakes, and degraded (kaolinised/Fe-stained) feldspar grains. Overgrowth/intergranular sericitic quartz cement.

FABRIC: Well sorted, slightly silty fine sandstone; incipiently bedded and incipiently sheared.

ACCESSORIES: Detrital leucoxene, subordinate zircon, tourmaline, rare apatite. Traces detrital partly degraded/ferruginised biotite, rutile, monazite. Minor traces ferruginised carbonate as ultrafine rhombs in the cement. Rare detrital chromite.

INTERPRETATION/ COMMENTS: Close affinities with 431214 and particularly 431215; relatively feldspathic, but with finer detail obscured by partial weathering and ferruginisation effects. Possibly includes sparse degraded/ferruginised felsite clasts (i.e. incipiently acid volcanomict).

SAMPLE NO.: 431222 (T.S. 60533)

CLASSIFICATION: **Carbonaceous Protoquartzite**

COMPOSITION: Framework of angular to subround, fine to medium sand-sized quartz grains, subordinate low-grade regional metaquartzite and quartz-muscovite phyllite clasts, minor clasts of chert and kaolinitic impure chert/cherty argillite, silicified felsite, and kaolinitic, poorly determinate feldspar grains. Intergranular fine-grained quartz cement with a little semi-sericitic white mica and overgrowth quartz, minor intergranular clots and spongy films of carbonaceous matter.

FABRIC: Weakly bedded, moderately (trend bimodally) sorted fine to medium sandstone. Incipiently stressed.

ACCESSORIES: Detrital muscovite flakes, traces detrital leucoxene, zircon, tourmaline, minor traces rutile and apatite.

INTERPRETATION/ COMMENTS: A relatively mature protoquartzitic/trend orthoquartzitic sandstone in comparison with 431214 and particularly 431215 and 431221. Exhibits a marked relative abundance of "basement"-derived metasediment clasts. Weakly acid-volcanomict, with sparse silicified felsitic "rhyolite" clasts and rare, mildly abraded volcanic (embayed) quartz grains. Relatively siliceous/weakly carbonaceous cement.

678043

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
Exploration Geologist
Aberfoyle Resources Ltd.
Exploration Division
P.O. Box 952
BURNIE / TAS. 7320

26th October, 1988

REPORT CMS 88/8/29

YOUR REFERENCE:	Letter dated 30.8.1988
DATE RECEIVED:	31st August, 1988
SAMPLE NOS.:	431227, 431231
SUBMITTED BY:	R.J. Henham
WORK REQUESTED:	Petrology

H.W. Fander, M. Sc.

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

REPORT CMS 88/8/29

Two rock chip samples, labelled 431227 and 431231, were received for petrological examination. Representative thin-sections were prepared, examined together with respective offcuts, and are detailed in the attached descriptions.

Summary

Sample 431227 represents a mature, medium- to coarse-grained orthoquartzite with conspicuous low-grade regional metasedimentary clasts, supplementing quartz grains and (minor vein-type) composites.

Sample 431231 represents a finer-grained, weakly sericite-altered quartzite with close affinities to a previously described sandstone (sample 431215, CMS 88/8/10) from this area.

Both rocks are stressed. Both are devoid of tuffaceous features, although 431227 includes a few clasts of silicified felsitic acid volcanic and is mildly acid volcanomict. Stress effects appear to reflect tectonic (fault?) rather than strictly regional metamorphic effects.

D. Cowan, B. Sc.

678045

SAMPLE NO.: 431227 (T.S. 60662)

CLASSIFICATION: **Orthoquartzite**

COMPOSITION: Framework of angular to subangular/minor subround quartz grains, subordinate vein-type quartz composites, regional metaquartzite/ weakly micaceous metaquartzite and tourmaline metaquartzite clasts, minor quartzose metasiltstone, chert, impure (kaolinitic) chert, and sparse silicified felsite clasts. Intergranular fine-grained quartz cement with sparse microscale intergranular films of kaolin.

FABRIC: A poorly/trend bimodally sorted fine to coarse sandstone; weakly bedded, moderately stressed and weakly microfractured.

ACCESSORIES: Detrital tourmaline, leucoxene, zircon. Minor "authigenic" clots of cloudy microcrystalline anatase.

INTERPRETATION/ COMMENTS: A mature quartzose sandstone with lithoclasts totally dominated by siliceous sedimentary and regionally metasedimentary types. Very weakly acid volcanomict, with thinly disseminated clasts of devitrified/silicified obsidian. No primary tuffaceous features.

SAMPLE NO.: 431231 (T.S. 60663)

CLASSIFICATION: **Sericitic Quartzite**

COMPOSITION: Framework of silt- to fine sand-sized, angular to subround quartz grains, relatively minor sericitic pelite and impure chert/ cherty argillite clasts, minor plagioclase (oligoclase-albite) grains, muscovite and chloritic biotite flakes. Overgrowth quartz and intergranular fine to microcrystalline quartz/semi-sericitic white mica cement. Minor sericitic microfractures.

FABRIC: A well-sorted, slightly silty fine sandstone, weakly bedded and moderately stressed/incipiently recrystallised-directed.

ACCESSORIES: Detrital tourmaline, leucoxene, zircons, trace apatite, partly degraded/kaolinitic orthoclase, chromite. Minor traces of carbonaceous matter.

INTERPRETATION/ COMMENTS: A fine-grained protoquartzite, verging compositionally on an orthoquartzite. This rock reflects mild sericitic alteration, partly fracture-controlled, and a weak "regional" (?fault-related) overprint. No tuffaceous or volcanomict features.

APPENDIX C

TABLE OF GEOLOGICAL ABBREVIATIONS

Abundant	abn
Adularia	Adl
Agglomerate	agg
Albite	Ab
Alkali feldspar	Afd
Altered	alt
Amphibole	Amb
Amygdaloidal	amg
Andesite	A
Angular	ang
Aplite	Ap
Approximate	apx
Arcuate	ar
Arenaceous	arn
Argillaceous	arg
Argillite	Arg
Arkose	Ak
Arkosic	ak
Arsenopyrite	Ap
Ash volcaniclastic	av
Autobrecciated	avb
Average	ave
Banded	bnd
Barite	Ba
Basalt	B
Bedded	bd
Black	bk
Black shale	Bsh
Blue	bl
Boulder	bld
Breccia	b
Breccia volcaniclastic	bv
Bright	brt
Brown	br
Calcareous	cc
Calcite	Cc
Carbonaceous	g
Carbonate	Co
Cavernous	cav
Chalcopyrite	Cp
Chert	Ch
Chlorite	Cl
Chromite	Cr
Chromitiferous	cr
Clay	cy
Coarse	c
Coarse grained	cg

Common	com
Conglomerate	Cg
Conglomeratic	cg
Crystal	x
Crystal volcaniclastic	xv
Dacite	D
Dark	dk
Dense	dns
Devitrification	dv
Diorite	Di
Disseminated	dis
Dolerite	Do
Dolomite	Dm
Dyke	dy
Elongated	el
Emphasised	emp
Epiclastic (adj.)	e
Epiclastic (noun)	E
Epidote	Ep
Euhedral	euh
Eutaxitic	eux
Fabric	fab
Fault	F
Fault zone	FZ
Feldspar	Fd
Feldspar phyric	fp
Felspathic	fel
Ferruginous	fer
Fibrous	fb
Fine	f
Fine grained	fg
Fissile	fis
Flowbanded	fbn
Fragments	fr
Fuchsite	Fu
Galena	Gn
Glass	Gl
Glassy	gl
Granular	glr
Graphite	Gt
Graphitic	gt
Green	gn
Grey	gy
Greywacke	Gw
Haematite	Hmt
Hornblende	Hb
Ignimbrite	Ig
Illite	Ill
Interbedded	ibd
Intercalated	icl
Intrusive	int
Jurassic	Ju
K-Feldspar	Kfd
Khaki	kh
Laminated	lm
Lapilli volcaniclastic	lv

Lava breccia	lb
Leached	lch
Limonitic	Lim
Light	lgt
Lithic	lh
Magnetite	Mt
Massive	mas
Matrix	mtx
Matrix dominated	md
Medium	med
Medium grained	mg
Mica	Mic
Micaceous	mic
Minor	mnr
Mixed	mxd
Mottled	mtl
Mudstone	Mst
Nodule	nd
Off white	ow
Olivine	Ol
Orange	or
Ordovician	O
Oxidised	ox
Patchy	pat
Peperitic	pep
Perlitic	prl
Pervasive	per
Phenocrysts	phn
Phyllite	phyl
Picrite	Pic
Pillow lava	pl
Pink	pk
Polymict	Y
Porphyritic	por
Pumice	Pu
Pumiceous	pu
Purple	pp
Pyrite	Py
Pyritic	py
Pyroxene	Px
Quartz	Q
Quartzite	Qtz
Quellite	Qll
Questionable	?
Recrystallised	rx
Red	rd
Rehealed	rhd
Reworked	rw
Rhyodacite	RD
Rhyolite	R
Ripple marks	rmk
Round	rnd
Rubble	rbb
Sandstone	Ss
Schist	Sch
Schistose	sch

Sediment	sed
Selected fragments	sfr
Sericite	Se
Serpentine	Srp
Shale	Sh
Sheared	shd
Siderite	Sid
Silica	Si
Siliceous	sil
Siltstone	Slt
Slickenside	slk
Sphalerite	Sp
Spotted	spt
Spotty	spt
Stockwork	stw
Strong	str
Structure controlled	stc
Talc	Tc
Tertiary	T
Trace	tr
Trachyte	Tr
Tuff	Tf
Tuffaceous	tf
Variolitic	vr
Vein	vn
Vein concordant to bedd	cV
Vein discordant to bedd	dV
Very	v
Vesicular	ves
Vitric	vtr
Volcanic	vlc
Volcaniclastic	vlcl
Weak	wk
Weathered	wth
White	wh
Yellow	yw

EXPLORATION LICENCE BOUNDARY

RINADEENA SADDLE

FLEABITE CREEK

JACK CREEK

SAILOR JACK CREEK

OLD MT. LYELL RAILWAY

To Highway approx. 200 m.

Walking Track

375000 m E

376000 m E

5332000 m N

5331000 m N

5330000 m N

31800 N

31600 N

31400 N

31200 N

31000 N

30800 N

30600 N

30400 N

30200 N

753500 E

738500 E

0 250 metres

5 cm

N

AREA OF COVERAGE

E.L. 26/86

678048

89-2918

Aberfoyle Resources Limited
EXPLORATION DIVISION

WESTERN TASMANIA

SWIFT CREEK E.L.26/86 CRA J.V.

RINADEENA GRID

OUTCROP GEOLOGY

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

Scale : 1 : 2500

Date : August, 1988

Compiled : RJH

Drawn : RJE

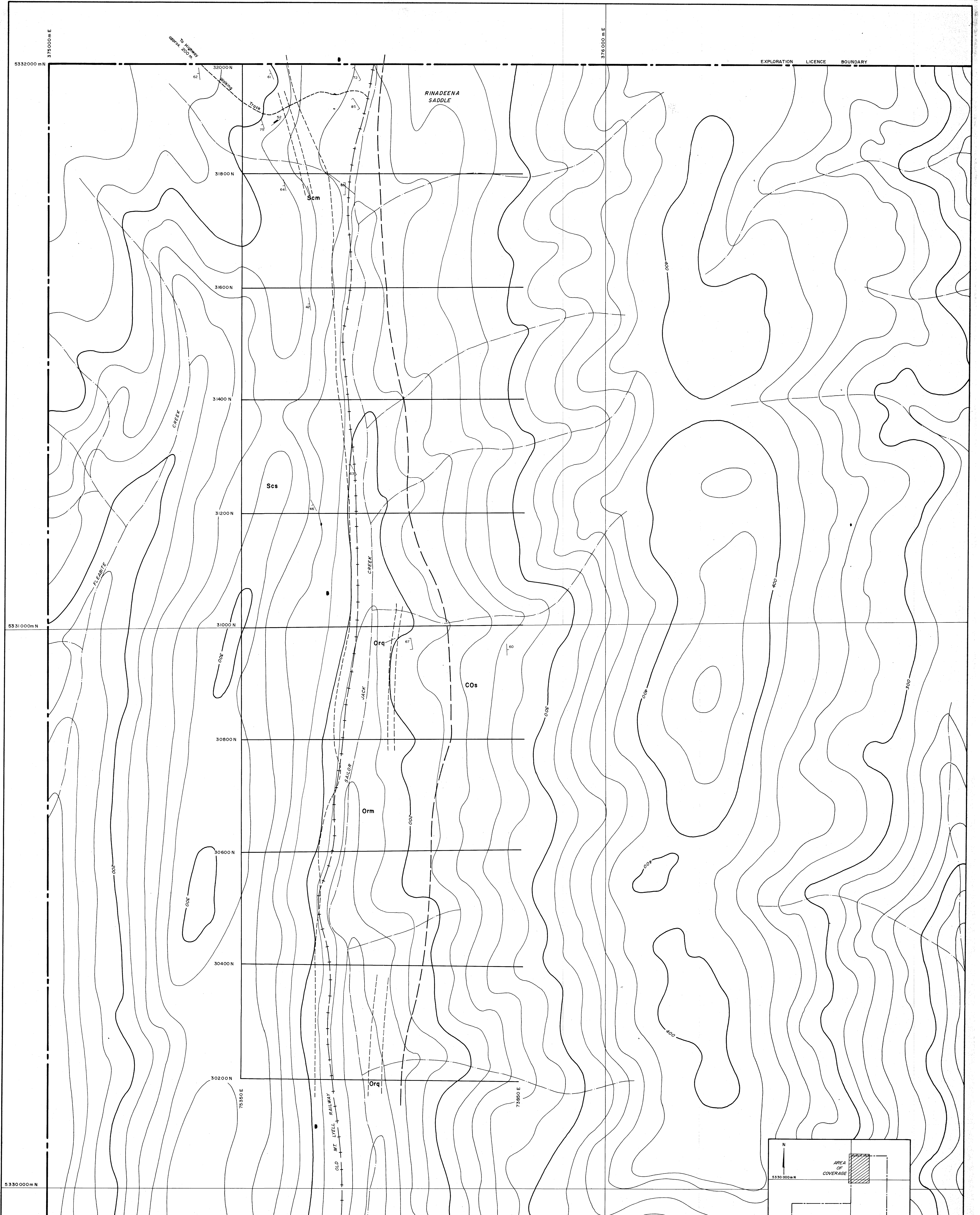
Traced : JLR

Checked :

Plate No : SWC 4a

043M 52 Dip & dip direction

016M 62 Slaty cleavage & cleavage direction



- LEGEND -

ELDON GROUP CORRELATES

SILURIAN	Scs / Scm	wh.-gy.gn. Mica-rich Sandstone c̄ minor Siltstone interbeds (Scm) (Crotty Quartzite)
	GORDON GROUP	
ORDOVICIAN	Orm / Orq	or.br.-gy.gn. Highly cleaved Shale c̄ occasional Siltstone interbeds & Quartzite units (Orq) (Rinadeena Mudstone)
	DENISON GROUP	
CAMBRO-ORDOVICIAN	COs	wh.-gy Mica-rich Sandstone c̄ minor Quartz / Feldspar conglomerate seen as float only (Owen Conglomerate correlates)

678049

89-2918

Aberfoyle Resources Limited
EXPLORATION DIVISION

FIG 2

REVISIONS			
Init.	Date	Init.	Date

WESTERN TASMANIA

SWIFT CREEK E.L.26/86 CRA J.V.

RINADEENA GRID

INTERPRETED GEOLOGY

Compiled : RJH
Drawn : RJE
Traced : JLR
Checked :

Location Code :
Scale : 1 : 2500
Date : September, 1988
Plate No : SWC 4b

7971

375000 m E

376000 m E

5332000 m N

5331000 m N

5330000 m N

EXPLORATION LICENCE BOUNDARY

To Highway approx. 200 m

Walking Track

RINADEENA SADDLE

CREEK

FLEABITE CREEK

JACK CREEK

SAILOR

OLD MT. LYELL RAILWAY

32000 N

31800 N

31600 N

31400 N

31200 N

31000 N

30800 N

30600 N

30400 N

30200 N

75350 E

73850 E

431211/X,10,35,X,X,1,X

431229/5,85,195,X,0·009,26,X

431228/25,150,300,X,X,34,X

431230/X,60,65,X,X,5,X

431212/X,5,30,X,X,X,4

431220/10,20,40,X,X,X

431225/25,40,90,X,X,45,X

431219/100,5,45,X,X,1,X

431214/X,20,X,X,X,7

431231/X,30,105,X,X,9,X

431215/X,10,30,X,X,1,X

431216/X,5,20,X,X,6,X

431232/10,50,135,X,X,87,X

431233/5,55,135,0·5,X,15,6

431222/X,X,X,X,X,X,X

431217/20,10,20,X,X,20,X

431223/X,X,20,X,0·010,X,X

431224/X,X,10,X,0·011,45,X

431218/80,25,55,X,X,18,X

431226/40,290,520,X,0·018,50,-

431227/X,10,30,X,X,3,5

431221/X,10,15,X,X,2,3

400

300

200

0 250 metres

AREA OF COVERAGE

E.L. 26 / 86

5 cm

678050

89-2918

ALL VALUES IN PPM Cu, Pb, Zn, Ag, Au, As, Sb

Aberfoyle Resources Limited

EXPLORATION DIVISION

Fig 3

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

WESTERN TASMANIA

SWIFT CREEK E.L.26/86 CRA J.V.

RINADEENA GRID

ROCK CHIP GEOCHEMISTRY

Scale : 1 : 2500

Date : August, 1988

Compiled : RJH

Drawn : RJE

Traced : JLR

Checked :

Plate No : SWC 4c

7972

7973

375000mE

375500mE

376000mE

376500mE

5332000mN

5331500mN

5331000mN

5330500mN

5330000mN

75350 E

32000N

31800N

31600N

31400N

31200N

31000N

30800N

30600N

30400N

30200N

5 cm

678051

89-2918

Aberfoyle Resources Limited

EXPLORATION DIVISION

Fig 4

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

SWIFT CREEK E.L. 26/86 (CRA-JV)

RINADEENA GRID

SOIL SAMPLE LOCATIONS

Location Code :

Scale : 1:2500

Date : October, 1988

Compiled : RJH

Drawn : JLR

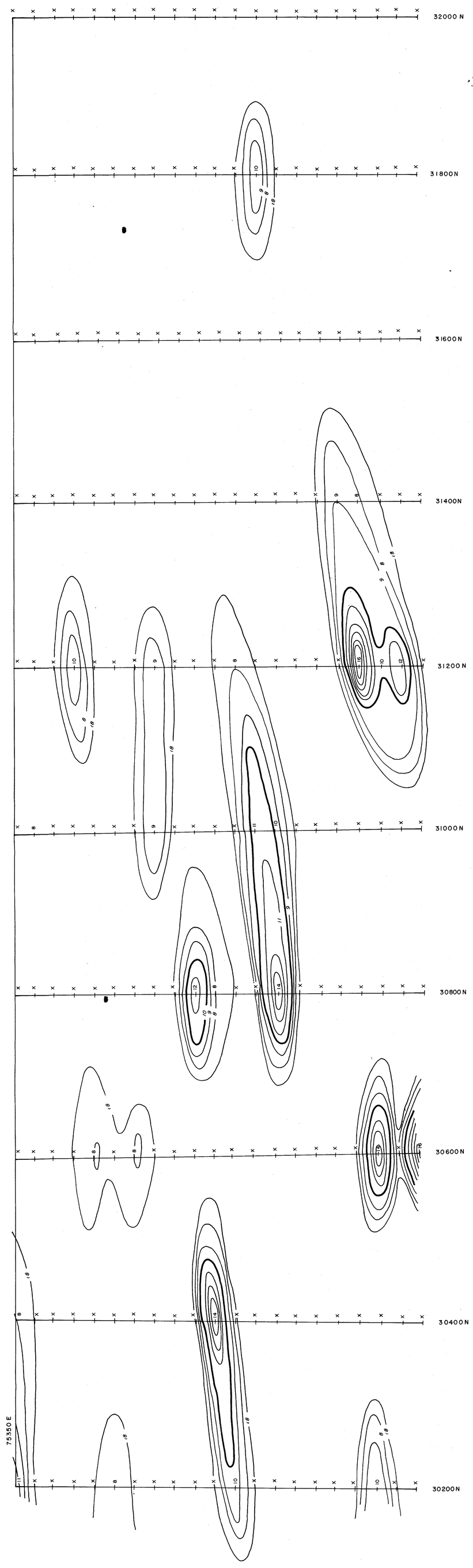
Traced :

Checked :

Plate No : SWC 5

7973

7974



678052

5 cm

89-2918

ALL VALUES IN PPB

Aberfoyle Resources Limited
EXPLORATION DIVISION

F16 S

REVISIONS			
Init.	Date	Init.	Date

Location Code :

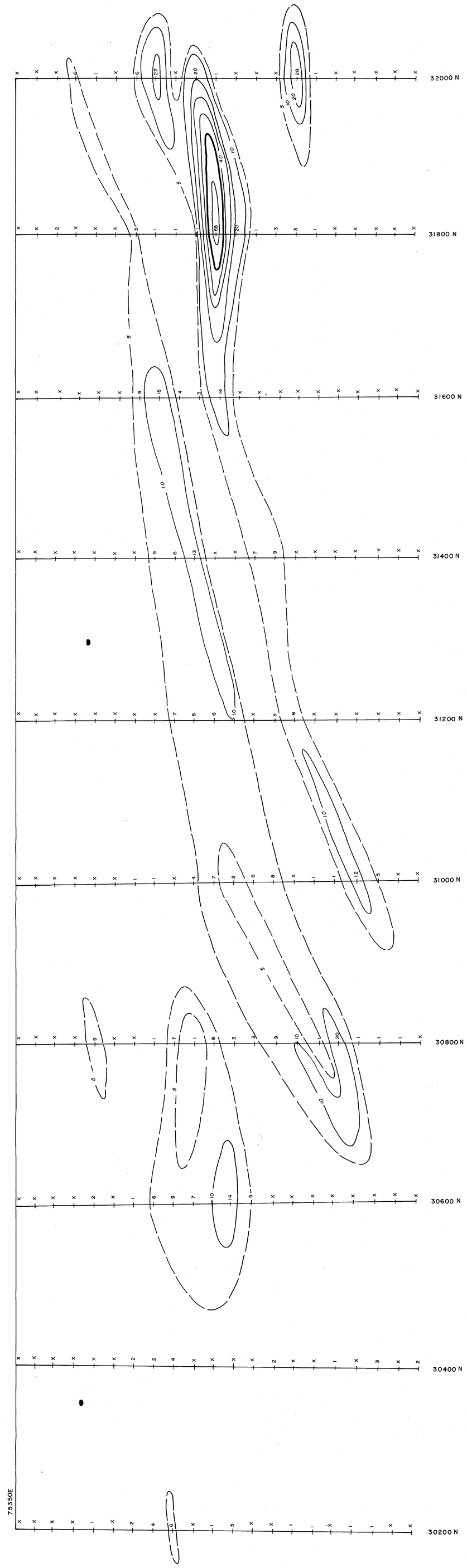
SWIFT CREEK E.L. 26/86 (CRA - JV)
SOIL GEOCHEMISTRY - GOLD

Scale : 1:2500 | Date : Sept 1988

Compiled : RJH
Drawn :
Traced : JLR
Checked :
Plate No : SWC 5a

7974

7975



678053

5 cm

89-2918

ALL VALUES IN PPM

Aberfoyle Resources Limited
EXPLORATION DIVISION

Fig 6

REVISIONS			
Init.	Date	Init.	Date

SWIFT CREEK E.L. 26/86 (CRA - JV)

SOIL GEOCHEMISTRY-ARSENIC

Location Code :

Scale : 1:2500

Date : October, 1988

Compiled : RJH

Drawn :

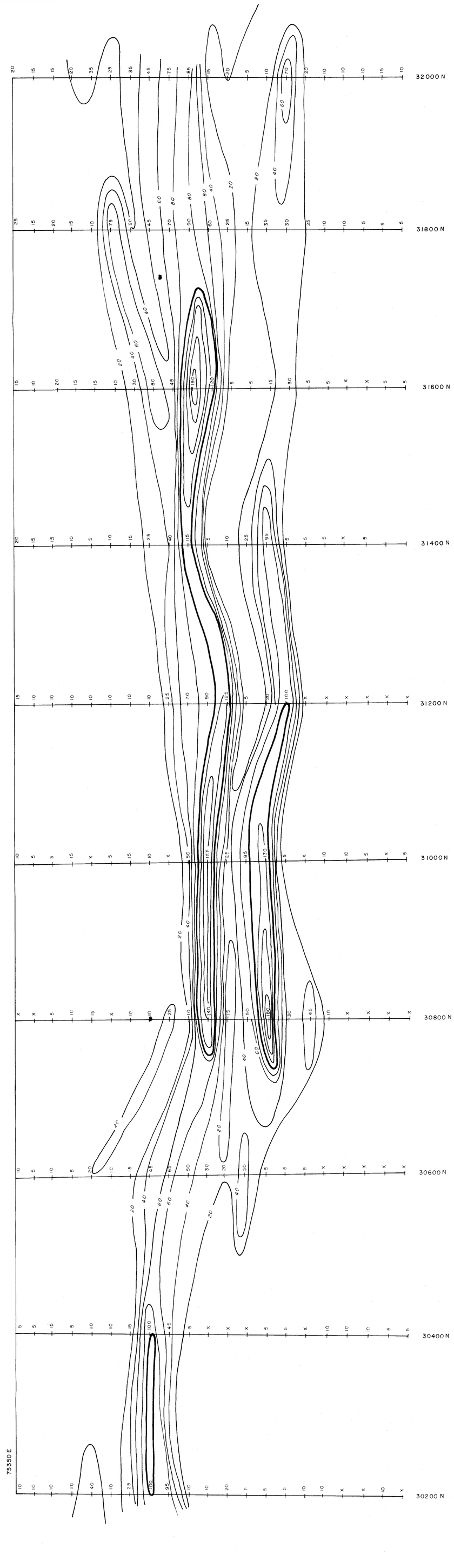
Traced : JLR

Checked :

Plate No: SWC 5b

7975

7976



C78034

5 cm

89-2918

ALL VALUES IN PPM

Aberfoyle Resources Limited
EXPLORATION DIVISION

F167

REVISIONS			
Init.	Date	Init.	Date

Location Code :

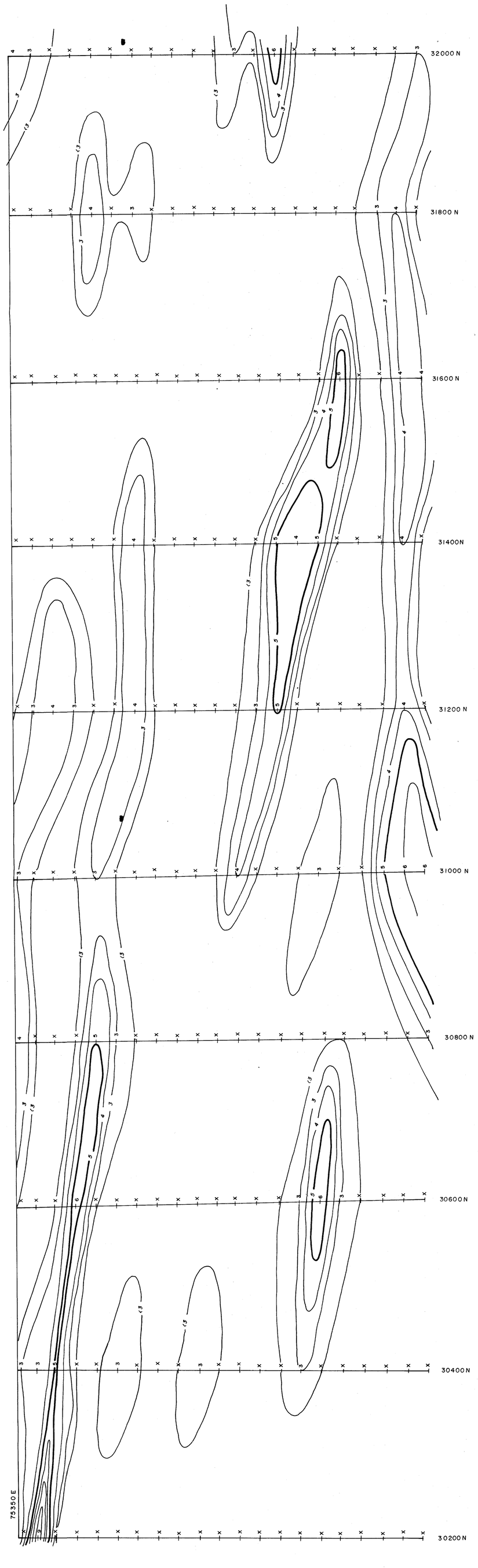
SWIFT CREEK E.L.26/86 (CRA - JV)

SOIL GEOCHEMISTRY - ZINC

Scale : 1:2500 | Date : October, 1988

Compiled : RJH
Drawn :
Traced : JLR
Checked :
Plate No : SWC 5c

7977



5 cm

675055

89-2918

ALL RESULTS IN PPM

Aberfoyle Resources Limited
EXPLORATION DIVISION

Fig 8

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

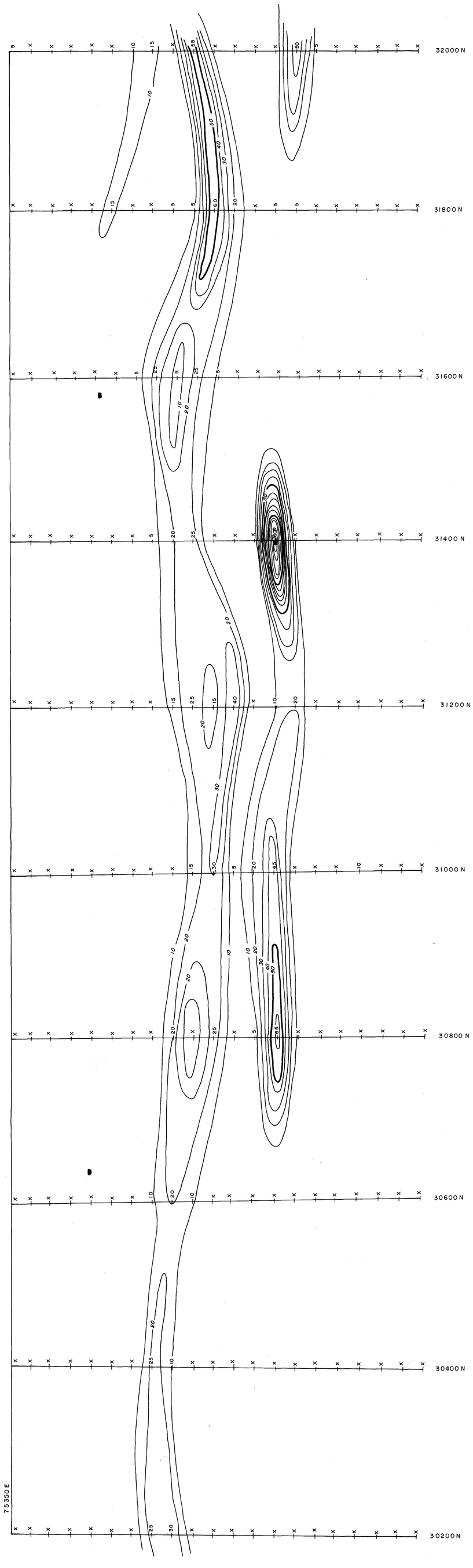
SWIFT CREEK E.L.26/86(CRA-JV)
SOIL GEOCHEMISTRY- ANTIMONY

Scale : 1:2500 | Date : November, 1988

Compiled : R J H
Drawn :
Traced : J L R
Checked :
Plate No : SWC 5d

7977

7978



678056

5 cm

89-2918

ALL VALUES IN PPM

Aberfoyle Resources Limited
EXPLORATION DIVISION

Fig 9

REVISIONS			
Init.	Date	Init.	Date
Location Code :			

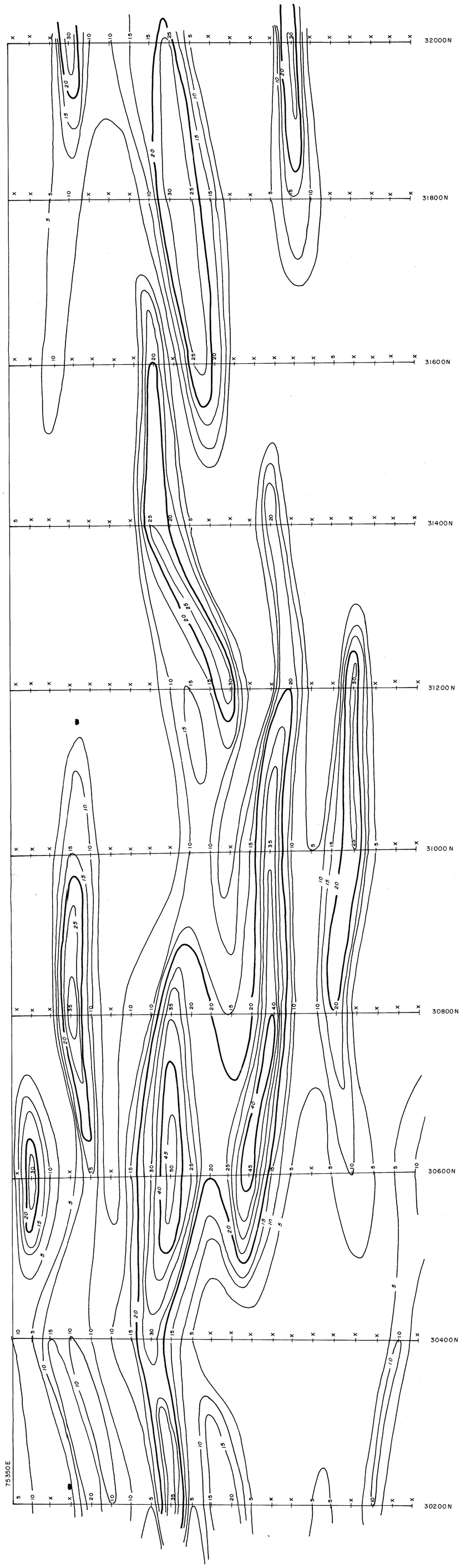
SWIFT CREEK E.L. 26/86 (CRA-JV)
SOIL GEOCHEMISTRY - COPPER

Scale : 1:2500 | Date : November, 1988

Compiled : RJH
Drawn :
Traced : JLR
Checked :
Plate No : SWC 54

7978

7979



678057

5 cm

89-2918

ALL RESULTS IN PPM

Aberfoyle Resources Limited
EXPLORATION DIVISION

fig 10

REVISIONS			
Init	Date	Init.	Date

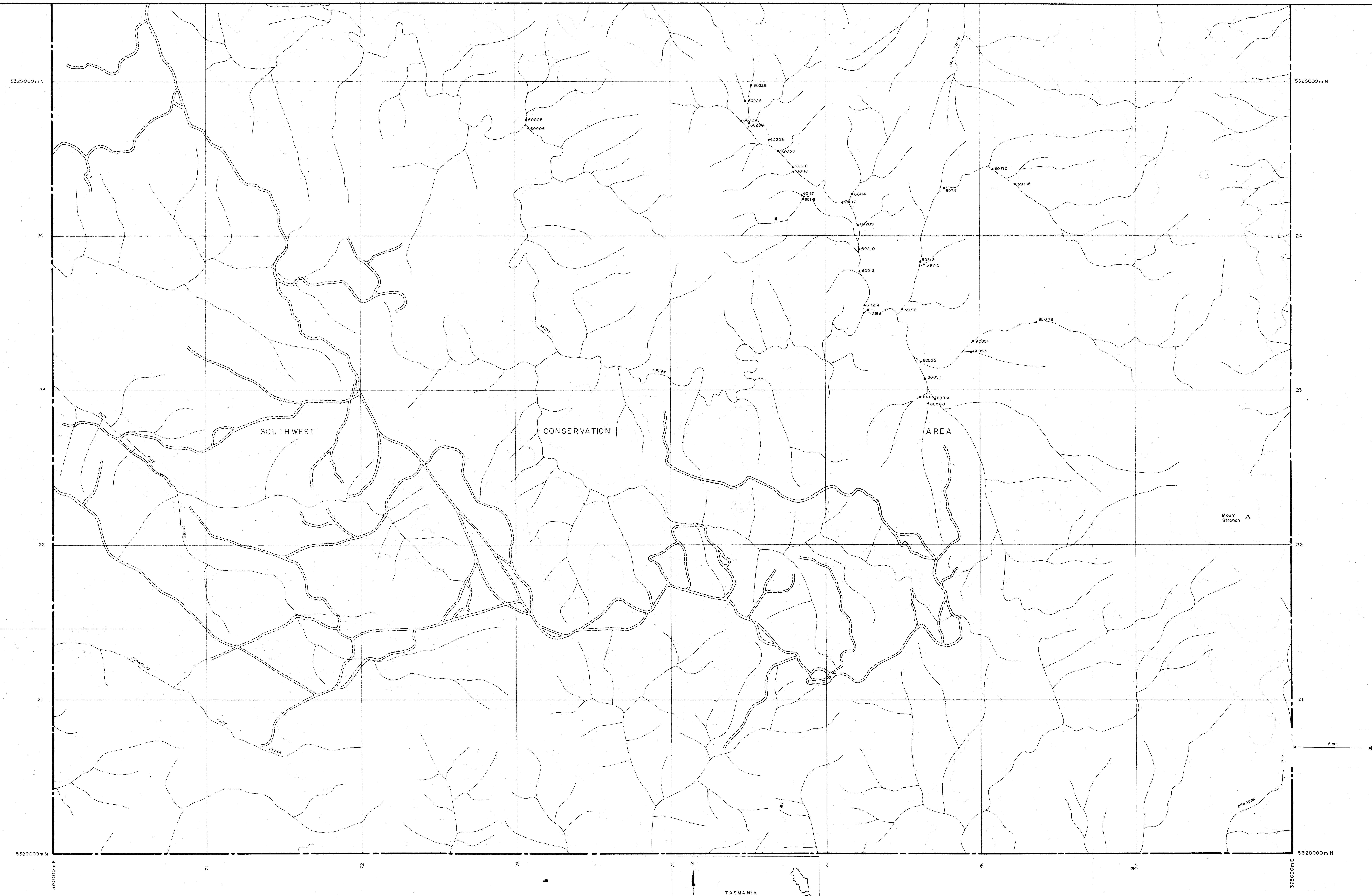
SWIFT CREEK E.L. 26/86 (CRA-JV)
SOIL GEOCHEMISTRY -LEAD

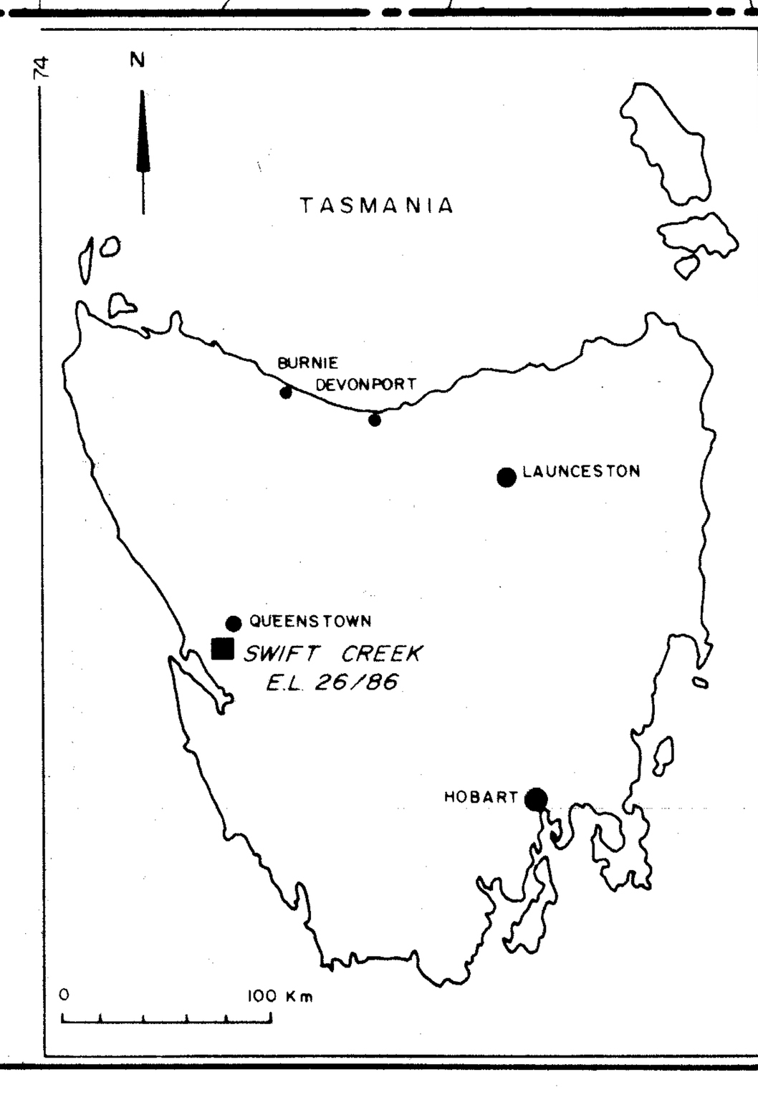
Compiled : RJH
Drawn :
Traced : JLR
Checked :

Location Code :
Scale : 1:2500
Date : October, 1988
Plate No : SWC 5f

7979


TASMANIA
BURNIE
DEVONPORT
LAUNCESTON
QUEENSTOWN
SWIFT CREEK E.L. 26/86
HOBART
0
100 Km
Index to Sheets
A
B
0
500
1000metres
TO QUEENSTOWN (approx 10 Km)
HIGHWAY
RINADEENA SADDLE
KING
RIVER
Old Mt Lyell Railway
abandoned railway formation
Teepookana
disused and collapsed railway bridge
SOUTHWEST
CONSERVATION
AREA
5332050mN
5328000mN
375000mE
378000mE
370000mE
5 cm
89-2918
678058 Aberfoyle Resources Limited
EXPLORATION DIVISION
Fib 11
REVISIONS
Init. Date Init. Date
WESTERN TASMANIA
SWIFT CREEK E.L. 26/86 CRA J.V.
EZ STREAM SEDIMENT SAMPLE LOCATIONS
Compiled : RJH
Drawn : RJE
Traced : JLR
Checked :
Location Code : SK55/5
Scale : 1: 10,000
Date : January, 1989
Plate No : SWC 10a
7980





0 500 1000 metres

89-2918

678059

Aberfoyle Resources Limited
EXPLORATION DIVISION

FIG 12

REVISIONS			
Init.	Date	Init.	Date

WESTERN TASMANIA

SWIFT CREEK E.L. 26/86 CRA J.V.

EZ STREAM SEDIMENT SAMPLE LOCATIONS

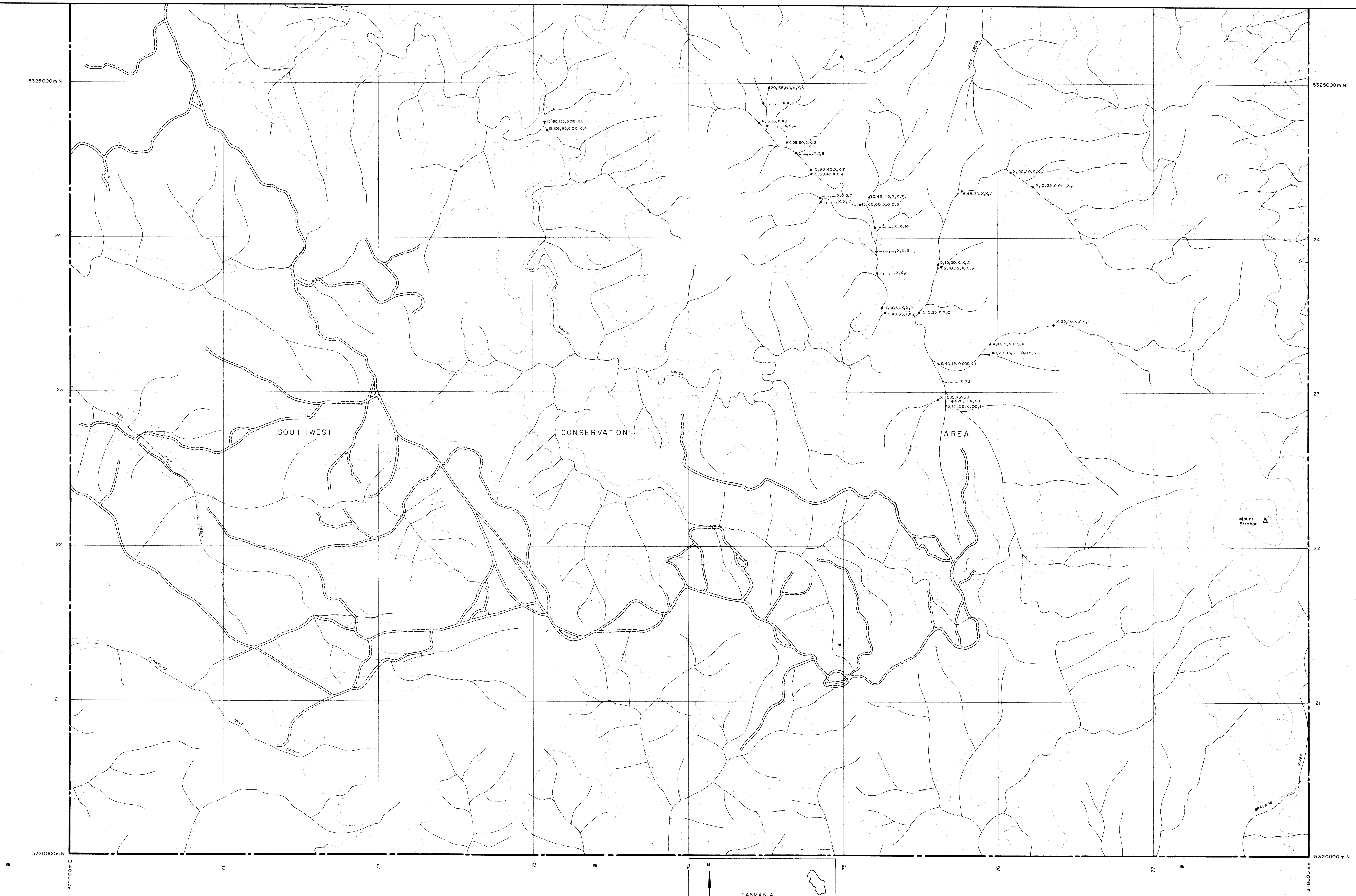
Compiled : RJH
Drawn : RJE
Traced : JLR
Checked :

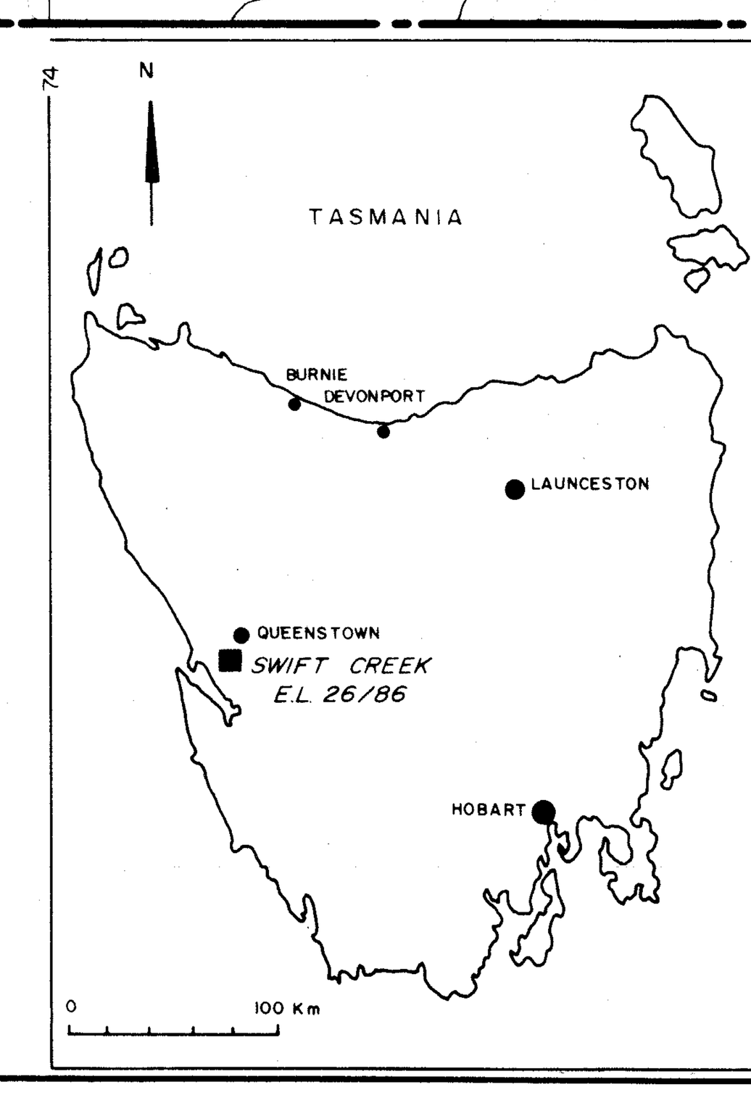
Location Code : SK55/5
Scale : 1 : 10,000
Date : January, 1989
Plate No : SWC 10b

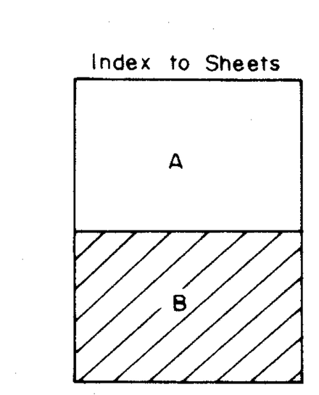
7981


TO QUEENSTOWN (approx 10 Km)
TASMANIA
BURNIE
DEVONPORT
LAUNCESTON
QUEENSTOWN
SWIFT CREEK EL 26/86
HOBART
100 Km
Index to Sheets
A
B
0 500 1000metres
5332050mN
378000mE
375000mE
370000mE
5328000mN
HIGHWAY
RINADEENA SADDLE
FLEBITE CREEK
Old Mt Lyell Railway
KING RIVER
CONSERVATION
BOUNDARY
abandoned railway formation
GARFIELD
RIVER
Teepookana
disused and collapsed railway bridge
SOUTHWEST
CONSERVATION
AREA
CREEK
5 cm
89-2918
Cu, Pb, Zn, Au, Ag, As
(Cu, Pb, Zn by EZ)
(Au, Ag, As reassayed by Aberfoyle)
678060 Aberfoyle Resources Limited
EXPLORATION DIVISION
FIG 13
REVISIONS
Init. Date Init. Date
WESTERN TASMANIA
SWIFT CREEK E.L. 26/86 CRA J.V.
EZ STREAM SEDIMENT GEOCHEMISTRY
(all data in ppm)
Compiled : RJH
Drawn : RJE
Traced : JLR
Checked :
Location Code : SK55/5
Scale : 1: 10, 000
Date : January, 1989
Plate No : SWC 11a

7982







0 500 1000 metres

5 cm

89-2918

• Cu, Pb, Zn, Au, Ag, As
(Cu, Pb, Zn by EZ)
(Au, Ag, As re assayed by Aberfoyle)

678061 **Aberfoyle Resources Limited**
EXPLORATION DIVISION

Fig 14

REVISIONS					
Init.	Date	Init.	Date	WESTERN TASMANIA	Compiled : RJH
				SWIFT CREEK E.L. 26/86 CRA J.V.	Drawn : RJE
				EZ STREAM SEDIMENT GEOCHEMISTRY	Traced : JLR
				(all data in ppm)	Checked :
Location Code : SK55/5				Scale : 1 : 10,000 — Date : January, 1989	Plate No : SWC 11b

7983