

97-3962

366001



EL 59/94

MT AGNEW

ANNUAL REPORT

JANUARY 11, 1996

to

JANUARY 10, 1997

EL 59/94
JAN 1997
See folio 41

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AUTHOR: David Lane

DATE OF REPORT: January 15, 1997

AMG REFERENCE POINTS ADDED

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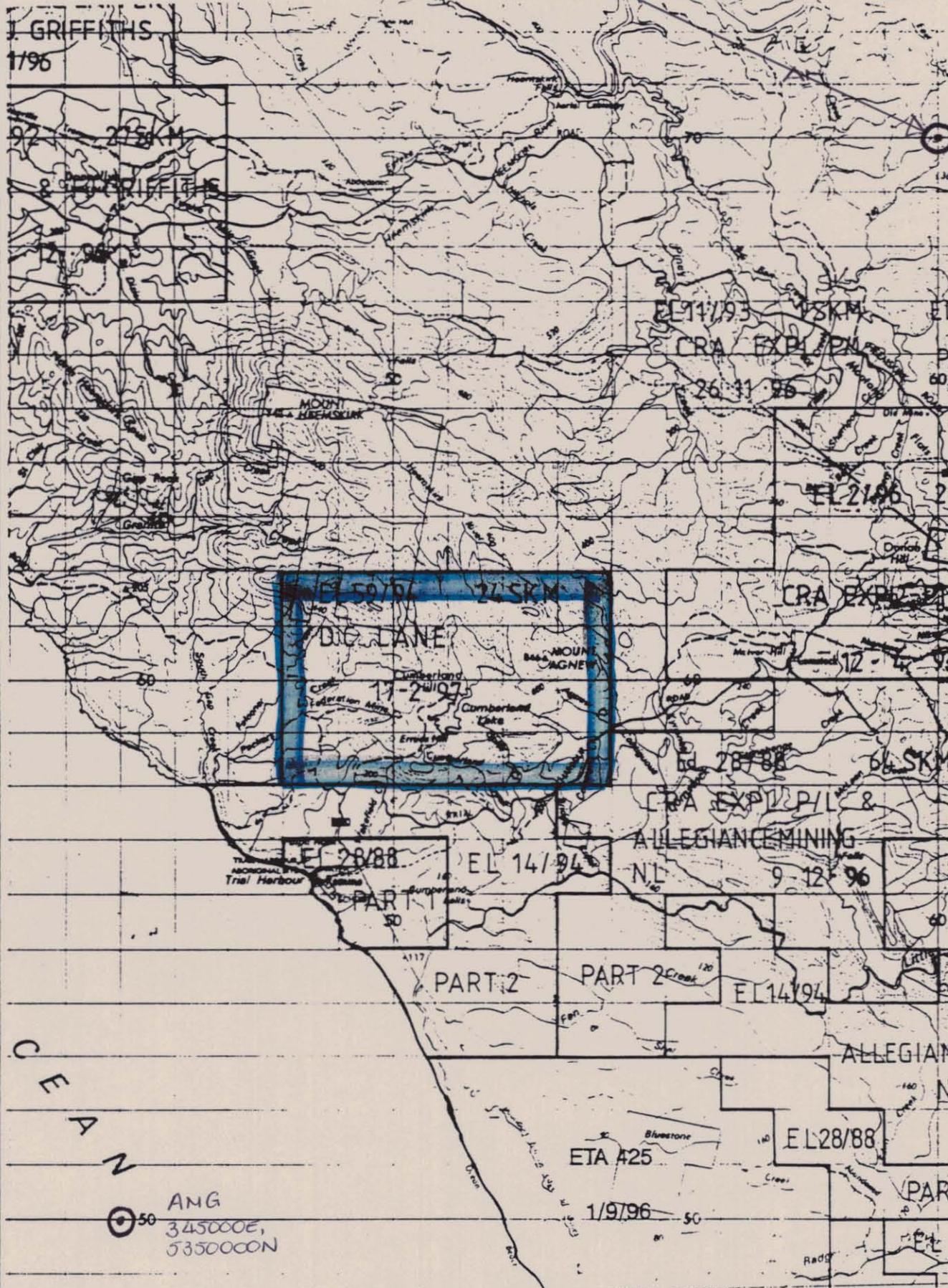
ANNUAL REPORT - MT AGNEW
EL 59/94 - 1996 - D.C.LANE

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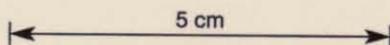
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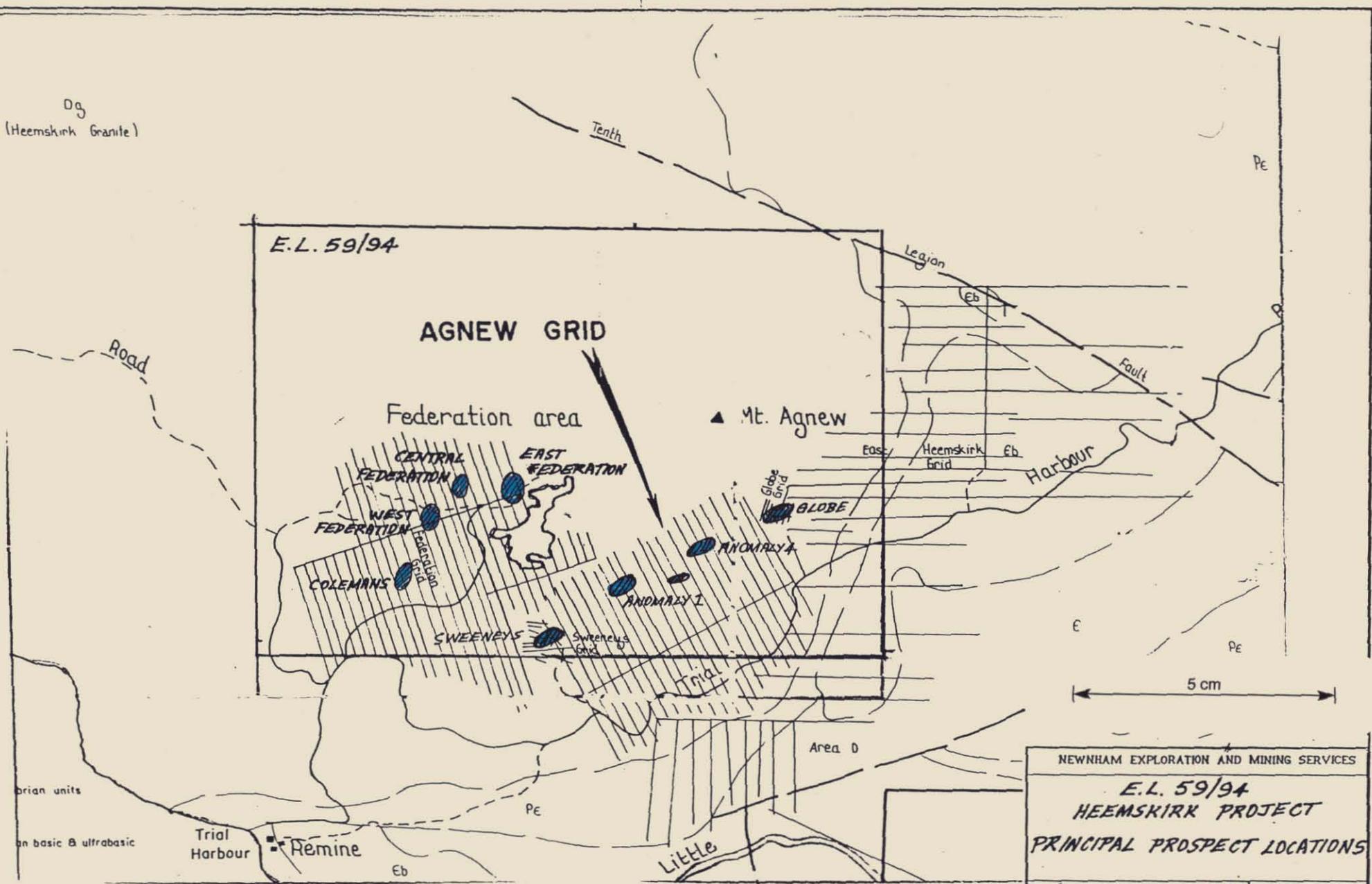


NEWNHAM EXPLORATION AND MINING SERVICES

E.L. 59/94
HEEMSKIRK PROJECT
LOCATION PLAN

0 km	4	Scale: 1:100,000
Drawn: L.A.N.	Date: Sept. 96	Figure: 1

Dg
(Heemskirk Granite)



NEWHAM EXPLORATION AND MINING SERVICES	
E.L. 59/94 HEEMSKIRK PROJECT	
PRINCIPAL PROSPECT LOCATIONS	
10 km.	2
Scale: 1:50,000	
Drawn:	Date: Sept 96
	Figure: 32

36600

2. TENEMENT INFORMATION

EL 59/94 was issued to David Lane on February 17, 1995. Figure 1 is a locality map.

The Licence area originally comprised 36 square kilometres of unoccupied Crown Land and State Forest - Multiple Use Forest Land. The northern portion (12 square kilometres) of this area was relinquished in January 1996, leaving 24 square kilometres.

3. SUMMARY OF WORK COMPLETED

3.1 General

Work this year has concentrated on the Globe Mine.

Peter Olubas advised in June that he would no longer be available as a consulting geologist due to work commitments in Queensland. Lindsay Newnham (of Newnham Exploration and Mining Services) advised against re-logging of drill core and instead, proposed a review of existing data. This was completed in September (see Appendix 8.3).

Following the recommendations of Lindsay Newnham, a review of the work program was undertaken. The new work program focuses on the Globe Mine. This had the added advantage that only minimal access preparation was required compared to Sweeney's Mine.

3.2 Globe Mine

Work has concentrated on the cross-cut in the lower adit (designated No.1). Following the recommendations of Newnham 1996, all work was directed towards a 2 m. extension of the cross-cut.

The adit was flooded due to a rock fall at the portal. The AMD + residue was about 0.5 m. deep. The rock and AMD residue were excavated and dumped at the existing tip-head above Agnew Creek. This operation was carried out over two weeks, to minimise the impact of the AMD residue in Agnew Creek. The turbidity of Agnew Creek at the Trial Harbour Road was monitored visually. Little or no increase was observed.

The winze and the stope in the cross-cut remain flooded.

Rock-chip sampling of the cross-cut was carried out for orientation and as a check on Renison sampling of 1981. A 2 m. extension development of the cross-cut was also completed.

Samples were also sent to Ralph Bottrill at MRT for petrography.

3.3 Sweeney's Mine

My work program proposed costeaning and underground development at Sweeney's. However, the existing access track has a very steep section that has been extensively eroded. A better access route is required before this work is carried out.

Two days was spent looking for a better route. A suitable alternative has not been found as yet.

Work undertaken included further sampling at the open-cut and in the adit near the cross-cut.

3.3 Other Areas and Commodities

Another day was spent at Allison's Workings looking for quartz-tourmaline vein structures described in Klominsky 1972. None were found. All quartz veins observed were barren.

At all times, when field work was carried out, the dimension stone potential of areas was evaluated.

4. DETAILS OF SURVEYS

4.1 Globe Mine

4.1.1 The Globe Mine is located on a contact zone between coarse grained red biotite granite and the later stage, finer grained leucocratic granite. Aplitic dykes are also present. Precambrian Oonah Slates and Quartzites lie a short distance to the west and north west.

Both the red and white granites in the area of the mine have undergone varying degrees of alteration. The mine complex has been developed on an extensive zone of argillic alteration, and consists of three adits and two trenches.

The No.1 adit was driven approx. NW from Agnew Creek for 70 metres. About 30 metres from the portal, a zone of quartz-tourmaline alteration has been exposed which continues to the face at the end of the main drive.

About 55 metres from the portal, a cross-cut was driven NE for about 15 metres. This cross-cut was also extended SW for a few metres, but quickly passed out of the mineralisation. At the northern end of the cross-cut, two short drives were driven in approx. SE, parallel to

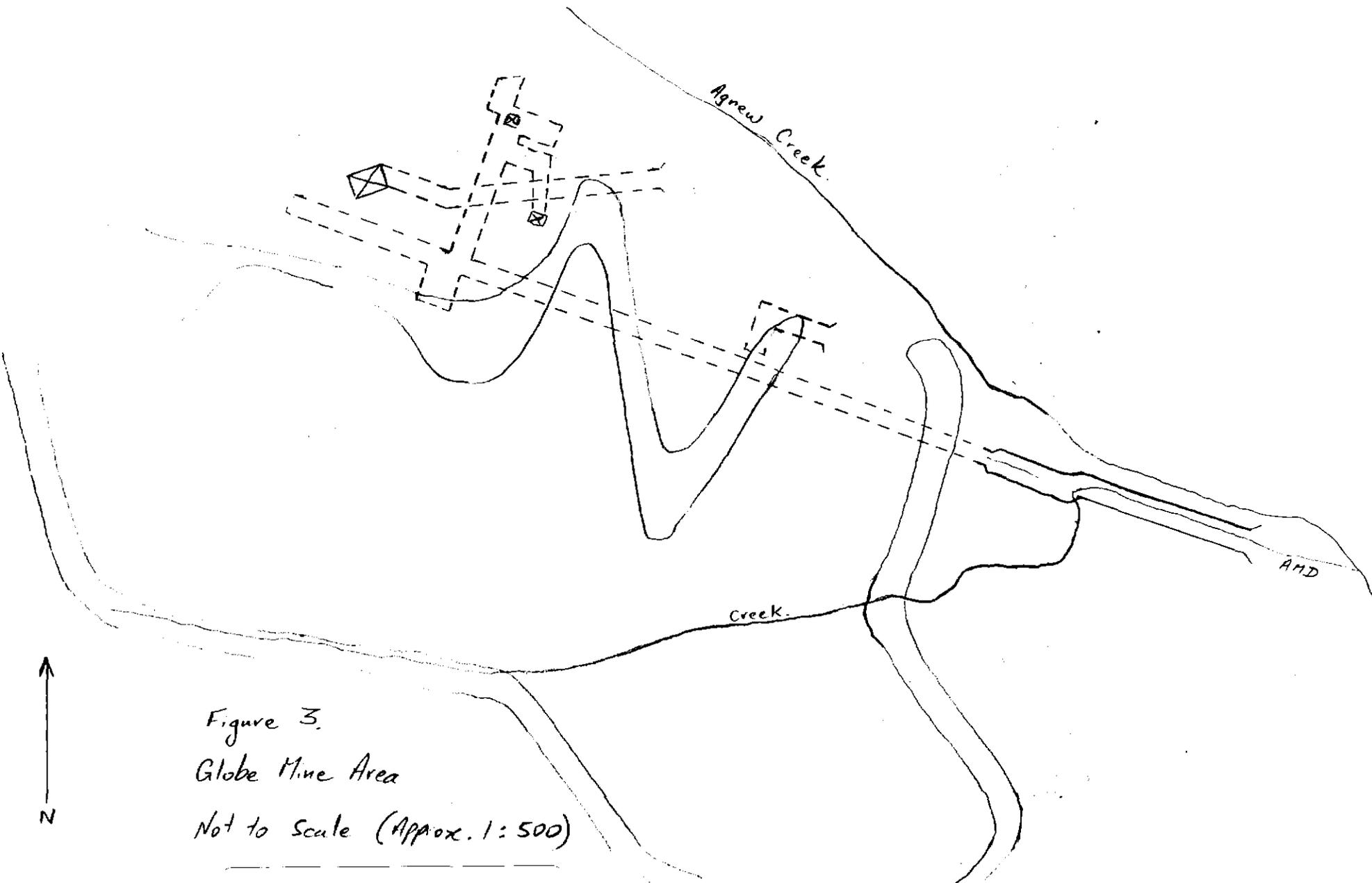


Figure 3.
Globe Mine Area
Not to Scale (Approx. 1:500)

5 cm

366009

1. GLM001
2. GLM002
3. GLM003
4. GLM004
5. GLM005
6. GLM006
7. GLM007
8. GLM008

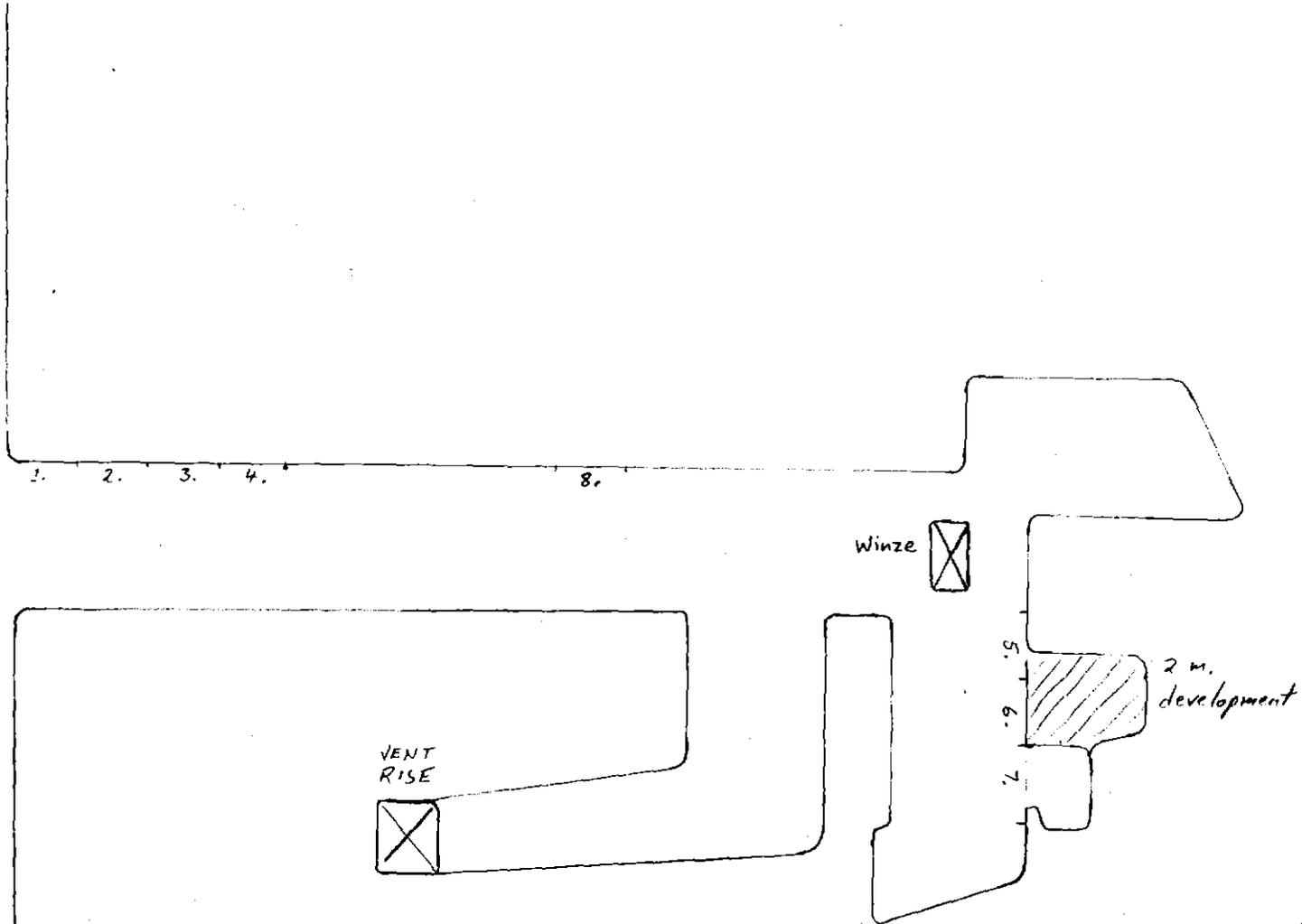


Figure 4.
 Globe Mine No. 1 Adit X-cut
 Sampling Locations

Not to Scale (Approx. 1:100)

5 cm

366010

Table 1:
Summary of Globe Mine No.1 edit X-cut sampling 1996 and comparison with Renison sampling 1981

1996 Sample No.	1981 Sample No.	1996 Ag g/t	1981 Ag g/t	1996 Sb %	1981 Sb %	1996 Cu %	1981 Cu %	1996 Pb %	1981 Pb %	1996 Zn %	1981 Zn %	1996 Bi %	1981 Bi %	1996 S %	1981 S %
GLM001	1	21	169	0.036	0.11	0.003	0.02	0.19	0.28	0.004	0.01	0.002	<0.007	<0.1	0.2
GLM002	2	23	18	0.030	0.03	0.001	0.01	0.066	0.06	0.005	0.01	0.001	<0.007	<0.1	<0.1
GLM003	3	310	146	0.20	0.06	0.001	0.02	0.39	0.25	0.007	0.01	0.001	<0.007	<0.1	<0.1
GLM004	4	113	260	0.14	0.18	0.007	0.02	0.29	0.42	0.008	0.01	0.002	<0.007	<0.1	0.4
GLM005	22	380	217	0.31	0.23	0.054	0.07	0.79	0.44	0.024	0.02	0.012	<0.007	0.1	0.2
GLM006	23	640	215	0.81	0.36	0.074	0.06	2.09	0.85	0.042	0.02	0.002	<0.007	0.6	0.3
GLM007	24	52	186	0.039	0.37	0.010	0.12	0.12	4.35	0.015	0.04	0.003	<0.007	<0.1	1.2
GLM008	9	10	40	0.047	0.06	0.014	0.04	0.10	0.10	0.021	0.06	0.001	<0.007	0.2	0.9
	means	184	155	0.214	0.176	0.021	0.045	0.501	0.844	0.016	0.023	0.003		0.11	0.40
	medians	82.6	177	0.093	0.145	0.0086	0.03	0.2325	0.35	0.0115	0.016	0.002		0.2	0.35
GLM009	ns	148	ns	0.077	ns	0.027	ns	0.15	ns	0.11	ns	<0.001	ns	0.7	ns
GLM010	ns	65	ns	0.116	ns	0.023	ns	0.39	ns	0.097	ns	<0.001	ns	0.4	ns
GLM011	ns	4	ns	0.008	ns	0.001	ns	0.036	ns	0.079	ns	<0.001	ns	0.2	ns
1996 Sample No.	1981 Sample No.	1996 Sn %	1981 Sn %	1996 SSn %	1981 SSn %	1996 As %	1981 As %	1996 Fe %	1996 Mn %	1996 MgO %	1996 WO ₃ %	1981 WO ₃ %	1996 Ni %	1996 Mo %	1996 Cd g/t
GLM001	1	0.04	0.51	<0.01	<0.01	0.02	<0.1	7.6	0.05	0.7	0.01	<0.01	0.001	<0.001	1
GLM002	2	0.05	0.03	<0.01	<0.01	0.03	<0.1	7.3	0.06	0.7	0.01	<0.01	<0.001	<0.001	1
GLM003	3	0.02	0.02	0.01	0.01	0.03	<0.1	7.8	0.09	1.3	0.02	<0.01	0.001	<0.001	<1
GLM004	4	0.03	0.03	<0.01	0.01	0.02	<0.1	6.3	0.06	0.9	<0.01	<0.01	<0.001	<0.001	<1
GLM005	22	0.03	0.03	<0.01	<0.01	0.04	<0.1	8.7	0.07	0.4	0.01	<0.01	<0.001	<0.001	<1
GLM006	23	0.13	0.07	<0.01	<0.01	0.11	<0.1	9.2	0.09	0.6	0.01	<0.01	0.001	<0.001	1
GLM007	24	0.03	0.11	<0.01	<0.01	0.01	<0.1	5.5	0.04	0.4	<0.01	0.01	<0.001	<0.001	<1
GLM008	9	0.04	0.04	<0.01	<0.01	0.05	<0.1	6.9	0.44	0.6	0.02	<0.01	<0.001	<0.001	<1
	means	0.046	0.105	0.001	0.003	0.039		7.66	0.113	0.70	0.010	0.001	0.0004		0.4
	medians	0.036	0.035			0.03		7.7	0.065	0.65					
GLM009	ns	0.04	ns	<0.01	ns	0.03	ns	6.7	1.49	0.3	0.01	ns	nd	nd	nd
GLM010	ns	0.01	ns	<0.01	ns	0.01	ns	6.6	0.57	0.3	<0.01	ns	nd	nd	nd
GLM011	ns	0.03	ns	<0.01	ns	0.02	ns	6.5	0.78	0.3	0.01	ns	nd	nd	nd

SSn = acid-soluble tin
ns = no sample
nd = not determined

the main adit. A winze was sunk, and a small stope has been mined NW of the winze.

- 4.1.2 Chip sampling undertaken by Renison (see Roberts 1981) averaged 103 g/t Ag over 54 metres in the northern cross-cut.

Some work has apparently been done since the Renison survey in 1981. A ventilation rise has been driven from the first short drive in the cross-cut. A small development was carried out about one metre north near the end of the second short drive. Also, a small development was carried out at the face at the end of the adit.

- 4.1.3 In 1981, Renison used random chip sampling over one-metre sections. Panel sampling was used as a check on this procedure. Eight one-metre samples were taken (GLM001-GLM008).

A summary of the assays and comparison with the Renison sampling of 1981 is shown in Table 1. Sample locations are given in Figure 4.

- 4.1.4 The original proposal was to do the cross-cut development in the stope NW of the winze. Because the stope was flooded, the development was carried out in the second short drive, beside the winze.

The 2 m. development passed out of the quartz-tourmaline mineralisation into the argillic alteration zone. Three samples were taken of the excavated rock. Two were of quartz-tourmaline mineralisation (GLM009 & GLM010). One sample was taken close to the face (GLM011). This sample was a mix of argillised granite and quartz-tourmaline (about 50:50).

Assay results are included in Table 1.

Petrographic analysis and mapping have not yet been completed.

4.2 Sweeney's Mine

Additional sampling was carried out in the open-cut and in the adit near the cross-cut.

Figures 5 and 6 are plans of the area and the main drive respectively. Sample locations are shown on these plans. Assay summary is included in Table 2.

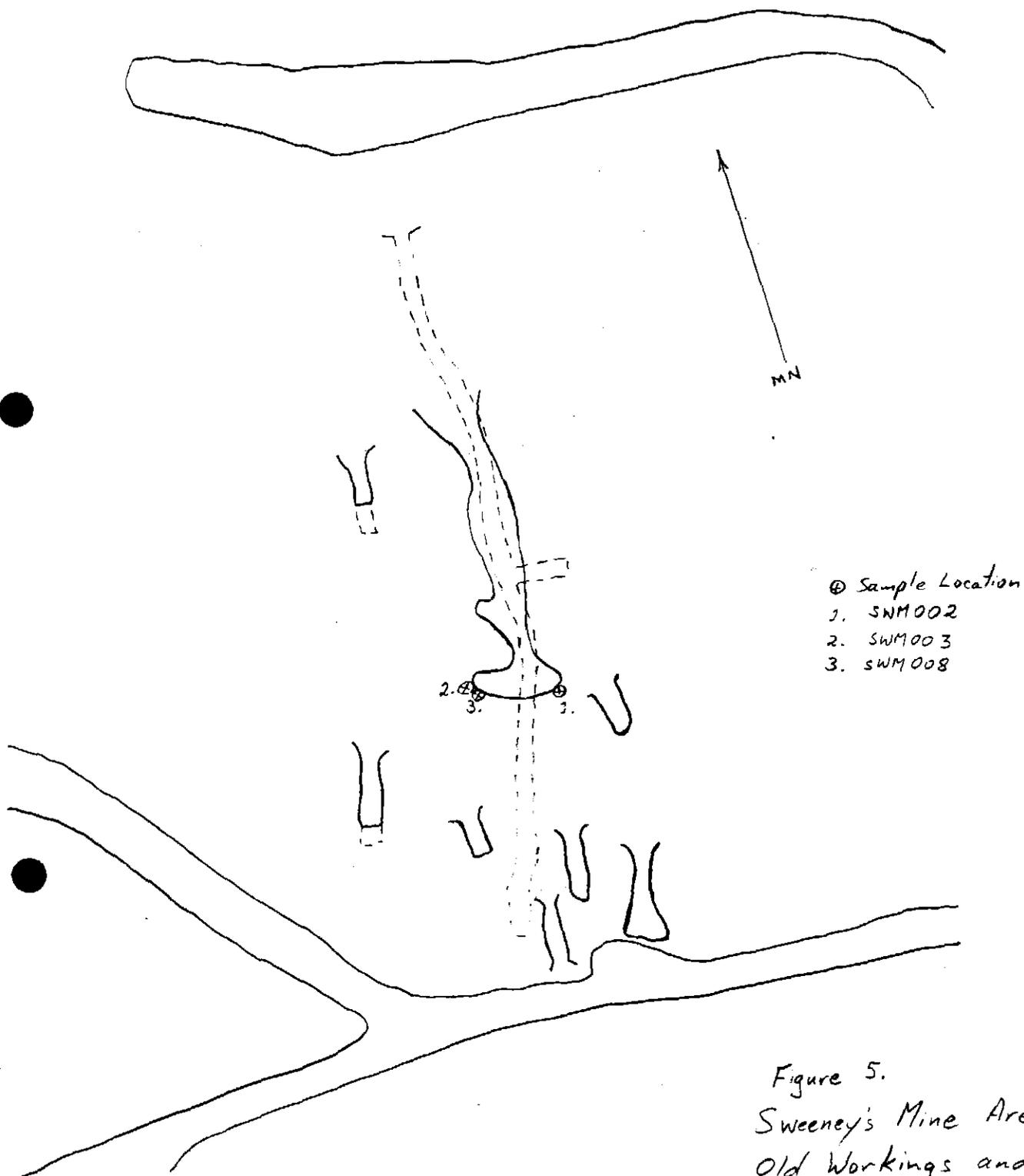


Figure 5.
Sweeney's Mine Area
Old Workings and
Sampling Locations
Not to Scale (Approx. 1:500)

5 cm

Figure 6.
Sweeney's Mine Adit
Sampling Locations

⊗ Sample location

- 1. SWM005
- 2. SWM006
- 3. SWM007

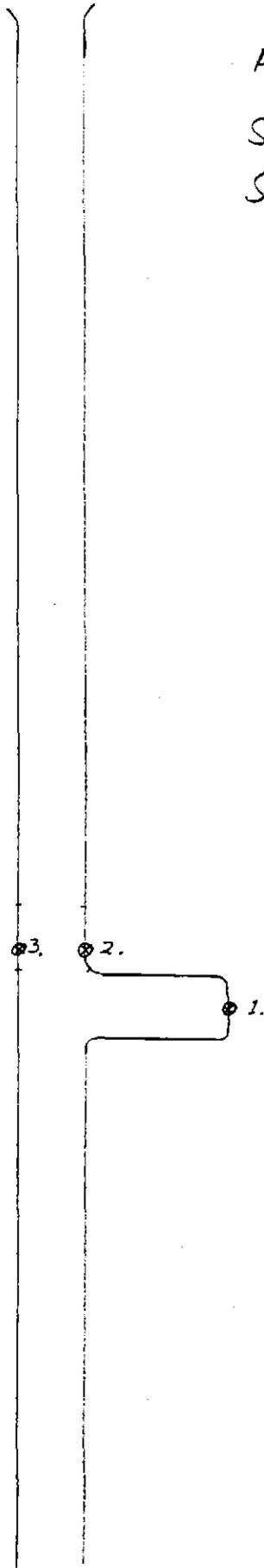


Table 2:
Summary of Sweeney's Mine sampling 1995-96

Sample No.	Sn %	SSn %	Ag g/t	Zn %	Pb %	Cu %	Sb %	Bi %	S %
SWM 001	<0.01	<0.01	<1	0.004	0.001	<0.001	0.003	0.008	<0.1
SWM 002	1.48	0.19	104	8.95	0.22	0.55	0.046	0.005	8.4
SWM 003	2.78	0.02	33	0.10	0.019	0.015	0.015	0.004	1.4
SWM 004	0.70	0.02	11	0.56	0.45	0.025	0.22	0.006	5.2
SWM 005	0.01	<0.01	<1	0.016	0.004	<0.001	0.004	0.007	0.5
SWM 006	0.90	0.01	1	0.034	0.012	<0.001	0.003	0.002	3.5
SWM 007	1.29	0.01	1	0.007	0.009	0.001	0.002	0.002	1.3
SWM 008	7.81	0.05	82	0.098	0.016	0.020	0.022	0.026	8.7

Sample No.	As %	Fe %	Mn %	WO ₃ %	MgO %	Ni %	Mo %	Cd g/t
SWM 001	0.02	1.8	0.03	0.01	<0.1	0.001	0.002	nd
SWM 002	0.09	5.3	0.02	0.01	<0.1	<0.001	0.001	nd
SWM 003	0.03	3.4	0.02	0.02	<0.1	0.001	0.001	nd
SWM 004	0.01	10.3	0.02	0.02	0.3	0.002	<0.001	25
SWM 005	0.02	8.3	0.02	0.01	0.3	0.001	<0.001	<1
SWM 006	<0.01	6.1	0.03	0.01	0.5	<0.001	<0.001	1
SWM 007	0.03	3.6	0.02	<0.01	0.6	0.001	<0.001	1
SWM 008	0.08	8.7	<0.01	0.04	0.1	<0.001	<0.001	5

SSn = acid soluble tin
nd = not determined

4.3 Dimension Stone

Of all areas visited during field trips, no suitable dimension stone resources were found. This evaluation is based on the following criteria: access, size of joint-blocks and the absence of alteration or mineralisation.

5. CONCLUSIONS AND RECOMMENDATIONS

- 5.1 Comparison of the results of the 1996 chip sampling with the 1981 Renison results shows poor sampling precision. It is also apparent that the quartz-tourmaline alteration at the Globe Mine is heterogeneous with respect to the minerals of interest (Ag, Sb, Zn, Pb). Little variation was observed in hand specimens.

Channel sampling is generally preferred for this type of survey. However, due to the heterogeneous nature of the mineralisation, it is doubtful that channel sampling would have provided better precision.

- 5.2 Due to the cross-cut development passing out of the quartz-tourmaline alteration zone, it is recommended that the extension development be repeated in the stope. The water in the stope appears to be about 0.5 m. deep. This could be filled in with the waste rock from the previous development. Even if the second development passes out of the quartz-tourmaline mineralisation, a sample for ore assessment work could be obtained from the two developments.

- 5.3 From the sampling completed so far at Sweeney's Mine, the exposures on the surface in the open-cut (Sn, Zn, Ag), and in the adit near the cross-cut (Sn), hold the most interest. Collectively, they may represent a small resource suitable for a small operation. In particular, the soft, argillised alteration zone surrounding the quartz-tourmaline mineralisation should be very amenable to treatment.

- 5.4 There appears to be limited potential for dimension stone resources on the area covered by EL 59/94. The most accessible area is along the southern boundary of the EL. However, while access is good in terms of the close proximity of the Trial Harbour Road, site access is difficult because of the steepness of the terrain. Also, in this area the presence of alteration and mineralisation at most sites visited precludes any use for dimension stone purposes.

The best area for potential dimension stone quarries of the red Heemskirk Granite is the area between the Western Red Mining and Dunn's quarries. Both quarries are now disused. This area has the best access and is generally further removed from the known mineralisation at South Heemskirk.

- 5.6 All samples taken at the Globe Mine were also sent to Becquerel Laboratories, Lucas Heights NSW for neutron activation analysis (NAA). The results obtained are of little use due to neutron flux depression caused by boron in the samples (they have been included in Appendix 8.2 for reference only). They show poor

agreement with the AAS and XRF results reported by the Renison Lab. The Renison methods do have some limitations: Ag and Sb by aqua-regia digestion/AAS at >200 g/t Ag and > 0.4 % Sb should really be checked by alternative methods, because the results are probably low. Ag and Sb results for samples GLM003, GLM005 & GLM006 will therefore be checked.

Some samples from Sweeney's Mine and Anomaly 1 were also analysed by NAA in 1995 (see Annual Report 1996). They showed good agreement with AAS and XRF results reported by Renison. However, detection limits for some analytes on some samples were elevated due to increased background caused by high Sb and As.

It may be concluded from this that NAA is best suited to "clean" silicate rock-types, and has limited potential for evaluating known mineralisation in this area.

- 5.7 On the advice of Lindsay Newnham, and the results of this years work, it is proposed to relinquish the northern area of the current EL59/94, and retain the area between Sweeney's and the Globe mines, including anomalies 1 and 4, Agnew Grid.

6. PROPOSED WORK PROGRAM FOR 1997-98

6.1 Globe Mine

- Improve access to the stope and complete another 2 m. extension development in the cross-cut of No.1 adit.**
- complete petrography and preliminary ore assessment testwork.**
- mapping.**

6.2 Sweeney's Mine

- improve access to the mine area with a view to completing a costean at the open-cut and a cross-cut development in the adit.**
- complete petrography and preliminary ore assessment testwork.**
- mapping.**

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8. APPENDICES

8.1 Field Data Records

8.2 Assay Data

Renison Limited
Analytical Services

ACN 004 490 304
 Murchison Highway Renison Bell Tasmania 7469 Australia
 Postal: PO Box 20 Zeehan Tasmania 7469 Australia
 Telephone: (03) 64732732 Facsimile (03) 64732600

South Heemskirk Exploration

Attention: David Lane

Sample Identification:	Ag g/t	Bi %	SSn %	Cu %	Pb %	Zn %	Sb %	Ni %	Mo %	Cd g/t
SWM004	11	0.006	0.02	0.025	0.45	0.56	0.22	0.002	<0.001	25
SWM005	<1	0.007	<0.01	<0.001	0.004	0.016	0.004	0.001	<0.001	<1
SWM006	1	0.002	0.01	<0.001	0.012	0.034	0.003	<0.001	<0.001	1
SWM007	1	0.002	0.01	0.001	0.009	0.007	0.002	0.001	<0.001	1
SWM008	82	0.026	0.05	0.020	0.016	0.098	0.022	<0.001	<0.001	5
GLM001	21	0.002	<0.01	0.003	0.18	0.004	0.036	0.001	<0.001	1
GLM002	23	0.001	<0.01	0.001	0.056	0.005	0.030	<0.001	<0.001	1
GLM003	310	0.001	0.01	0.001	0.38	0.007	0.20	0.001	<0.001	<1
GLM004	113	0.002	<0.01	0.007	0.29	0.008	0.14	<0.001	<0.001	<1
GLM005	380	0.012	<0.01	0.054	0.79	0.024	0.31	<0.001	<0.001	<1
GLM006	640	0.002	0.01	0.074	2.09	0.042	0.91	0.001	<0.001	1
GLM007	52	0.003	<0.01	0.010	0.12	0.015	0.039	<0.001	<0.001	<1
GLM008	10	0.001	0.01	0.014	0.10	0.021	0.047	<0.001	<0.001	<1
GLM009	148	<0.001	<0.01	0.027	0.15	0.11	0.077	nd	nd	nd
GLM010	55	<0.001	<0.01	0.023	0.38	0.097	0.12	nd	nd	nd
GLM011	4	<0.001	<0.01	0.001	0.036	0.079	0.008	nd	nd	nd
Method:	A1	A1	A1	A1	A1	A1	A1	A1	A1	A1
Detection Limit:	1	0.001	0.01	0.001	0.001	0.001	0.001	0.001	0.001	1

Samples analysed as received.

SSn= acid soluble tin

nd = not determined

Authorised Signatory:



Date:

31/12/96

Renison Limited

Analytical Services

ACN 004 490 304
 Murchison Highway Renison Bell Tasmania 7469 Australia
 Postal: PO Box 20 Zeehan Tasmania 7469 Australia
 Telephone: (03) 64732732 Facsimile (03) 64732600

South Heemskirk Exploration

Attention: David Lane

Sample Identification:	Sn %	As %	Fe %	S %	Mn %	WO3 %	MgO %
SWM007	1.29	0.03	3.6	1.3	0.02	<0.01	0.6
SWM008	7.81	0.08	8.7	8.7	<0.01	0.04	0.1
GLM001	0.04	0.02	7.6	<0.1	0.05	0.01	0.7
GLM002	0.05	0.03	7.3	<0.1	0.06	0.01	0.7
GLM003	0.02	0.03	7.8	<0.1	0.09	0.02	1.3
GLM004	0.03	0.02	6.3	<0.1	0.06	<0.01	0.9
GLM005	0.03	0.04	8.7	0.1	0.07	0.01	0.4
GLM006	0.13	0.11	9.2	0.6	0.09	0.01	0.6
GLM007	0.03	0.01	5.5	<0.1	0.04	<0.01	0.4
GLM008	0.04	0.05	8.9	0.2	0.44	0.02	0.6
GLM009	0.04	0.03	8.7	0.7	1.49	0.01	0.3
GLM010	0.01	0.01	6.6	0.4	0.57	<0.01	0.3
GLM011	0.03	0.02	8.5	0.2	0.78	0.01	0.3
Method:	B4	B4	B4	B4	B4	B4	B4
Detection Limit:	0.01	0.01	0.1	0.1	0.01	0.01	0.1

Samples analysed as received.

Authorised Signatory: J. M. Bailey

Date: 31/12/96

NEUTRON ACTIVATION ANALYSIS

NEUTRON ACTIVATION ANALYSIS REPORT

Date: 09-01-97

DAVID LANE.

BECQUEREL JOB# 259

Page 1 of 2

NOTE:- A NEGATIVE SIGN INDICATES "LESS THAN".

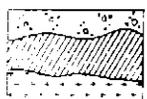
- RESULTS ARE IN PARTS PER MILLION (ppm) UNLESS OTHERWISE INDICATED.

- LARGE CORRECTION NECESSARY TO ACCOUNT FOR NEUTRON FLUX DEPRESSION DUE TO B IN THE SAMPLE. PLEASE INDICATE B-RICH SAMPLES IN FUTURE; SUCH SAMPLES ARE BEST ANALYSED IN SMALLER ALIQUOTS.

- ELEVATED DETECTION LIMITS FOR SOME ELEMENTS IN SAMPLES WITH HIGH Sb DUE TO INCREASED BACKGROUND ACTIVITY.

- K NOT ABLE TO BE DETERMINED (ND) IN SAMPLE # GLM006 DUE TO EXTRA DECAY TIME NEEDED BEFORE COUNTING DUE TO HIGH Sb.

ELEMENT	DL #	GLM001	GLM002	GLM003	GLM004	GLM005	GLM006	GLM007	GLM008	GLM009	GLM010
		(30.666g)	(29.993g)	(29.752g)	(29.050g)	(29.248g)	(29.879g)	(30.865g)	(29.967g)	(30.198g)	(30.386g)
ANTIMONY	.2	142.00	104.00	608.00	479.00	905.00	2590.00	153.00	162.00	337.00	537.00
ARSENIC	1.0	55.60	38.40	111.00	95.00	94.20	351.00	21.80	118.00	116.00	83.20
BARIUM	100.0	-100.0	-100.0	-100.0	-100.0	-100.0	-200.0	-100.0	-100.0	-100.0	-100.0
BROMINE	2.0	-2.00	-2.00	-4.00	-2.00	-4.00	-10.00	-2.00	-2.00	-2.00	-4.00
CERIUM	2.0	2.74	-2.00	2.99	3.65	3.25	5.54	16.90	6.35	7.91	4.87
CAESIUM	1.0	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	1.18	-1.00
CHROMIUM	5.0	39.6	64.3	27.9	65.3	21.4	47.9	55.0	70.1	47.5	57.1
COBALT	1.0	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
EUROPIUM	.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
GOLD, ppb	5.0	-5.0	-5.0	-5.0	-5.0	-10.0	-20.0	-5.0	-5.0	-5.0	-5.0
HAFNIUM	.5	3.77	2.49	1.92	2.07	1.95	-1.00	2.73	4.52	2.50	2.70
IRIDIUM, ppb	20.0	-20.0	-20.0	-20.0	-20.0	-20.0	-30.0	-20.0	-20.0	-20.0	-20.0
IRON, %	.05	2.57	2.03	1.85	1.73	2.11	2.19	1.84	2.56	3.13	2.57
LANTHANUM	.50	1.08	0.74	1.02	2.76	2.40	3.07	9.13	2.48	4.15	4.23
LUTETIUM	.20	0.22	0.23	-0.20	-0.20	-0.20	-0.20	0.21	-0.20	-0.20	-0.20
MOLYBDENUM	5.0	-5.0	-5.0	-5.0	-5.0	-10.0	-20.0	-5.0	-5.0	-5.0	-5.0
POTASSIUM, %	.2	-0.50	-0.50	-1.00	0.86	-2.00	ND	0.61	-0.50	-1.00	-1.00
RUBIDIUM	20.0	-20.0	-20.0	-20.0	-20.0	-20.0	26.0	28.9	-20.0	40.1	-20.0
SMARIUM	.20	0.29	0.21	0.62	0.47	0.44	0.95	1.64	0.56	1.03	0.89
SCANDIUM	.1	2.55	2.17	1.57	1.89	1.54	2.22	2.12	1.66	1.39	1.66
SELENIUM	5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-10.0	-5.0	-5.0	-5.0	-5.0
SILVER	5.0	-5.0	-5.0	63.4	24.4	61.3	196.0	15.9	-5.0	51.6	13.5
SODIUM, %	.010	0.262	0.203	0.212	0.191	0.207	0.690	0.167	0.210	0.169	0.197
TANTALUM	1.0	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	1.68	1.64	1.47	-1.00
TELLURIUM	5.0	-5.0	-5.0	-5.0	-5.0	-10.0	-15.0	-5.0	-5.0	-5.0	-5.0
THORIUM	.5	1.30	1.19	2.03	3.89	2.33	4.28	10.50	4.62	17.80	15.60
TUNGSTEN	2.0	4.21	3.98	6.11	5.73	8.58	9.80	6.90	6.32	6.57	13.50
URANIUM	2.0	-2.00	-2.00	-2.00	-2.00	-2.00	-6.00	-2.00	5.01	2.85	-2.00
YTTERBIUM	.50	1.37	1.34	-0.50	0.77	-0.50	-0.50	1.26	0.90	0.87	1.00
ZINC	100.0	-100.0	-100.0	-100.0	-100.0	-100.0	163.0	-100.0	-100.0	430.0	449.0


BQ
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P M B 1

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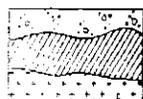
NEUTRON ACTIVATION ANALYSIS

BECQUEREL JOB# 259

Page 2 of 2

 ELEMENT DL # GLM011
(30.084g)

ANTIMONY	.2	43.00
ARSENIC	1.0	43.70
BARIUM	100.0	-100.0
BROMINE	2.0	-2.00
CERIUM	2.0	9.61
CAESIUM	1.0	1.97
CHROMIUM	5.0	60.0
COBALT	1.0	-1.00
EUROPIUM	.50	-0.50
GOLD, ppb	5.0	-5.0
HAFNIUM	.5	3.09
IRIDIUM, ppb	20.0	-20.0
IRON, %	.05	3.20
LANTHANUM	.50	5.39
LUTETIUM	.20	0.21
MOLYBDENUM	5.0	-5.0
POTASSIUM, %	.2	-0.20
RUBIDIUM	20.0	40.7
SAMARIUM	.20	1.13
SCANDIUM	.1	2.25
SELENIUM	5.0	-5.0
SILVER	5.0	-5.0
SODIUM, %	.010	0.252
TANTALUM	1.0	1.70
TELLURIUM	5.0	-5.0
THORIUM	.5	14.50
TUNGSTEN	2.0	5.79
URANIUM	2.0	2.81
TERBIUM	.50	1.26
ZINC	100.0	354.0

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MENAI, NSW 2234

8.4 Newnham, L.A.; 1996; EL59/94 HEEMSKIRK AREA, WESTERN
TASMANIA, REVIEW OF EXISTING DATA

NEUNHAM EXPLORATION & MINING SERVICES

E.L. 59/94
HEEMSKIRK AREA
WESTERN TASMANIA

Appendix 1 of 96 3463

REVIEW OF EXISTING DATA

Prepared for:
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By:



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September 4, 1996

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3. **FEDERATION AREA**
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 - 3.2 **Colemans**
 - 3.3 **Western Federation**
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 - 3.5 **Eastern Workings**
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 - 3.7 **Drill Testing I.P. Anomalies**
 - 3.8 **Conclusions**
4. **AGNEW AREA**
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 - 4.5 **Anomaly 4**
 - 4.6 **Other Areas**
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Fig 6:	Federation Geophysics & Drilling	1: 5,000
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Fig 8:	Colemans Sampling	1: 500
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1. PREFACE

The objectives of this report are, firstly, to collate and review existing data within E.L. 59/94 and, secondly, identify opportunities for further exploration and possible mine development which may have been overlooked by previous workers.

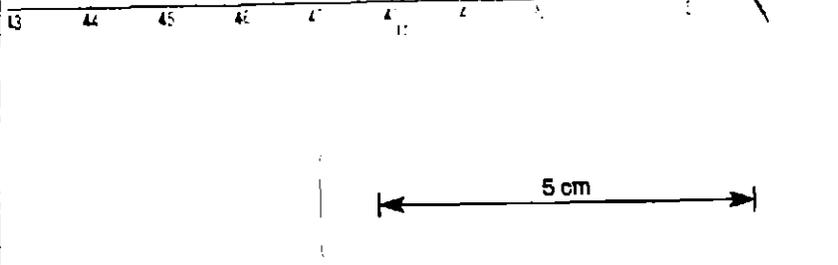
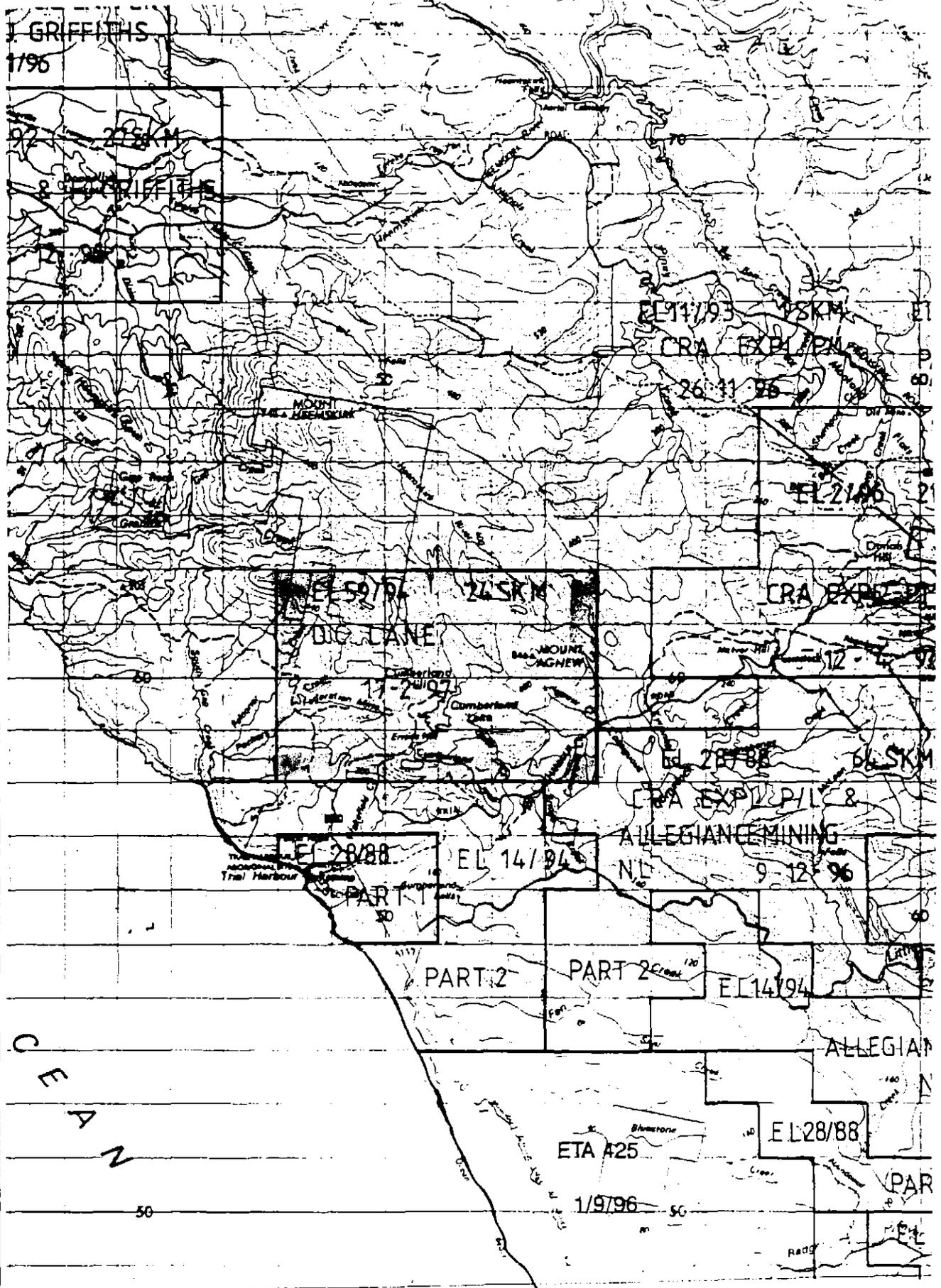
The report has not been prepared for inclusion in any public document concerning the assessment or valuation of mineral resources or potential of E.L. 59/94.

Existing data largely falls within two contiguous but somewhat different geological settings:

- **Federation Plateau**, incorporating groups of old workings such as Colemans, Black Face, Waxman & Westons, Fowler and Dunns and Geasons.
- **Mt Agnew Area**, incorporating the stanniferous sulfide deposits at Sweeneys, Globe, Anomaly 1 and Anomaly 4.

The volume of existing data on the area is large, and the more significant contributions are listed in the bibliography. This report, at best, can only summarise this work.

The maps attached are direct prints of plans from various RGC reports held on open file at Mineral Resources Tasmania, with some free-hand annotation by this writer.



NEWNHAM EXPLORATION AND MINING SERVICES		
E.L. 59/94		
HEEMSKIRK PROJECT		
LOCATION PLAN		
0 km	4	Scale 1:100,000
Drawn: LAN	Date: Sept 96	Figure: 1

2. SUMMARY

E.L. 59/94 is underlain by a complex segment of the Heemskirk Granite batholith, in which alteration and accompanying mineralisation is widespread.

In basic terms, a coarse grained Devonian-Carboniferous white granite has intruded a slightly older coarse grained red granite. Where these granites intermixed, fractionation was complex with the development of a range of finer grained varieties (present as dykes and sills), breccia zones (both hydrothermal and collapse), and extensive zones of alteration developed as a result of migrating and accumulating hydrothermal fluids.

On the **Federation Plateau**, tourmalinisation is pervasive and is frequently accompanied by cassiterite mineralisation. Numerous small mines were developed in the area early this century, and whilst tin grades were often locally spectacular, no substantive deposit was developed.

In the 1970s-80s the area was assessed for its low grade "porphyry tin" potential by way of a variety of geophysical, geochemical and drilling programs. Twenty (20) cored drill holes tested seven prospective areas on the plateau. The results suggest there is scope for small high grade tin deposits to be present but limited opportunities for large deposits.

Most encouraging results were obtained in a large zone of sulfidic alteration on the western shores of Lake Cumberland in the vicinity of the Eastern Workings and Waxman & Westons Workings. The zone was tested with six (6) cored holes, one of which intersected 13 m. 0.95 % Zn, and another 4 m. 0.56 % Sn and 3 m. 0.48 % Sn. This zone may extend to the West in the general direction of the Central Workings and remains untested by drilling in that direction.

In the **Agnew Area**, on the rugged SE escarpment of the Federation Plateau, argillic, sericitic and sulfidic alteration is pervasive. A series of alteration 'nodes' has been identified in a three kilometre linear zone trending NE across the flanks of Mt Agnew. Small exploratory style mines were developed at Sweeneys and Globe on the western and eastern ends respectively of this zone.

Geophysical and geochemical surveys have identified two other major anomalies between Sweeneys and Globe, known as Anomaly 1 and Anomaly 2.

Thirty (30) cored drill holes have been completed into these four principal centres of alteration. Combined with the results of underground channel sampling at Sweeneys and Globe, they confirm the presence in each area of substantial bodies of complex polymetallic stanniferous sulfides and significant zones of cassiterite mineralisation.

Tin is present as both cassiterite and stannite and copper, lead, zinc, silver and antimony are present in a range of sulfides including sphalerite, stannite, chalcopyrite, galena, tetrahedrite and boulangerite.

The sulfide body developed underground at Globe averages in excess of 100 g/t Ag and appears open to the North and down plunge to the NE.

Anomaly 4 has only been tested by one drill hole which intersected sulfide mineralisation similar to Sweeneys and Globe.

Anomaly 1 drilling located zones of both Sn-Zn-Cu-Ag sulfide mineralisation and cassiterite mineralisation. The orientation of these units is unclear but they are certainly open in several directions.

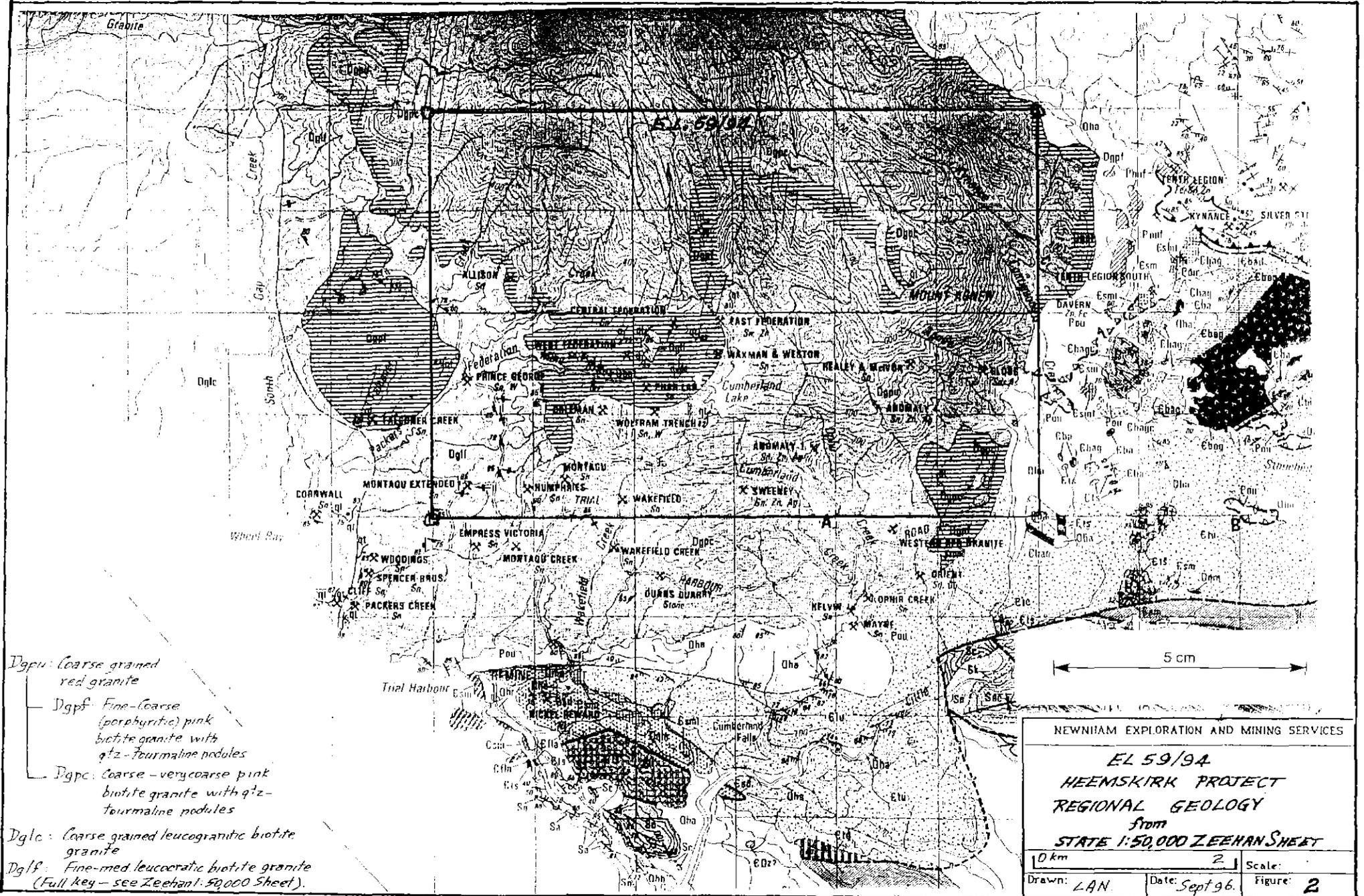
At Sweeneys, two zones of complex polymetallic sulfides have been located. The dimensions of the flat shallow zone are limited but the steep, deeper zone is open in several directions.

Collectively, the stanniferous sulfide deposits in the Agnew area have the potential to contain a substantial tonnage of mineralisation.

Further drilling would be necessary to quantify this potential as all four known deposits remain open for extension definition.

The economic worth of the deposits will depend on the metallurgical concentration and marketability of the complex sulfides present. Little work has been done on this to date and it is recommended some test work be undertaken prior to further drill testing.

A fresh bulk sample for such work could be acquired by extending the crosscut in the No. 1 Adit on the Globe Mine. This zone may not be representative of sulfide zones in the other deposits, but it would be a convenient place to start.



Dgpr: Coarse grained red granite

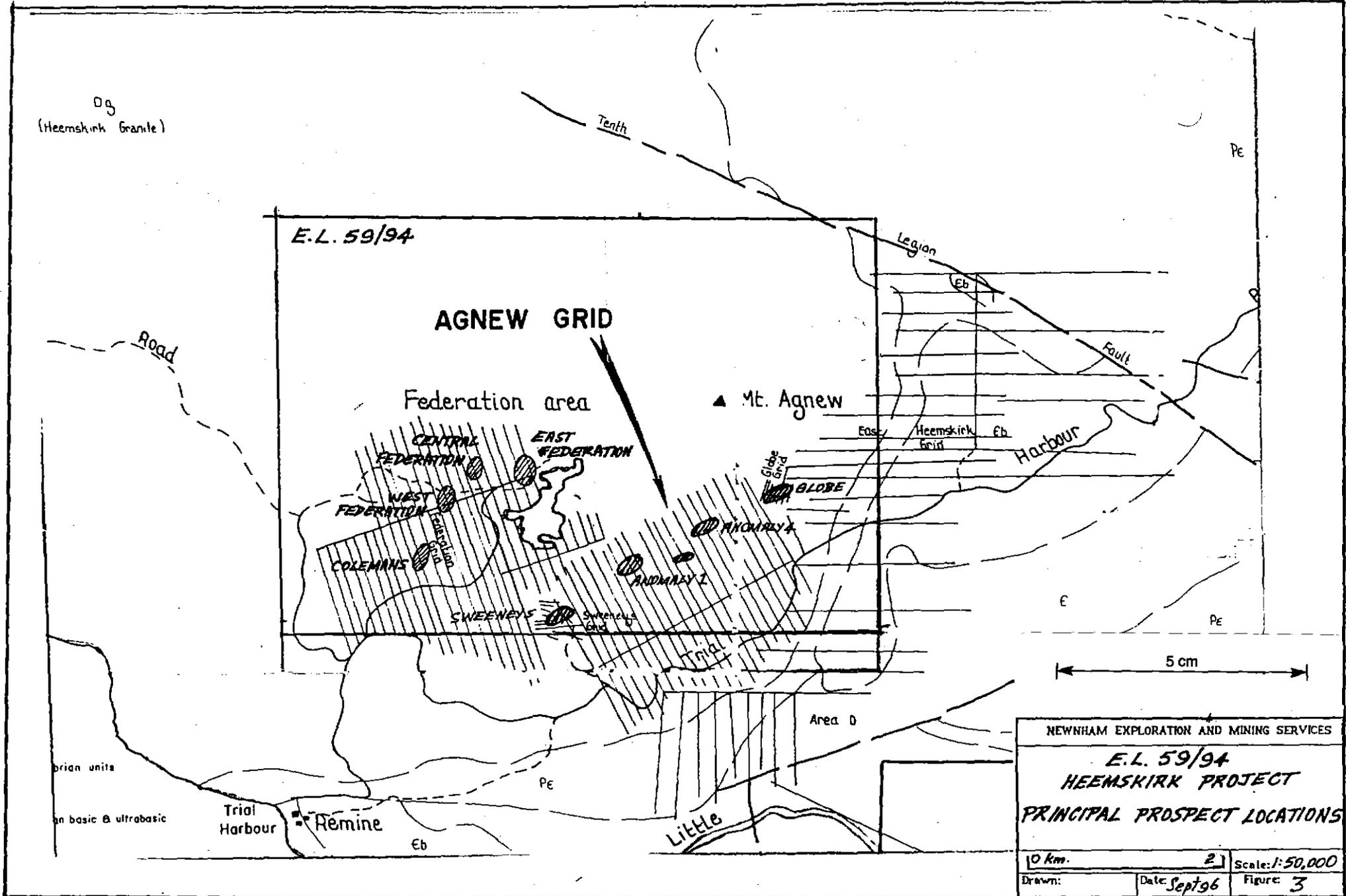
Dgpf: Fine-coarse (porphyritic) pink biotite granite with qtz-tourmaline nodules

Dgpc: Coarse-verycoarse pink biotite granite with qtz-tourmaline nodules

Dglc: Coarse grained leucogranitic biotite granite

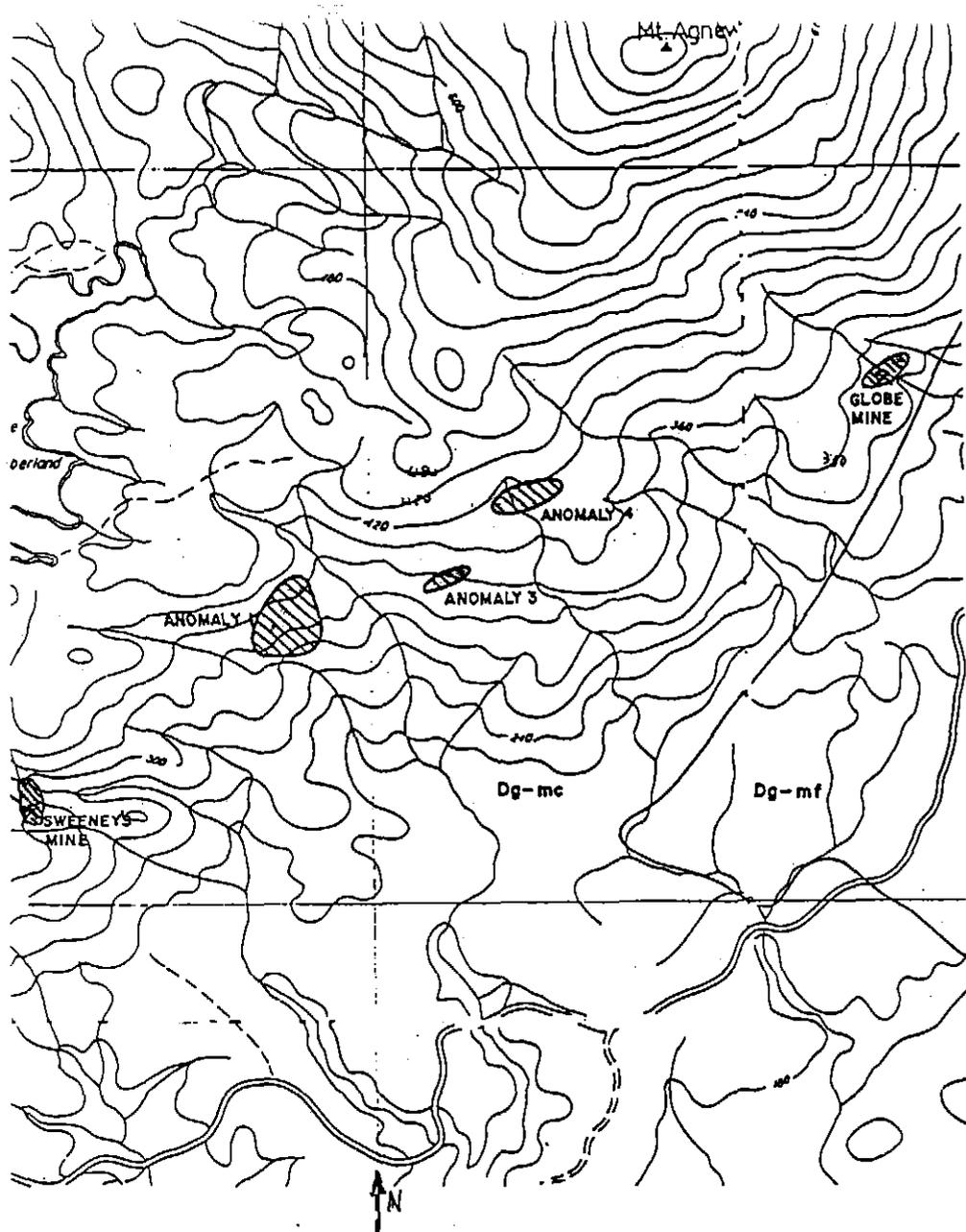
Dglf: Fine-med leucocratic biotite granite (Full key - see Zeehan 1:50,000 Sheet)

306039



NEWHAM EXPLORATION AND MINING SERVICES	
E.L. 59/94	
HEEMSKIRK PROJECT	
PRINCIPAL PROSPECT LOCATIONS	
10 km.	2
Scale: 1:50,000	
Drawn:	Date: Sept 96 Figure: 3

366040



Dg-mf MEDIUM-FINE GRAINED NON-PORPHYRIFIC GRANITE

Dg-mc COARSE-MEDIUM GRAINED GRAVEL PORPHYRIFIC GRANITE

5 cm

NEWNHAM EXPLORATION AND MINING SERVICES		
<i>E.L. 59/94</i>		
HEEMSKIRK PROJECT		
AGNEW AREA		
POLYMETALLIC SULFIDE DEPOSITS		
0m	800	Scale: 1:20
Drawn: .	Date: <i>Sept 96</i>	Figure: <i>4</i>

3. FEDERATION AREA

3.1 General:

The Federation area was historically mined for cassiterite, typically associated with coarse dark tourmaline developed in complex alteration zones and structures close to the contact between coarse-grained red granite and various phases of finer-grained white granite.

Workings were extensive but not deep and the collective production was small - probably less than 200 tonnes tin.

In the mid 1970s, the EZ Company undertook some exploration and drilling on the plateau searching for extension of known deposits. Results of this work were disappointing.

In the mid 1970s, RGC commenced a 10-year assessment of the region, primarily searching for large tonnage low grade open cuttable deposits of the "porphyry tin" type. Their work concentrated on the southern section of the Heemskirk Granite including that area now covered by E.L. 59/94. They established two major grid systems including the Federation Grid and completed various I.P., ground magnetic, geological and geochemical surveys on that grid. A total of nineteen (19) cored drill holes were completed, testing both the depth extensions of old workings and several I.P. anomalies which were considered to reflect either disseminated sulfides or clay alteration zones.

Summary results of this drilling are discussed below and drill logs appear in the Appendix.

3.2 Colemans:

At Colemans, a shallow body of altered granite carried a high concentration of stanniferous tourmaline nodules and greisen veins.

The nodules were notable for their occasional very high tin content.

The deposit was prospected by way of two adits and a number of shallow cuts, winzes and rises.

In 1945, the Mt. Lyell Mining & Railway Company channel sampled all the accessible workings. The lower tunnel was inaccessible.

Results were generally disappointing apart from several grab samples in shallow trenches and rises around the "eastern" and "western" workings.

In 1965-66 the E.Z. Company drilled three cored holes (THP 115, THP 117 and THP 119) testing both between and to the east of existing workings. Results for all elements assayed were very low.

RGC completed I.P. and drilling programs in the area in the late 1970s-early 80s. Gradient array I.P. surveys defined a moderate anomaly around the former workings and three cored holes were drilled to test this anomaly (FED 6, FED 11, FED 13).

The best intersection was in FED 6 which intersected a massive fine grained dark green-black chlorite-tourmaline altered granite with trace pyrite between 20-26.0 m. The interval from 20-24 m. assayed 0.43 % Sn with the best result being 1 m. 1.02 % Sn.

The interval lies 60 m. SE of the main workings and is of a similar geological nature to these. This would suggest the possibility of a sill-like body dipping gently to the SE. However, adjacent E.Z. holes THP 117 and THP 119 do not support this.

In summary, drilling to date at Colemans suggests that tin mineralisation is restricted to a sill-like zone of tourmaline alteration in coarse grained granite. There is little evidence to suggest this zone extends substantially beyond the former mine workings.

3.3 West Federation:

The West Federation Workings consist of a group of small open cuts, tunnels and shafts either side of a NW-SE structure known as the Cross Lode. Workings on the western side are known as Fowler & Dunns and on the eastern side as Geasons.

RGC tested beneath Fowler & Dunns with one (1) cored hole, Geasons with three (3) holes and the Cross Lode with one (1) hole.

FED 2: Tested Fowler & Dunns. Only minor tin was recorded in very thin greisen veins.

FED 10: Tested beneath Geasons workings. A zone of intense alteration and tourmalinisation was intersected between 5-42.0 m. and core losses were severe (15 m. lost).

Some tin and zinc mineralisation were recorded in this zone of altered fine grained white granite:

14-15 m. 1 m. 1.91 % Sn < 0.1 % Zn

18-19 m. 1 m. 1.74 % Sn < 0.1 % Zn

29-37 m. 8 m. < 0.1 % Sn 0.62 % Zn 10 g/t Ag

FED 14: Tested Geasons down dip to the SE. Intersected a 13 m. hematite alteration zone between 62-75 m. < 0.04 % Sn, 3 g/t Ag. This included 68-69 m. 1 m. 0.16 % Sn, < 0.1 % Zn, 10 g/t Ag.

FED 15: Tested Geasons to the East, and intersected only minor mineralisation and alteration.

FED 16: Tested the Cross Lode between Fowler & Dunns, and Geasons. It intersected a tourmaline-quartz alteration zone between 48.1-51.3 m. but assays were low.

The above drilling suggests the West Federation workings consist of two small altered breccia zones developed either side of a steeply dipping cross-cutting feeder structure. Some minor cassiterite and sphalerite was developed at Geasons, to the East of this structure, but appears limited in extent. Scope remains, however, for possible extensions to the NE.

In summary, potential for substantial extensions of the alteration zones either side of the cross-fault appears limited. Drilling grades to date are generally disappointing. Some scope remains NE of Geasons.

3.4 Central Federation:

The Central Federation workings were some of the largest on the Federation Plateau. A number of adits, shafts, trenches and open cuts (Black Face) were developed on a quartz-tourmaline breccia zone developed on the intersection of two steeply dipping structures.

Three drill holes have been drilled to test this breccia zone at depth.

TP 123: Drilled by E.Z. in 1966, intersected the Black Face lode between 110-122 m. but Sn values were < 0.1%.

FED 1: Drilled by RGC intersected the tourmalinised Black Face lode between 77-95 m. but tin values were <0.1 %.

Higher in the hole, 67.5-69.5 m. averaged 0.65 % Sn with Zn < 0.2 %.

FED 9: Designed to test the northern depth extension of the Black Face intersected it between 39-57 m. Tin values were low, with the best being 40-41 m., 1 m. 0.44 % Sn.

Results from the Central Federation are disappointing and would suggest that a substantial amount of early work was undertaken on a geologically interesting structure, which unfortunately carried low tin and base metal values.

In summary, work to date suggests there is low potential at Central Federation to locate significant tonnages of higher grade mineralisation.

3.5 Eastern Workings:

Two (2) holes (FED 8, FED 17) drilled to test a broad I.P. anomaly co-incident with eastern workings, consisting of several trenches, short adit and shallow shaft.

FED 8 was drilled beneath the workings and intersected a strongly altered zone in the top of the white granite between 35-100 m. Tin values were low (best being 1 m. 0.2 % Sn). However, of note was a zone of significant sphalerite mineralisation between 57.7-70.7 m. which assayed 13 m. 0.95 % Zn.

Within that zinc-rich zone, there were no notably higher grade sections (best 1 m. 3.05 % Zn). Assays for other elements were very low.

Geophysical interpretation suggested the Zn rich alteration zone in FED 8 dipped to the north. Hence **FED 17** was drilled 80 m. to the north to test this theory.

Two poorly-developed alteration zones carrying only very minor Sn and Zn were intersected, suggesting that either FED 8 was drilled close to the northern margin of the zone or the zone is very localised. No follow up drilling was undertaken to the South.

In Summary, possible extensions of the Zn rich alteration zone intersected in FED 8 beneath the Eastern Workings have not been tested to the South towards Waxman & Westons workings.

3.6 Waxman & Westons: (FED 5, 12, 18, 19)

At Waxman & Westons, a number of short adits, shallow shafts and trenches have been developed on an alteration zone in the top of the white granites, carrying pyrite, hematite and cassiterite.

RGC drilled four (4) cored holes to further test this zone.

FED 5: Intersected a very broad, intensely altered zone similar to the alteration style at Sweeneys. Low grade tin mineralisation was widespread throughout the hole but Zn values were low.

Best intervals were:

103-107 m.	4 m.	0.56 % Sn
181-184 m.	3 m.	0.48 % Sn

FED 12: Was drilled beneath FED 5. Again, a very wide, intense pyrite-hematite alteration zone affecting both red and white granites was intersected from 130-185 m. and 206-285 m.

Best intersections were:

179-180 m.	1 m.	0.28 % Sn
217-227 m.	10 m.	0.21 % Sn

Encouraged by the physical size of the alteration zone, RGC decided to test its lateral extent West and East with two (2) further holes.

FED 18: was drilled 75 m. West of FED 5, 12 to test the extension of the alteration zone in that direction. The granite intersected (mainly fine grained varieties) was altered from 14-222 m. Tin values were very low (best 1 m. 0.15 % Sn) but Zn was anomalous from 155-175 m.

FED 19: Was drilled 90 m. East of FED 5, 12 to test for eastern extensions of the altered zone.

The alteration zone was thinner and weaker with only minor (trace) mineralisation.

RGC regarded (correctly) the alteration zones at the Eastern Workings and Waxman & Westons as possibly

being part of the same large alteration zone in a complex mixture of white and red granite phases near the base of the main red granite body.

They concluded:

- Alteration was diminishing North of the Eastern Workings and East of Waxman & Westons
- Tin values were generally very low
- The anomalous zinc mineralisation in the Eastern Workings did not continue South to Waxman & Westons. However, FED 18 was Zn anomalous in part.

One option that RGC did not pursue was that the high Zn alteration zone extended West and SW of the Eastern Workings.

In summary, a very large pyritic alteration zone exists in the vicinity of the Eastern Workings and Waxman & Westons. It has been tested by six (6) cored holes which showed the zone to be very low in tin but containing significant Zn values in places. Possible extensions of these Zn intervals to the West are untested by drilling.

3.7 Drill Testing I.P. Anomalies:

In the late 1970s, RGC completed a gradient array I.P. survey over the Federation Area in order to identify large greisen zone carrying minor amounts of pyrite and other sulfides. It was thought that stanniferous deposits would most likely be developed in such areas.

In addition to a number of anomalies associated with former mine workings, several anomalies with no associated workings were identified and several of these were drill tested.

DDH FED 3: Drilled on the SW shore of Lake Cumberland, this vertical hole was designed to drill test a modest changeability anomaly. Minor pyrite associated with narrow greisen zones in coarse grained red granite was intersected. Hole not assayed.

DDH FED 4: Drilled on an I.P. anomaly 250 m. WSW of FED 3. Minor sulfides (pyrite, arsenopyrite) were encountered within narrow altered zones in coarse grained red granite. Best assay was 0.9 m. 0.16 % Sn, 0.13 % Cu, 0.30 % As within an altered zone between 35-40 m. Interestingly, this 5 m. interval averaged 0.4 % As.

DDH FED 7: Drilled 500 m. N.W. of the main Central Federation workings to test a moderate I.P. anomaly. The top 60 m. of this hole intersected a broad zone of variably altered red granite before passing into fresher white granite.

Tin, tungsten and base metal values were low, apart from the interval 58.7-61.3 m., which was a contact zone between altered red and white granites, comprised of quartz, tourmaline, topaz, pyrite and mica. Best assay was 0.5 m. 0.83 % Sn.

3.8 Conclusions:

Mining records and subsequent mapping and sampling of old workings suggest that the near surface known tin deposits on the Federation Plateau are very localised and small. Grab sampling of "specimen" type outcrops can return very high tin values, but these outcrops are limited in extent.

Drilling completed to date around and beneath the principal workings on the plateau has failed to locate any mineralisation which would encourage further drilling in the area.

Alteration zones defined by I.P. surveys and subsequently drill tested are generally shallow, discontinuous and low grade.

One exception to this is the large alteration zone identified between the Eastern Workings and Waxman & Westons. This zone carries significant sphalerite in the northern section (FED 8, 13 m. 0.95 % Zn) and modest but significant tin to the South (FED 5, 4 m. 0.56 % Sn and 3 m. 0.48 % Sn). This zone has potential to extend to the West towards the Central Workings and remains drill untested in that direction.

In summary, on the Federation Plateau, a zone of mineralisation considered worthy of further evaluation is the Sn-Zn alteration zone between the Eastern Workings and Waxman & Westons. The mineralisation identified by drilling may extend to the West.

4. AGNEW AREA

4.1 General:

The Agnew or South Heemskirk area is underlain by a complex, multiphase granitic batholith. Hydrothermal activity and alteration associated with late stage differentiates is widespread. Prospecting in the area was widespread and resulted in the location of a number of deposits such as the Globe and Sweeneys Mines which were developed on outcropping stanniferous complex sulfide bodies formed in granite.

In the late 1970s, RGC commenced systematic exploration in the area for tin deposits. Encouraged by sampling of the Sweeneys workings, they established a large grid of traverse lines over the area (Agnew Grid) and completed various I.P. magnetic and geochemical surveys.

A series of anomalies was defined, principal of which were Sweeneys, Anomaly 1, Anomaly 3, Anomaly 4 and Globe. To test these anomalies, RGC developed ground and helicopter access into the region and drilled thirty (30) cored holes and sampled all accessible workings.

The results of this work are summarised below.

4.2 Sweeneys:

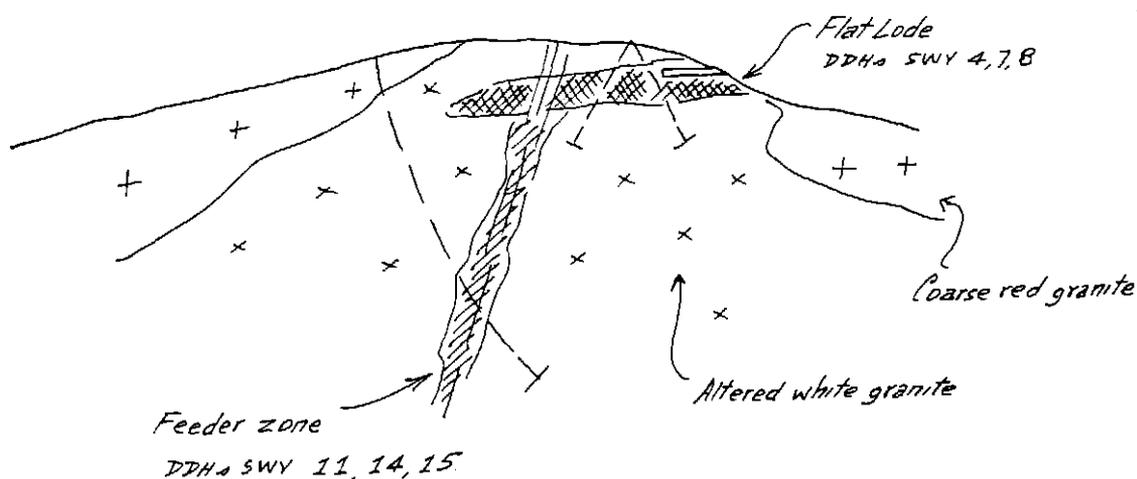
Encouraged by the results of their adit and trench sampling at the old Sweeney Mine, RGC completed eighteen (18) cored holes in 1977-78, in an attempt to trace the mineralisation at depth.

Six (6) of these holes intersected significant stanniferous sulfide mineralisation. The other 12 holes missed the mineralisation, largely because of its most confusing morphology.

RGC, quite justifiably, was attempting to site holes on the premise that the mineralisation occurred in one single body. In hindsight, the results of the 18 holes can be interpreted to suggest that there are, in fact, two concentrations of mineralisation:

- a flat dipping near surface zone, possibly formed by entrapment in a tight cupola at the top of the intruding white granite (surface workings, DDHs SWY 4, 7, 8.)
- a steeply dipping E-W structural zone which acted as a feeder into the cupola (SWY 11, 14, 15).

This interpretation is shown schematically in the sketch below:



On the basis of this interpretation, the extent of the flat lying body is limited by adjacent drill holes; viz, SWY 5 to the West, SWY 10 to the South, SWY 1, 6 to the North and SWY 11, 16 to the East.

The limits of the steep dipping feeder body are not as well-defined. Holes SWY 12, 13, 17 would not have intersected the zone. Hole SWY 18 intersected some weak mineralisation which may represent the eastern extension of the zone. SWY 10 may have intersected the western extension at shallow depth or it may have been drilled entirely in the HW of the zone.

It is probable that the steep zone has a SE plunge, (due to its relationship with the flat zone) in which case, it would be open both down plunge and along strike from existing drilling.

The mineralogical assemblages in the two deposits are complex and variable.

Mineralogical studies by RGC and a close study of assay results suggest the following are present:

- **tin** as both fine cassiterite and stannite. The proportion of tin present as stannite is somewhat higher in the steep zone than in the flat zone.
- **copper** in stannite, chalcopyrite and bournonite, tetrahedrite.
- **lead** as bournonite, boulangerite and galena.
- **zinc** mainly as dark sphalerite but minor amounts in tetrahedrite.
- **silver** in stannite, chalcopyrite, tetrahedrite, (freibergite) galena and sphalerite.
- **arsenic** in arsenopyrite and tennantite. The As content of the steeper body is substantially higher than the flatter body.
- **sulfur** in all the above mentioned sulfides together with pyrite and pyrrhotite. Again, the steeper body is higher in sulfur than the flat body.

With the base metals spread around amongst a variety of sulfide minerals, it is clear that to produce anything

other than a general concentrate by flotation means would be difficult.

It might be possible to separate specific base and precious metals from a general sulfide concentrate by other means; eg, pyrometallurgical applications, and this warrants further investigation.

In summary, drilling at Swceneys has located two interconnected stanniferous polymetallic sulfide deposits - one flat lying and one steeply dipping. Further drilling is required to more fully define potential tonnages and grades.

Mineralogy is complex and further metallurgical work would be required to identify possible routes for upgrading the mineralisation into saleable concentrates.

	m.	% Total Sn	% Acid Sol Sn	% Cu	% Zn	g/t Ag	% As	% S	Comment
Flat Zone:									
SWY 4	51	0.50	0.015	0.05	2.70	14	0.19	8.2	Difficult to high grade; some narrow high Sn & Zn zones
SWY 7	38	0.75	0.029	0.11	2.84	31	0.16	9.6	Most of the tin in HW section; sig. Sb, Zn scattered throughout
SWY 8	32	0.41	0.081	0.10	1.03	23	0.10	8.3	Difficult to high grade; highest grade zone lies in HW of Sn zone
Steep Zone:									
SWY 11	23	1.17	0.80	1.19	1.73	122	1.25	18.8	High stannite, arsenopyrite, and S; difficult to high grade
SWY 14	23	0.27	0.17	0.25	0.52	42	0.8	14.8	Difficult to high grade; low grade throughout; significant Sb
SWY 15	31	0.62	0.09	0.19	1.92	31	0.35	11.3	Significant Sb; some high grade Sn zones.

Table 1: Sweeneys Mine Intersections

4.3 Globe Mine:

The Globe Mine is located in the Heemskirk Granite close to its contact with Precambrian sediments. It consists of three adits, shaft and a trench.

It was developed beneath an extensive outcrop area of argillic alteration. Adits 1 and 3 intersected a broad zone of intense quartz-tourmaline-sulfide alteration, with the sulfides consisting mainly of pyrite-galena-sphalerite.

It was thought that this alteration zone was controlled by a shallow East dipping joint set. The main alteration zone is poorly exposed on surface.

In the early 1980s, RGC extended a grid of traverse lines over the area and undertook various I.P., magnetic, geological and geochemical programs.

They also mapped and sampled the adits. Significant Pb-Zn-Ag assays were obtained in Adits 1 and 3 and patchy, low level tin was recorded in all three adits.

Adit No. 1: intersected three zones of anomalous mineralisation within a very broad quartz tourmaline alteration zone.

The first was a 2 m. wide zone of sphalerite veining 27 m. from the portal. Four samples averaged 2.8 % Zn. However Cu, Pb, Sb, Ag values were relatively low.

At 55 m. from the portal, a second zone was intersected and driven on N-S. The South-crosscut quickly passed out of mineralisation but the North-crosscut was driven 20 m. in a zone 5-6 m. wide of quartz-tourmaline-sulfide alteration. RGC took 54 x 1 m. channel samples in this crosscut and they averaged 0.53 % Pb, 0.2 % Zn, 105 g/t Ag. Tin averaged < 0.1 %. Significant Sb assays in high Ag-Pb intervals suggests argentiferous tetrahedrite is present.

The third zone was Sn anomalous for the last 4 m. of the drive and the face assayed 0.9 % Sn.

Adit No. 3: was driven above No. 1.

A narrow vein carrying significant tin was intersected 5 m. from the portal. Abundant sphalerite was observed in part of this vein.

Due to poor ground conditions, this adit was only sampled to 15 m.

RGCs mapping suggests the silver rich alteration zone in No. 1 adit dips shallow to the East. If this is so, then it would either not have been intersected by No. 3 Adit or intersected near the inaccessible (unsampled) end.

Adit No. 2: was developed between No. 1 and No. 3 but was of insufficient length to reach the main mineralised zone.

RGCs outcrop and adit mapping suggest to this writer that the main mineralised zone intersected in the No. 1 Adit is dipping East, but possibly more steeply than claimed by RGC and it possibly thins to the South and has a north-easterly plunge. If this interpretation is correct then drill holes TH 11 and TH 10 would have clipped the edge of the alteration zone but missed the main body of mineralisation.

Hole TH 7 would not have reached the zone.

Given a slightly steeper dip and a NE plunge, TH 9 may have either not reached the zone or, alternatively, clipped it (if the dip is flatter) between 44-47 m. which averaged 3 m. 0.25 % Pb, 1.28 % Zn, 6 g/t Ag.

Hole TH 8 should have intersected the zone. The interval from 25-33 m. (8 m.) averaged 1.66 % Pb, 0.7 % Zn, 43 g/t Ag including a 2 m. interval near the base which averaged 4.1 % Pb, 0.59 % Zn, 90 g/t Ag.

The strike extent of this silver zone is unknown as the North-crosscut in the No. 1 Adit stopped in high Grade silver mineralisation.

Clearly, potential exists for this deposit to extend to the North and down plunge to the NE of the main existing workings - it remains untested in this area.

Discussion on the Economics of Globe Style Mineralisation:

In the absence of mineralogical data on the Globe, it is reasonable to speculate that the main minerals of economic interest present may be tetrahedrite, galena and sphalerite. The zinc may be in both sphalerite and tetrahedrite and the silver possibly in galena and tetrahedrite.

The value of material from this main zone is difficult to assess until the main components are quantified. If some bulk samples were taken from the crosscut in No. 1 Adit, they could be metallurgically assessed by laboratory flotation work. The value and saleability of the products so produced could then be determined.

In summary, at the Globe a Ag-Pb-Zn body, averaging in excess of 100 g/t Ag where sampled, has been exposed in underground development.

It has been inadequately drill tested and possibly extends to the North and down plunge to the NE of existing workings and drilling.

Metallurgical test work on bulk samples from the No. 1 Adit crosscut would assist with an improved understanding of the value and saleability of this mineralisation

4.4 Anomaly 1:

Anomaly 1 lies approximately 600 m. NE of Sweeneys. It was so named by RGC because it was a large I.P-geochemical anomaly defined by surveys on the Agnew Grid.

The anomaly occurs in dense jungle on the rugged slopes of Mt Agnew. RGC established a difficult access track into the area (walking or tracked vehicles only) and several helipads. Water for drilling has to be pumped from Lake Cumberland. Because of the rugged nature of the area, outcrop is extensively obscured by scree. Minor former alluvial tin workings and an old collapsed adit (?) are present.

The anomaly coincides with a large area of altered (sericitised) medium-coarse grained granite (altered red granite?) cut by a series of finer grained "aplitic" dykes which RGC interpreted as being near horizontal.

Within this large altered zone is a body of more intense argillic alteration, commonly accompanied by sulfides.

Several (?) zones of sulfide-cassiterite mineralisation have developed within this zone of more intense alteration.

RGC completed six (6) cored holes to test the alteration zones. Holes FED 20, 21, 24 intersected significant mineralisation in the strongly altered zone, whilst FED 22, 23, 25 intersected only minor mineralisation in weakly altered granite.

The location and orientation of RGCs drilling was influenced largely by geophysical interpretations and, to a lesser degree, by access difficulties. The resultant pattern of holes is somewhat random and the results arguably inconclusive.

The results of FED 20, 21, 24 are discussed in more detail below:

FED 20: intersected a strongly altered sulfidic zone between 30-67 m. (37 m.) which assayed:

30-67 m., 37 m.	0.26 % Sn (total)
	0.12 % acid soluble Sn
	0.21 % Cu
	0.03 % Pb
	0.86 % Zn
	33 g/t Ag
	7 % S

Within this broad interval was a semi-massive sulfide zone:

30-38 m., 8 m.	0.72 % Sn (total)
	0.47 % acid soluble Sn
	0.68 % Cu
	0.12 % Pb
	3.09 % Zn
	122 g/t Ag
	16 % S

This high grade unit occurs immediately above a fine grained dyke.

From the assay data, it is obvious that about 60% of the tin and copper present occurs as stannite. It is difficult to know where the Ag occurs - maybe in the stannite, chalcopryrite, galena, sphalerite or possibly tetrahedrite (no Sb assays).

The log describes the interval from 30.3-31.2 m. as massive sphalerite, pyrite, serpentine, chlorite. Such an assemblage may suggest a significant structure.

FED 21: was drilled to the East of FED 20 and intersected a completely different style of mineralisation:

34-50 m., 16 m.	0.54 % Sn (total)
	0.01 % acid soluble Sn
	0.01% Cu
	0.01 % Pb
	0.02 % Zn
	1 g/t Ag
	5 % S

Including:

41-49 m., 8 m.	0.82 % Sn
	10 % S

Clearly, this is a pyritic zone containing significant cassiterite, and with no clear spatial relationship to any fine grained "dyke" rocks.

FED 24: intersected a broad zone of altered fine-medium grained granite. Between 79-102 m., this interval carries spotty but significant cassiterite, averaging 0.55 % Sn. Base metal and sulfur values were generally very low with the exception of the interval 79.0-83 m, which averaged:

0.47 % Sn as cassiterite
0.9 % Zn
3% S

RGC interpreted their drilling results in terms of one large alteration zone which had limited dimensions.

However, it is clear that the three drill intercepts described above are mineralogically quite different from each other and may represent three quite distinct deposits within the one zone of alteration.

Further, alteration zones such as Anomaly 1 (and the Globe and Sweeneys) do not normally occur as simple isolated bodies, perched somewhere in the granite batholith. They are more likely to be developed adjacent to a major structure, or the intersection of a number of structures which acted as conduits for hydrothermal fluids distilling from the interaction and cooling of multi-phase granitic intrusions.

The complex intersection of such structures with favourable trap sites will determine the final geometry of any deposits formed. Almost any outcome is possible - flat, steep, disseminated, high grade veins, etc, etc.

It is suggested, therefore, that the intersections in FED 20, 21, 24 represent intersections in three separate bodies and the extent of these bodies has been inadequately tested. The intersections in FED 20, 21 appear to be the most interesting and require follow-up.

The problem is how best to do this without knowing the orientations of the deposits. One way is to drill more random holes as RGC did. A better way is to drill several holes close to each intersection which will then provide an orientation on the mineralisation.

In summary, a Sn-Zn-Cu-Ag zone of mineralisation in DDH FED 20 and a cassiterite zone in DDH FED 21 are considered worthy of further evaluation. This could best be done initially by drilling three close spaced cored holes adjacent to each intersection. This would establish the orientation of the mineralisation and provide a basis for further wider spaced drilling (see Fig 17).

4.5 Anomaly 4:

This I.P.-geochemical anomaly occurs between Anomaly 1 and Globe and reflects a zone of altered sulfidic granite.

Outcrop is virtually non-existent.

Geophysics and geochemistry suggest a general NE trend to the anomaly, and RGC drilled one hole FED 26 beneath the main anomaly, perpendicular to this trend.

FED 26: collared in altered (argillic) but mineralised granite and stayed in that until it entered a broad zone of more intense, sulfide alteration between 33-100 m. This zone is Zn anomalous, to 68 m. with some narrower intervals of significant tin mineralisation.

Of note are the following intervals:

32.7-46.7 m., 14 m. 2.6 % Zn

Ag is < 10 g/t, except for:

33.7-35.7 m., 2 m	0.48 % Sn (total)
	0.14 % acid soluble Sn
	0.78 % Cu
	1.37 % Pb
	4.6 % Zn
	333 g/t Ag
	3.6 % As
	7 % S

Deeper in the zone:

54.7-57.7 m., 3m. 0.92 % Sn as cassiterite, 0.46 % Zn

Mineralogical studies by RGC suggest a wide range of minerals were present in this alteration zone to account for the assays obtained including cassiterite, stannite, tetrahedrite, sphalerite, arsenopyrite, galena, chalcopyrite, pyrrhotite, pyrite, boulangerite.

This sulfide assemblage is similar to those at Sweeneys, Anomaly 1 and Globe and, if the commercial attractiveness of such mineralisation can be demonstrated, then Anomaly 4 should be tested further with drilling to the NE, SW and at depth below FED 26.

In summary, a broad zone of complex sulfide and tin mineralisation has been intersected by one drill hole. Significant Zn, Ag and Sn mineralisation was present, similar in nature to that at Sweeneys, Globe and No. 1 Anomaly.

4.6 Other Areas:

Several geophysical and geochemical anomalies on the Agnew Grid remain untested by drilling; eg, Anomaly 3 between Anomalies 1 and 4. They were not untested for technical reasons but, rather, because of changes in exploration strategy by RGC.

Any revival in exploration interest in the South Heemskirk area should take into account the untested potential of these anomalies.

4.7 Conclusions:

Exploration work on the southern (Mt Agnew) margin of the Heemskirk Granite has defined four stanniferous polymetallic sulfide bodies - Sweeneys, Globe, Anomaly 1 and Anomaly 4.

These four deposits occur along a NE line, over a total distance of three kilometres.

In the late 1970s-early 80s, RGC systematically sampled all the old workings and drilled thirty (30) cored holes. The results of this work are summarised as:

Sweeneys: 18 drilled holes located two interconnected stanniferous sulfide deposits - one flat lying, the other steep dipping. Scope exists for extensions of both deposits.

Polymetallic sulfide and tin mineralogy are complex.

Anomaly 1: Six (6) drill holes located a complex polymetallic stanniferous sulfide deposit and a cassiterite zone, both of which have scope for extension.

Anomaly 4: This I.P. anomaly has been tested by only one drill hole which intersected a wide zone of complex polymetallic sulfides with variable amounts of tin.

Scope obviously exists to define extensions of this zone.

Globe: Adit sampling has defined a high Ag polymetallic sulfide deposit which has been inconclusively tested by 5 cored drill holes.

Scope exists for this body to extend down-plunge to the NE.

Work completed to date indicates that extensions to each of the above four deposits are possible and can best be pursued by core drilling.

Metallurgical work on the complex polymetallic stanniferous sulfides present in each deposit should be completed on adit samples and drill cores to determine possible treatment routes.

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Unpub. Rep. GOLDFIELDS EXPLORATION PTY LTD; RENISON LTD*. [TCR 85-2323 J].
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A REPORT ON GRADIENT ARRAY EIP SURVEY OVER THE GLOBE MINE NEAR ZEEHAN, TASMANIA.
Unpub. Rep. SCINTREX PTY LTD; RENISON LTD*; MT LYELL MINING & RAILWAY CO LTD*. [TCR 85-2362 J].
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Unpub. Rep. GOLDFIELDS EXPLORATION PTY LTD*. [TCR 86-2536 J].

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Unpub. Rep. GOLDFIELDS EXPLORATION PTY LTD*. [TCR 87-2646].

366070

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REPORT NO :87-2715 DATE:SEP,1987 COMPANY REF:
 AUTHOR(S) :POLTOCK, R.
 TITLE :E.L. 19/86 TRIAL HARBOUR, TASMANIA ANNUAL REPORT FOR THE PERIOD OCTOBER 1986 - SEPTEMBER 1987
 COMPANY(S) :CREASY, R.W.*1 R. POLTOCK GEOLOGICAL PTY LTD;
 FORMAT :1 VOL 7PP, 4 APPX, 1 FIG, 4 PLATES, 2 PLANS,
 TENEMENTS :EL 19/86

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-3 REMINE

GEOGRAPHIC :REMINE,

***** EXPLORATION KEYWORDS *****

400 GEOCHEMISTRY 500 MISC AND FUELS
 1 Stream sediment 501 PETROLOGY
 5 Rock-chip
 MINERALS/COMMODITY:GOLD, PLATINOIDS, CHROMITE, CHROMIUM,
 MINE/DEPOSIT :NICKEL REWARD,
 OTHER KEYWORDS :TRIAL HARBOUR ULTRAMAFIC COMPLEX(S), CRIMSON CREEK FORMATION(S), HEEMSKIRK GRANITE(S),
 ANNOTATION :STREAM SEDIMENT AND PANNED CONCENTRATE GEOCHEMISTRY REVEALED ONLY ONE POSSIBLE PGE ANOMALY. GOLD AND PGE
 ROCK-CHIP GEOCHEMISTRY ON THE NICKEL REWARD WORKINGS REVEAL ONLY A WEAK GOLD ANOMALY.

REPORT NO :88-2874 DATE:OCT,1988 COMPANY REF:
 AUTHOR(S) :POLTOCK, R.
 TITLE :E.L. 19/86, TRIAL HARBOUR, TASMANIA, ANNUAL REPORT OF THE PERIOD OCTOBER 1987 - SEPTEMBER 1988 AND
 RELINQUISHMENT REPORT
 COMPANY(S) :R. POLTOCK GEOLOGICAL PTY LTD; CREASY, M.G.*1
 FORMAT :1 VOL 5PP, 3 FIG,
 TENEMENTS :EL 19/86

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-3 REMINE

GEOGRAPHIC :FEN CK,

***** EXPLORATION KEYWORDS *****

100 GEOLOGY 400 GEOCHEMISTRY
 1 Surface mapping 1 Stream sediment
 5 Rock-chip
 MINERALS/COMMODITY:HEAVY MINERALS, GOLD, PLATINOIDS,
 OTHER KEYWORDS :CAINOZOIC SEDIMENTS, TRIAL HARBOUR ULTRAMAFIC COMPLEX(S),
 ANNOTATION :THE GOLD/PLATINOID POTENTIAL OF THE ULTRAMAFICS HAS BEEN FULLY TESTED WITHOUT SUCCESS. THE INTERPRETED
 OCCURRENCE OF STRANDED AND REWORKED BEACH DEPOSITS IN THE FEN CREEK AREA WAS DISCOUNTED BY PANNED CONCENTRATE
 SAMPLING AND RECONNAISSANCE GEOLOGICAL MAPPING.

OPEN FILE LIBRARY

REPORT NO :83-2878 DATE:NOV,1988 COMPANY REF:
 AUTHOR(S) :CROMER, W.C.
 TITLE :EL 28/87, GRANVILLE HARBOUR, TASMANIA, ANNUAL REPORT, YEAR 1 (12.12.87 - 12.12.88)
 COMPANY(S) :WILLIAM C. CROMER PTY LTD; NEW HOLLAND MINING NL*1
 FORMAT :1 VOL 10PP, 1 APPX, 2 FIG,
 TENEMENTS :EL 28/87

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-3 REMINE ,

GEOGRAPHIC :DUCK CK, TRIAL HARBOUR, GOURLAYS CK,

***** EXPLORATION KEYWORDS *****

100 GEOLOGY :300 GEOPHYSICS
 1 Surface mapping 1 Gnd magnetic
 2 Air magnetic
 10 Gravity

MINERALS/COMMODITY:CASSITERITE, BASE METALS, PYRRHOTITE, MAGNETITE, IRON, TIN,
 OTHER KEYWORDS :HEEMSKIRK GRANITE(S), OONAH FORMATION(S), MURAWINA SUPERGROUP(S), SKARN, REPLACEMENT MINERALISATION,
 ANNOTATION :A REVIEW OF PREVIOUS EXPLORATION AND REINTERPRETATION OF GRAVITY AND MAGNETIC DATA INDICATES THAT ANOMALIES
 WITHIN THE NORTHERN METAMORPHIC AUREOLE OF THE GRANITE ARE UNDER-EXPLORED YET HIGHLY PROSPECTIVE. FURTHER
 GRAVITY AND AEROMAGNETICS IS PLANNED TO FURTHER DELINEATE SUB-CROPPING GRANITE SPINES AND ASSOCIATED SKARN
 DEVELOPMENT.

REPORT NO :88-2878A DATE:OCT,1988 COMPANY REF:GRANHARB
 AUTHOR(S) :LEAMAN, D.E.
 TITLE :EL 28/87 GRANVILLE HARBOUR, REGIONAL GEOPHYSICAL REVIEW
 COMPANY(S) :LEAMAN GEOPHYSICS; NEW HOLLAND MINING NL*1
 FORMAT :1 VOL 14PP, 15 FIG,
 TENEMENTS :EL 28/87

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-3 REMINE ,

GEOGRAPHIC :DUCK CK, TRIAL HARBOUR, GOURLAYS CK, NT HEEMSKIRK,

***** EXPLORATION KEYWORDS *****

300 GEOPHYSICS
 2 Air magnetic
 4 Air electromag

MINERALS/COMMODITY:CASSITERITE, BASE METALS, TIN,
 OTHER KEYWORDS :HEEMSKIRK GRANITE(S), OONAH FORMATION(S), MURAWINA SUPERGROUP(S), SKARN,
 ANNOTATION :THE SUB-CROPPING FORM OF THE HEEMSKIRK PLUTON IS DEFINED AND A NUMBER OF PROSPECTIVE MAGNETIC ANOMALIES
 DEFINED BENEATH TERTIARY COVER.

OPEN FILE LIBRARY
COMPANY REF:

REPORT NO :89-2916 DATE:FEB,1989
AUTHOR(S) :ANON
TITLE :ANNUAL REPORT / EXPLORATION LICENCE 59/87
COMPANY(S) :KINGSTREAM RESOURCES NL; ACA HOWE AUST PTY LTD;
FORMAT :1 VOL 3PP, 1 FIG;
TENEMENTS :EL 59/87

* * * * GEOGRAPHIC DATA * * * *

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-3 REMINE ,7914-2 ZEEHAN

* * * * EXPLORATION KEYWORDS * * * *

100 GEOLOGY 300 GEOPHYSICS
MINERALS/COMMODITY:TIN,
OTHER KEYWORDS :HEEMSKIRK GRANITE(S), DONAH FORMATION(S), SKARN,
ANNOTATION :A REVIEW OF PREVIOUS EXPLORATION AND RECOMMENDATIONS FOR FURTHER WORK.

REPORT NO :89-3046 DATE:OCT,1989 COMPANY REF:
AUTHOR(S) :HOWLAND-ROSE, A.M.
TITLE :EXPLORATION LICENCE 28/88 - ZEEHAN, ANNUAL REPORT FOR PERIOD 19TH MAY 1989* TO 31ST OCTOBER 1989
COMPANY(S) :MAJOR MINING LTD; THE DUKE OF AVRAM*;
FORMAT :2 VOL 3PP, 1 APPX, 2 FIG;
TENEMENTS :EL 28/88

* * * * GEOGRAPHIC DATA * * * *

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN ,7914-3 REMINE

GEOGRAPHIC :COMSTOCK, STONEHENGE CK,

* * * * EXPLORATION KEYWORDS * * * *

300 GEOPHYSICS
8 EIP/NIP
MINERALS/COMMODITY:BASE METALS,
MINE/DEPOSIT :COMSTOCK,
ANNOTATION :AN OUTLINE OF EXPLORATION PHILOSOPHY. A LITERATURE REVIEW IS IN PROGRESS. GEOPHYSICAL TEST SURVEYS WERE CONDUCTED OVER THE COMSTOCK FB-ZN-AG LODGE AND AREAS TO THE EAST THEREOF WITHIN THE EL.

REPORT NO :82-3046A DATE:OCT.1989 COMPANY REF:TAS-127
AUTHOR(S) :HOWLAND-ROSE, A.W.
TITLE :A REPORT ON GEOPHYSICAL TEST SURVEYS OVER THE COMSTOCK LEAD ZINC SILVER LODE AND AREAS TO THE EAST THEREOF
WITHIN E.L. 28/89, ZEEHAN AREA, TASMANIA.
COMPANY(S) :SCINTREX PTY LTD; MAJOR MINING LTD; THE DUKE OF AVRAM*
FORMAT :1 VOL 10PP, 1 APPX, 3 PLANS,
TENEMENTS :EL 28/83

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN

GEOGRAPHIC :STONEHENGE CK;

***** EXPLORATION KEYWORDS *****

300 GEOPHYSICS
7 SP/AP/EP
9 EIP/MIP
9 Resistivity
10 Gravity

MINERALS/COMMODITY:BASE METALS,
MINE/DEPOSIT :COMSTOCK,
ANNOTATION

:A GEOPHYSICAL TEST SURVEY OVER THE COMSTOCK LODE INVOLVING SP, IP, RESISTIVITY AND GRAVITY METHODS HAS REVEALED A SIGNIFICANT SERIES OF ANOMALIES. A RECON. SURVEY RUN TO THE GRID SE HAS LOCATED TWO ANOMALIES OF INTEREST. TRENCHING IS RECOMMENDED. FURTHER SP SURVEYS ARE RECOMMENDED AS A RECONNAISSANCE METHOD WITHIN THE EL. ANOMALIES SHOULD BE FOLLOWED UP BY IP AND (PERHAPS) BY GRAVITY METHODS.

REPORT NO :90-3084 DATE:JAN.1990 COMPANY REF:
AUTHOR(S) :CROMER, W.C.
TITLE :EL 28/87. GRANVILLE HARBOUR, TASMANIA. RELINQUISHMENT REPORT.
COMPANY(S) :NEW HOLLAND MINING NL*1
FORMAT :1 VOL 5PP, 2 FIG,
TENEMENTS :EL 28/87

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-3 BURNIE ;SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-3 REMINE ;7914-4 CORINNA

***** EXPLORATION KEYWORDS *****

MINERALS/COMMODITY:TIN, BASE METALS,
OTHER KEYWORDS :EXPLORATION POTENTIAL, DONAH FORMATION(S), HEENSKIRK GRANITE(S),
ANNOTATION :NO DATA - STATEMENT OF TYPE OF WORK DONE WITH REFERENCES TO OTHER REPORTS. CONCLUDES THAT PROSPECTIVITY OF RELINQUISHED AREA IS LOW.

366074

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COMPANY REF:
REPORT NO :90-3085 DATE:DEC,1989
AUTHOR(S) :CROMER, W.C.
TITLE :EL 28/87 GRANVILLE HARBOUR, TASMANIA. ANNUAL REPORT YEAR 2 (12.12.88 - 12.12.89)
COMPANY(S) :NEW HOLLAND MINING NL*
FORMAT :1 VOL 6PP, 1 APPX, 1 FIG,
TENEMENTS :EL 28/87

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-3 BURNIE ,SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-3 REMINE ,7914-4 CORINNA

GEOGRAPHIC :GRANVILLE HARBOUR,

***** EXPLORATION KEYWORDS *****

300 GEOPHYSICS
10 Gravity
MINERALS/COMMODITY:TIN, BASE METALS,
OTHER KEYWORDS :HEEMSKIRK GRANITE(S), CONAH FORMATION(B),
ANNOTATION :TWO DIMENSIONAL GRAVITY INTERPRETIVE PROFILES.

REPORT NO :90-3157 DATE:JUL,1990 COMPANY REF:KC:ACW:1196:45:32
AUTHOR(S) :CONNELL, K.
TITLE :SURRENDER OF EXPLORATION LICENCES 28/87, 29/87, 30/87
COMPANY(S) :NEW HOLLAND MINING NL*
FORMAT :1 VOL 2PP,
TENEMENTS :EL 28/87 ,EL 29/87 ,EL 30/87

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,

GEOGRAPHIC :STRAHAN, KING R, GRANVILLE HARBOUR,

***** EXPLORATION KEYWORDS *****

ANNOTATION :THIS REPORT CONSISTS OF A LETTER SEEKING RELINQUISHMENT. NO DATA IS GIVEN. THERE ARE FINAL REPORTS ON EL 29/87 (90-3184) & EL 30/87 (90-3184) BUT MORE INFORMATION ON EL 28/87 IS YET TO COME TO HAND.

OPEN FILE LIBRARY
COMPANY REF:
REPORT NO :90-3204 DATE:NOV,1990
AUTHOR(S) :ANON
TITLE :EXPLORATION LICENCE 28/88 - ZEEHAN, SECOND ANNUAL REPORT FOR PERIOD 1ST NOVEMBER, 1989 TO 31ST OCTOBER, 1990.
COMPANY(S) :MAJOR MINING LTD; THE DUKE OF AVRAM*;
FORMAT :3 VOL 3PP, 2 FIG;
TENEMENTS :EL 28/88 ,

* * * * * GEOGRAPHIC DATA * * * * *

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN ,7913-1 STRAHAN ,

* * * * * EXPLORATION KEYWORDS * * * * *

300 GEOPHYSICS
7 SP/AP/EP
8 EIP/MIP
10 Gravity
MINE/DEPOSIT :COMSTOCK,
OTHER KEYWORDS :CONAH FORMATION(S),
ANNOTATION :GEOPHYSICAL ANOMALIES TO THE SOUTH-EAST OF THE COMSTOCK LODGE WERE DEFINED WHICH ARE WORTHY OF FOLLOW-UP.

REPORT NO :90-3204A DATE:OCT,1989 COMPANY REF:TAS-127
AUTHOR(S) :HOWLAND-ROSE, A.W.
TITLE :A REPORT ON GEOPHYSICAL TEST SURVEYS OVER THE COMSTOCK LEAD ZINC SILVER LODGE AND AREAS TO THE EAST THEREOF
WITHIN E.L. 28/88, ZEEHAN AREA, TASMANIA.
COMPANY(S) :MAJOR MINING LTD; THE DUKE OF AVRAM*;
FORMAT :1 VOL 10PP, 3 FIG, 3 PLATES, (VOL 2/3 OF TCR 90-3204)
TENEMENTS :EL 28/88 ,

* * * * * GEOGRAPHIC DATA * * * * *

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN ,

* * * * * EXPLORATION KEYWORDS * * * * *

300 GEOPHYSICS
7 SP/AP/EP
8 EIP/MIP
9 Resistivity
10 Gravity
MINERALS/COMMODITY:SPHALERITE, GALENA, PYRITE,
MINE/DEPOSIT :COMSTOCK,
ANNOTATION :RECONNAISSANCE EIP, SP, RESISTIVITY AND GRAVITY SURVEYS HAVE BEEN DONE OVER COMSTOCK LODGE (NOT ON EL) AND
ADJACENT AREAS FOR COMPARISON. SEVERAL ZONES OF INTEREST ARE INDICATED.

OPEN FILE LIBRARY

REPORT NO :90-3204B DATE:FEB,1990 COMPANY REF:TAS-123A
 AUTHOR(S) :HOWLAND-ROSE, A.W.
 TITLE :A REPORT ON FURTHER GEOPHYSICAL TEST SURVEYS SOUTH EAST OF THE COMSTOCK LODE (EL 28/88) NEAR ZEEHAN, TASMANIA.
 COMPANY(S) :MAJOR MINING LTD; THE DUKE OF AVRAN*1
 FORMAT :1 VOL 14PP, 1 APPX, 4 PLATES, (VOL 3/3 OF TCR 90-3204)
 TENEMENTS :EL 28/88

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-2 ZEEHAN

***** EXPLORATION KEYWORDS *****

300 GEOPHYSICS
 7 SP/AP/EP
 8 EIP/MIP
 9 Resistivity
 10 Gravity
 MINERALS/COMMODITY:SPHALERITE, GALENA, PYRITE,
 MINE/DEPOSIT :COMSTOCK,
 ANNOTATION :FURTHER RECONNAISSANCE SURVEYS USING SP AND GRADIENT ARRAY IP SHOW ANOMALIES WORTHY OF FOLLOON-UP BY TRENCHING OR SHALLOW DRILLING.

REPORT NO :92-3383 DATE:JUL,1992 COMPANY REF:
 AUTHOR(S) :SHARPLES, C.
 TITLE :PROPOSED RED GRANITE QUARRY SITES IN THE HEEMSKIRK GRANITE , WESTERN TASMANIA .
 COMPANY(S) :CAVENRIDGE PTY LTD*1
 FORMAT :1 VOL 65 PP, 3 APPX,
 TENEMENTS :EL 29/92 ,EL 13/91

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
 MAP SHEET(S) :7914-2 ZEEHAN ;7914-3 REMINE

GEOGRAPHIC :TRIAL HARBOUR RD

***** EXPLORATION KEYWORDS *****

100 GEOLOGY 500 MISC AND FUELS
 1 Surface mapping 504 FEASIBILITY STUDY
 MINERALS/COMMODITY:DIMENSION STONE, GRANITE,
 OTHER KEYWORDS :HEEMSKIRK GRANITE(S), MINING ; OPEN PIT,
 ANNOTATION :68 PAGE REPORT GIVING BACKGROUND , FIELD INVESTIGATIONS AND EVALUATIONS, RECOMMENDATIONS FOR QUARRIES ADJACENT TO THE TRIAL HARBOUR ROAD , SITES ON THE NORTH SIDE OF THE GRANITE WERE REJECTED . FOUR SITES RECOMMENDED FOR TRIAL EXCAVATIONS AND TESTING OF FRESH , SUBSURFACE SAMPLES . JOINTS MICROFRACTURES , TOURMALINE NODULES & VEINS , COLOUR ARE EVALUATED.

366077

OPEN FILE LIBRARY
COMPANY REF:

REPORT NO :92-3385 DATE:JUL,1992
AUTHOR(S) :TSEGLAKOFF, M.
TITLE :REPORT ON HEEMSKIRK AREA 1992
COMPANY(S) :CAVENRIDGE PTY LTD*;
FORMAT :1 VOL 37 PP, 1 MAP,
TENEMENTS :EL 29/92

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK55-5 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN ,7914-3 REMINE

GEOGRAPHIC :TRIAL HARBOUR, TASMAN R;

***** EXPLORATION KEYWORDS *****

100 GEOLOGY 500 MISC AND FUELS
3 Mine/Deposit 504 FEASIBILITY STUDY
MINERALS/COMMODITY:TIN , BASE METALS, DIMENSION STONE,
MINE/DEPOSIT :GLOBE, SWEENEYS, ST DIZIER,
OTHER KEYWORDS :HEEMSKIRK GRANITE(S);
ANNOTATION :37 PAGE REPORT DISCUSSES KNOWN METALLIC MINERALIZATION AND ANOMALIES IN THE LICENCE ALSO BACKGROUND INFORMATION
ON DIMENSION STONE IN HEEMSKIRK GRANITE, PARTICULARLY WHITE TYPES . GIVES PROPOSED WORK PROGRAMME.

REPORT NO :93-3521 DATE:NOV,1993 COMPANY REF:19287
AUTHOR(S) :PARKINSON, R.G.
TITLE :ZEEHAN NO 1 EL 28/88 REPORT ON EXPLORATION IN RELINQUISHED AREAS FOR THE PERIOD 9.12.88 TO 9.11.93.
COMPANY(S) :CRA EXPLORATION PTY LTD; MAJOR MINING LTD*;
FORMAT :1 VOL 9PP, 3 PLANS, 2APPX
TENEMENTS :EL 28/88

***** GEOGRAPHIC DATA *****

1:250000 MAP(S) :SK65-6 QUEENSTOWN,
MAP SHEET(S) :7914-2 ZEEHAN

GEOGRAPHIC :MT ZEEHAN, LITTLE HENTY R, TRIAL HARBOUR, CUMBERLAND CK.

***** EXPLORATION KEYWORDS *****

MINERALS/COMMODITY:SPHALERITE, GALENA, PYRITE, PYRRHOTITE, CASSITERITE, LEAD, ZINC;
OTHER KEYWORDS :PRECAMERIAN SEDIMENTS, ORDOVICIAN SEDIMENTS, OONAH FORMATION(S), GORDON LIMESTONE(S);
ANNOTATION :FOLLOWING A REVIEW OF EXISTING PUBLISHED AND OPEN FILE LITERATURE, THE COMPANY RELINQUISHED THE FOLLOWING
LITHOLOGIES- COASTAL SEDIMENTS, DEVONIAN GRANITE, SILURO-DEVONIAN SEDIMENTS AND ORDOVICIAN CONGLOMERATE AND
SANDSTONES. NO TARGETS WERE IDENTIFIED AND NO FIELD WORK WAS CARRIED OUT IN THE RELINQUISHED AREAS.

REPORT NO :94-3598 DATE:JUN,1994 COMPANY REF:
AUTHOR(S) :THE DUKE OF AVRAM
TITLE :REPORT ON EL 29/92 HEEMSKIRK AREA, JUNE 30 1994
COMPANY(S) :CAVENRIDGE PTY LTD*;
FORMAT :1 VOL 13PP, 1APPX
TENEMENTS :EL 29/92

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APPENDIX

DRILL LOGS

Drill Logs

The following drill logs were appended to the Review of Existing Data by L.A. Newnham (1996).
The originals are held in the Open File at Mineral Resources Tasmania.

Hole No.	Location	Drilled by	Drilling Completed	Length (m)	Logged by
THP115	Coleman's Workings	EZ	07/01/66	115.5	P.Roberts/G.M.Bainbridge
THP117	Coleman's Workings	EZ	04/03/66	94.2	P.Roberts/G.M.Bainbridge
THP119	Coleman's Workings	EZ	20/03/66	76.5	P.Roberts/G.M.Bainbridge
THP123	Central Federation	EZ	06/09/66	126.5	P.Roberts/G.M.Bainbridge
SWY1	Sweeney's Mine	Renison	08/06/77	149.0	K.Wells
SWY2	Sweeney's Mine	Renison	14/06/77	101.5	K.Wells
SWY3	Sweeney's Mine	Renison	23/06/77	152.5	K.Wells
SWY4	Sweeney's Mine	Renison	29/06/77	101.0	K.Wells
SWY5	Sweeney's Mine	Renison	01/07/77	80.4	K.Wells
SWY6	Sweeney's Mine	Renison	13/07/77	155.2	K.Wells
SWY7	Sweeney's Mine	Renison	20/07/77	95.5	K.Wells
SWY8	Sweeney's Mine	Renison	27/07/77	137.3	K.Wells
SWY9	Sweeney's Mine	Renison	04/08/77	102.5	K.Wells
SWY10	Sweeney's Mine	Renison	09/08/77	92.4	K.Wells
SWY11	Sweeney's Mine	Renison	17/08/77	134.3	K.Wells
SWY12	Sweeney's Mine	Renison	01/09/77	191.5	K.Wells
SWY13	Sweeney's Mine	Renison	12/09/77	140.0	K.Wells
SWY14	Sweeney's Mine	Renison	21/09/77	191.5	K.Wells
SWY15	Sweeney's Mine	Renison	10/10/77	254.5	K.Wells
SWY16	Sweeney's Mine	Renison	26/10/77	257.4	K.Wells
SWY17	Sweeney's Mine	Renison	12/11/77	245.2	P.R.Stephenson
SWY18	Sweeney's Mine	Renison	31/10/78	249.1	A.Ross
FED1	Central Federation	Renison	24/01/79	197.5	K.Wells
FED2	West Federation	Renison	13/02/79	137.8	K.Wells
FED3	S Lake Cumberland	Renison	26/02/79	131.5	K.Wells
FED4	SW Lake Cumberland	Renison	08/03/79	131.0	A.Ross
FED5	Waxman & Weston's Workings	Renison	27/03/79	201.5	A.Ross
FED6	Coleman's Workings	Renison	11/04/79	186.5	A.Ross
FED7	Federation area	Renison	18/01/80	98.2	P.Roberts
FED8	East Federation	Renison	08/02/80	151.6	P.Roberts
FED9	Central Federation	Renison	01/02/80	155.8	P.Roberts
FED10	West Federation	Renison	25/01/80	139.0	P.Roberts
FED11	Coleman's Workings	Renison	15/02/80	122.2	P.Roberts
FED12	Waxman & Weston's Workings	Renison	26/02/80	311.2	P.Roberts
FED13	Coleman's Workings	Renison	18/07/80	70.0	P.Roberts
FED14	West Federation	Renison	19/01/81	104.5	P.Roberts
FED15	West Federation	Renison	25/01/81	100.8	P.Roberts
FED16	West Federation	Renison	05/02/81	110.2	P.Roberts
FED17	East Federation	Renison	16/02/81	200.0	P.Roberts
FED18	Waxman & Weston's Workings	Renison	03/03/81	281.0	P.Roberts
FED19	Waxman & Weston's Workings	GFE	19/01/82	197.3	P.Roberts
FED20	Agnew Grid, Anomaly 1	GFE	26/01/82	158.2	D.Kilpatrick
FED21	Agnew Grid, Anomaly 1	GFE	02/02/82	117.0	D.Kilpatrick
FED22	Agnew Grid, Anomaly 1	GFE	15/02/82	230.5	D.Kilpatrick
FED23	Agnew Grid, Anomaly 1	GFE	06/03/82	232.8	D.Kilpatrick
TH7	Globe Mine	GFE	18/03/82	137.7	D.Kilpatrick
TH8	Globe Mine	GFE	24/03/82	101.5	D.Kilpatrick
TH9	Globe Mine	GFE	01/04/82	134.4	D.Kilpatrick
FED24	Agnew Grid, Anomaly 1	GFE	11/02/83	186.0	A.J.Cartwright
FED25	Agnew Grid, Anomaly 1	GFE	21/02/83	198.2	A.J.Cartwright
FED26	Agnew Grid, Anomaly 4	GFE	04/03/83	122.8	A.J.Cartwright

List of maps included in Newnham 1996.

These were copied from maps held in the Open File at MRT.

This list includes figure number (from Newnham 1996), geologist, date drawn, title, scale and company.

5. Wells, K; June 1979; HEEMSKIRK AREA GEOLOGICAL INTERPRETATION AND GEOPHYSICAL BOUNDARIES; 1:5000; Renison Ltd.
6. Bishop, J; May 1981; FEDERATION GRID CHARGEABILITY ANOMALIES FROM GRADIENT I.P.SURVEYS; 1:5000; Mitre Geophysics Pty Ltd.
7. Roberts, P; June 1980; COLEMAN'S WORKINGS FACTUAL GEOLOGY AND DIAMOND DRILLING; 1:500; Renison Ltd.
8. Hudspeth, G; July 1980; COLEMAN'S WORKINGS INVESTIGATIONS BY MT.LYELL (1945); 1:500; Renison Ltd.
9. Roberts, P. & Wells, K; July 1981; WEST FEDERATION GEOLOGICAL INTERPRETATION & DIAMOND DRILL HOLES; 1:500; Renison Ltd.
10. Roberts, P. & Wells, K; Aug 1980; CENTRAL FEDERATION WORKINGS GEOLOGY, DIAMOND DRILLING AND ROCK CHIP SAMPLES; 1:500; Renison Ltd.
11. Roberts, P; May 1981; WAXMAN & WESTON'S AREA E.L.11/76 DIAMOND DRILL HOLES AND INTERPRETATIVE GEOLOGY; 1:1000; Renison Ltd.
12. Wells, K; Aug 1977; E.L.11/76 SWEENEY'S MINE AREA SAMPLING RESULTS; 1:500; Renison Ltd.
13. Wells, K; Aug 1977; SWEENEY'S MINE DRILL HOLE LOCALITY PLAN; 1:500; Renison Ltd.
14. Cartwright, A; Oct 1983; GLOBE MINE AREA INTERPRETATIVE GEOLOGY & DIAMOND DRILL HOLE LOCALITY PLAN; 1:500; Gold Fields Exploration Pty Ltd.

15. Cannard, C; July 1981; GLOBE MINE S.P.L.129 ADIT SAMPLING RESULTS; 1:100; Renison Ltd.
16. Cartwright, A; July 1983; EAST-WEST SECTION (BEARING 105 AMG) THROUGH GLOBE MINE AREA; 1:500; Gold Fields Exploration Pty Ltd.
17. Kilpatrick, D (revised Cartwright, A); May 1983; AGNEW GRID ANOMALY 1 INTERPRETIVE GEOLOGY & DRILL HOLE LOCATIONS; 1:500; Gold Fields Exploration Pty Ltd.
18. Cartwright, A; July 1982; ANOMALY 1 VERTICAL CROSS-SECTIONS & DRILL HOLES; 1:500; Gold Fields Exploration Pty Ltd.