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PEGASUS GOLD AUSTRALIA LTD.

E.L. 11/84 BORRIL CREEK

ANNUAL REPORT - YEAR 5

28/9/1988 to 27/9/1989

89-3027

MINES	
File Ref. <i>EL 11/84</i>	
- <i>00CT 1989</i>	
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K.C. MORRISON
T.G. SUMMONS.

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TENEMENT INFORMATION

E.L. 11/84 covers 21 square kilometres of the middle Weld Valley in south west Tasmania. It is entirely within the South West Conservation Area. (Fig.1, Plan 1) The licence was granted to M.C. Forster on the 28th September 1984 for a period of up to 10 years.

An option agreement between M.C. Forster and Metals Exploration Ltd. existed between the 5th January 1987 and the end of licence year three. In August 1989 an option agreement was reached between M.C. Forster and Pegasus Gold Australia Ltd, for the exploration of the licence. This agreement has been registered with the Mines Department and Pegasus is the operator.

A one year postponement to the 50% compulsory relinquishment was offered by the Department of Mines in July 1989, as a result of the uncertainty over the final position of the World Heritage area boundary relative to E.L. 11/84. 50% of the licence area will be relinquished by the 27th September 1990.

SUMMARY OF PREVIOUS EXPLORATION

In 1987-88 an 18.2 line km grid was established in the southeast of the E.L. (Plan 4) to cover a suite of rocks known to include deformed ultramafics, carbonate and undifferentiated rocks showing intensive and pervasive secondary silica.

A programme of mapping, stream sediment and rock chip sampling, ground magnetics and bedrock geochemistry using a Wacker drill produced two main findings.

1) Anomalous chrome and nickel, and possibly platinum group metals are associated with a talca hematite magnetite schist. This unit correlated with a magnetic high.

2) Anomalous gold and arsenic was encountered in a brecciated, silicified, and in part cherty lithology of unestablished origin. Part of this unit may correlate with a magnetic low immediately east of the talc schist.

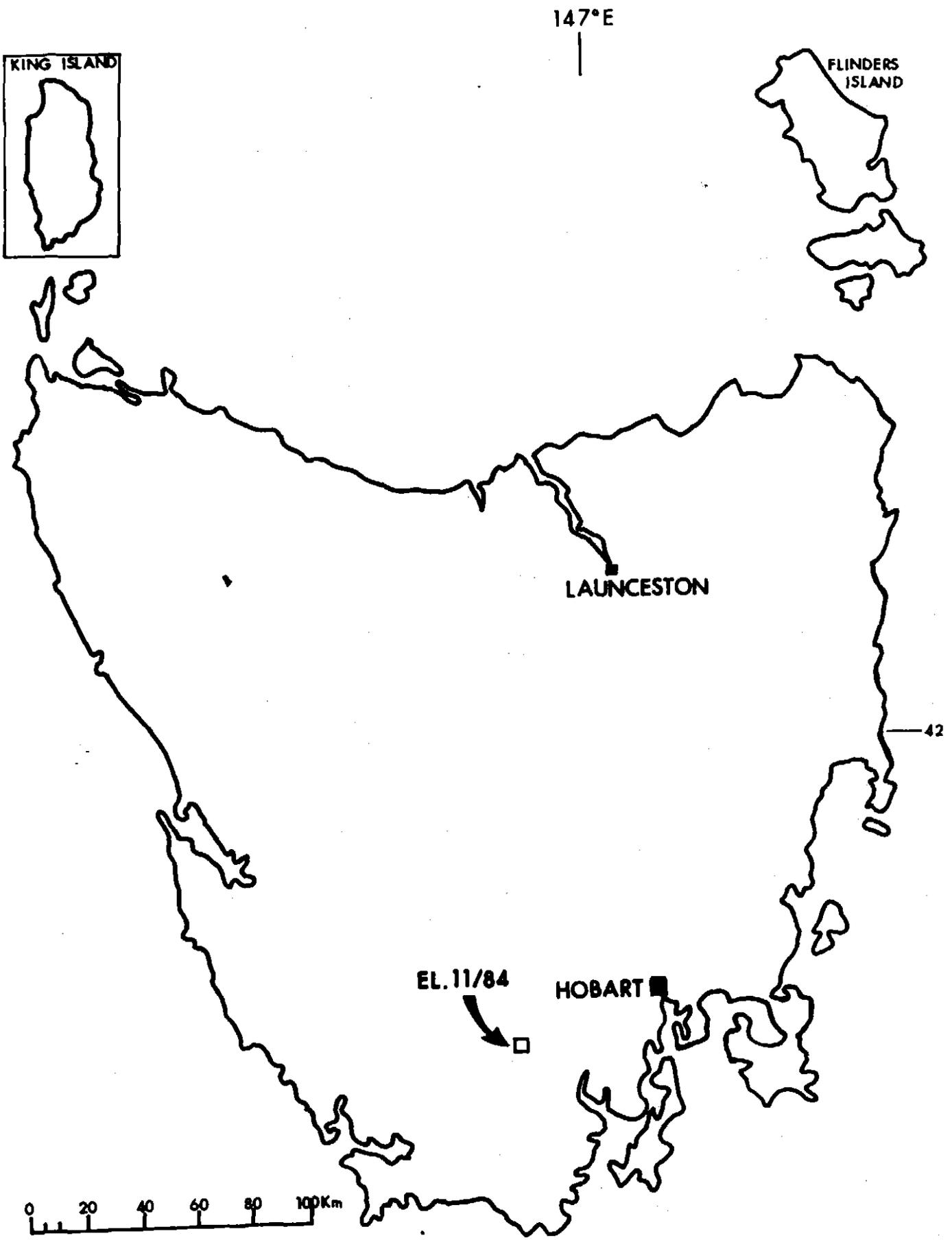


Figure 1 E.L. 11/84 Location Map

5 cm

DETAILS OF WORK COMPLETED IN YEAR 51) MAGNETICS

The ground magnetic survey completed and reported upon in year 4 was interpreted by Mr. Hugh Rutter of Geophysical Exploration Consultants Pty Ltd.

A map of the magnetic interpretation, together with a summary of Rutter's findings, are enclosed in Appendix 2. The main findings were that a North South strike prevails and that the target siliceous lithology, which in places shows anomalous gold and arsenic bedrock geochemistry, correlates with a slightly magnetic zone in the eastern part of the mapped area.

The North-South striking bands of magnetic highs, west of the target zone, appear to correlate with the Jurassic dolerite known to outcrop in the Weld River, but are probably in part responding to the altered and sheared ultramafics which outcrop in places on the western side of the grid.

2) BEDROCK GEOCHEMISTRY

The results of Wacker drilling and sample analyses for the northern part of the Weld River grid (lines 11,100 to 12,100N) were incomplete at the time of the Year 4 report and are included in this report. Lithological logs and gold, arsenic, nickel, chromium and platinum group element assays are enclosed in Appendix 3. This completes the bedrock sampling programme on the grid and together with the results previously submitted, defines a number of gold/arsenic surface anomalies which require further investigation. (See Appendices 4 and 5)

Elevated platinum was encountered at two sites on line 11,100N (samples No. 2286 and 2289) and sample No. 2200 from line 1200n contained elevated PGEs plus gold, with palladium and iridium values of 20 and 18 ppm. Lithological data at these sites is not definitive enough to differentiate bedrock sources from transported detrital sources. (ppb!)

The Wacker sampling programmes has resulted in a shift in exploration emphasis towards gold mineralisation within a brecciated siliceous lithology showing intensive and pervasive replacement by both blue-grey semi-chalcedonic cherty quartz

Table 1 Proposed Drill Targets, Weld Prospect

Section	Hole	Azim.	Decl.	Collar Co.ord.	TD	Target
10,300 N	WRC-1	0.0°	-50°	10,438 E	70 m	Test 1040 ppm As
"	WRC-2	270°	"	10,522 E	75 m	Test 0.45 gAu/t
10,500 N	WRC-3	090°	"	10,445 E	75 m	Test 0.34 gAu/t
"	WRC-4	270°	"	10,540 E	75 m	610 ppm As
10,600 N	WRC-5	090°	"	10,397 E	40 m	Test 0.22 gAu/t
"	WRC-6	270°	"	10,446 E	60 m	" "
"	WRC-7	090°	"	10,577 E	50 m	Test 0.38 gAu/t
"	WRC-8	270°	"	10,625 E	40 m	" "
11,800 N	WRC-9	090°	"	10,422 E	60 m	Test 0.60 gAu/t
"	WRC-10	270°	"	10,507 E	40 m	70 ppm As
12,000 N	WRC-11	090°	"	10,313 E	45 m	Test 0.13 gAu/t
"	WRC-12	090°	"	10,368 E	45 m	Test 0.20 gAu/t
"	WRC-13	090°	"	10,427 E	60 M	Test 0.79 gAu/t
"	WRC-14	270°	"	10,505 E	75 m	200 ppm As
				TOTAL	810 m	

N.B. Azimuths quoted refer to the local grid, which is approximately AMG.

006

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and cavity-fill sub-to euhedral crystalline quartz.

Interpretations of the gold and associated arsenic geochemistry are shown as maps in Appendix 5. Anomalous zones of greater than 50 ppm arsenic and greater than 50 ppb gold exist within a north-south trending belt, centered approximately on the grid base line, at 10,500 E. In the east-west direction this belt of anomalies is contained between 10,200 and 10,700 grid east, but it is open to the north and to the south.

The gold geochemistry (Plan 4, Appendix 5) shows a division into two anomalous zones separated by a relatively depleted area immediately north of the Weld River.

On the basis of the data described above, fourteen sites have been selected for drilling to test whether these gold and arsenic anomalies represent significant subsurface mineralisation. Details of the drill hole sites and the targets are shown on Table 1.

EARTHWORKS

An access road, built to Forest Practices Code standard, was constructed from the South Weld public road to the grid, giving access to the drill sites south of the Weld River. The new road is approximately 2 km long and meets the grid base line at approximately 10,200 metres North.

Temporary tracks branch from this access road to eight drill pads which have been constructed on the grid, south of the Weld River. An access road already exists to the North Weld part of the prospect and six drill pads will be constructed in this area, (see Tabel 1) in preparation for the December 1989 drilling.

PETROLOGY

Several rocks showing apparent replacement textures were collected from the southern end of the target area. Two samples (TST4, TST5) show anomalous gold, arsenic, nickel and lead, with gold values of 2.16 and 0.75 ppm. (see Appendix 6).

Material from samples TST6, 7, 8 was sent to Mr. G. Davidson, Geology Department, University of Tasmania and Dr. J. Taheri, Tasmanian Department

of Mines for petrographic and fluid inclusion work in search of evidence of events possibly related to mineralisation. This work is enclosed in Appendix 6 and sample numbers quoted in the reports correspond to the numbers of the parent samples as follows

TST 6 = KM2

TST 7 = SW1-1, SW1-2

TST 8 = KM1

Additional XRD work on sample TST8 has revealed that much of the mineral originally optically identified as chlorite, is serpentine (Dr. J. Taheri, pers. comm.) This work is still underway and will be expanded over the next year.

In summary the preliminary findings to date are that:

- 1) The rocks in the southern part of the target area were probably originally both siliceous sediments and ultramafics. They have been tectonically deformed and pervasively replaced, in part by silica and in part by carbonate.
- 2) The fluid inclusion data provides evidence of hydrothermal alteration probably related to metamorphism. Secondary silicification occurred at temperatures of around 380°C.

CONCLUSIONS AND RECOMMENDATIONS

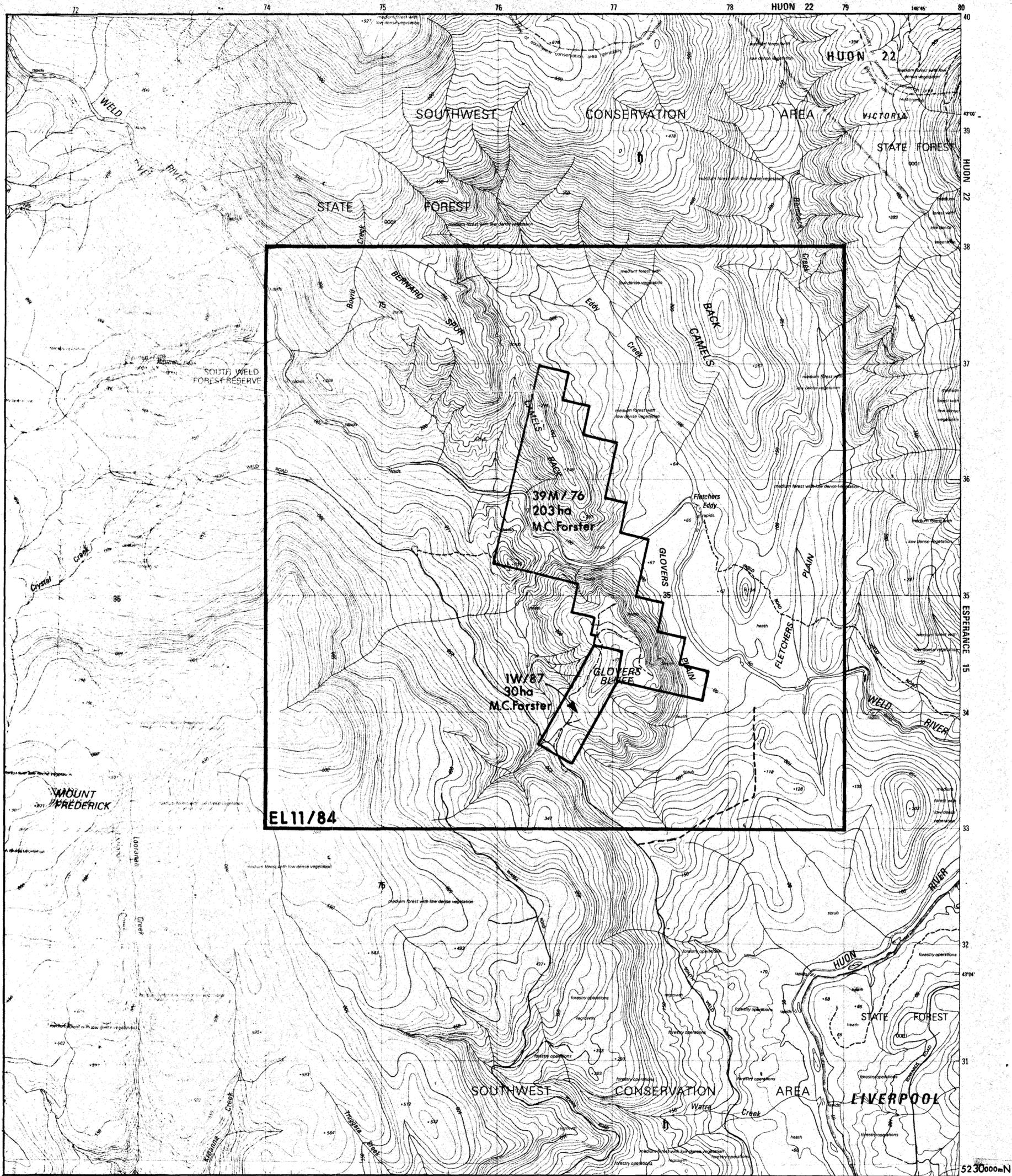
1. A North-South trending zone of anomalous gold and arsenic mineralisation hosted by a lithology composed almost entirely of replacement quartz has been recognised by work to date.
2. This anomalous zone is considered to be a gold target and a preliminary round of drilling to test the subsurface extent of mineralisation will be conducted during the 1989-90 summer.
3. Further petrological work, together with regional geophysics and remote sensing is needed to explain the geology of the target and the origin of the mineralisation.

PROPOSED FUTURE WORK

During the 1989-90 summer approximately 800 metres of Reverse Circulation drilling will test the 14 gold/arsenic anomalies defined by the bedrock sampling programme. Some core drilling may also be carried out to provide material for

further fluid inclusion and petrographic studies.

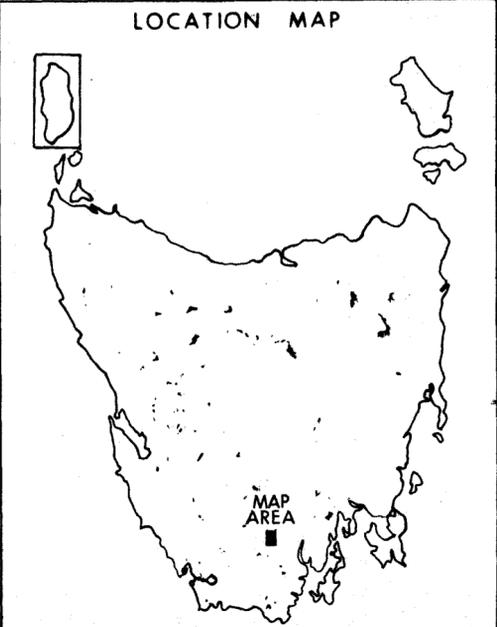
A mapping and sampling traverse of the Weld River is proposed for next Summer, together with a re-interpretation of existing magnetics data and the use of Thematic Mapper imagery to try to delineate the zone of siliceous alteration and its associated anomalous gold content. A geological explanation for the high temperature heat source suggested by the fluid inclusion data will be sought by this work in combination with further petrology.



EL11/84

523000mN
480000mE

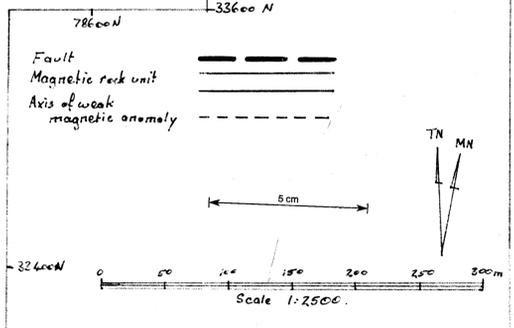
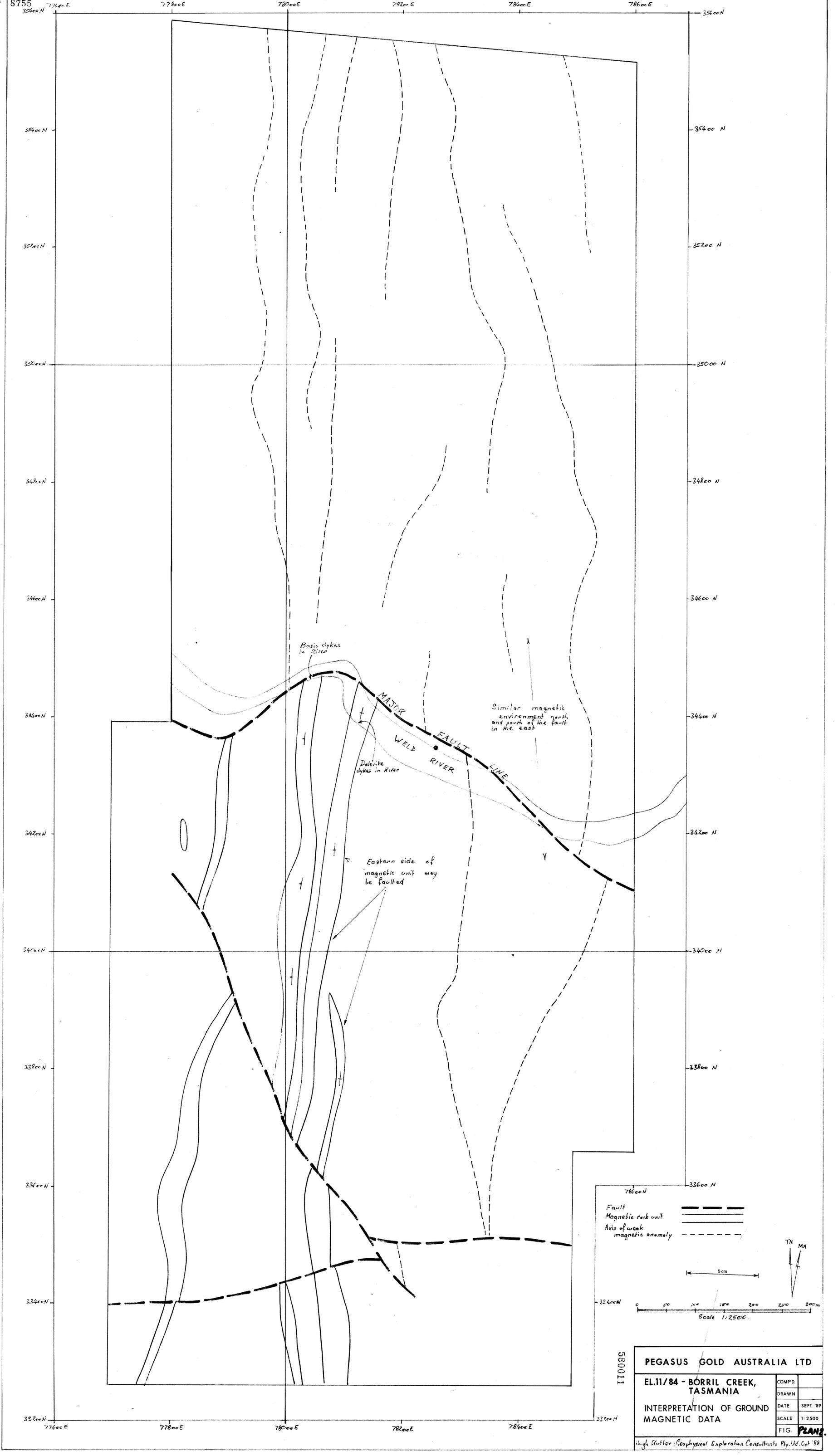
<p>Residential area; Commercial buildings</p> <p>Roads maintained for continuous public use</p> <p>Roads of restricted use or access</p> <p>Walking track, horse trail (approximate position) with bridge</p> <p>Railway with station; Places entered in National Estate Register</p> <p>Power transmission line with pylon positions</p> <p>Building; Feature of historic or special interest; Ruin; Mine</p> <p>Post office; Police station; Fire station; School</p>	<p>Primary road with route number</p> <p>Secondary road with route number</p> <p>Minor road with route number</p> <p>Other road</p> <p>Other roads with bridge</p> <p>Vehicular track with gate</p> <p>Caravans</p>	<p>Caravan park; Camping ground; Public toilets</p> <p>Disposal area; Visitor information centre; Cemetery</p> <p>Picnic area; Trip station beacon; Spot elevation</p> <p>Contour with value; Depression contour</p> <p>Quarry, pit or open cut mine</p> <p>Rock scree; Broken rocky surface</p> <p>Dense forest; Medium forest</p> <p>Low dense vegetation; Distinctive grass</p> <p>Orchard; Pine plantation</p> <p>Eucalypt plantation; Submerged trees</p>	<p>Swamp, perennial, intermittent</p> <p>Windbreak</p> <p>Wet area; Subject to flooding</p> <p>Waterfall; Rapids</p> <p>Indefinite shoreline or floodbank; Levee</p> <p>Tidal rocks or ledge; Offshore rock</p> <p>Navigation light or lighthouse; Exposed wreck</p> <p>Sand; Tidal reef</p> <p>Saline coastal flat; Tidal flats</p> <p>Jetty; Launching ramp</p>
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5 cm

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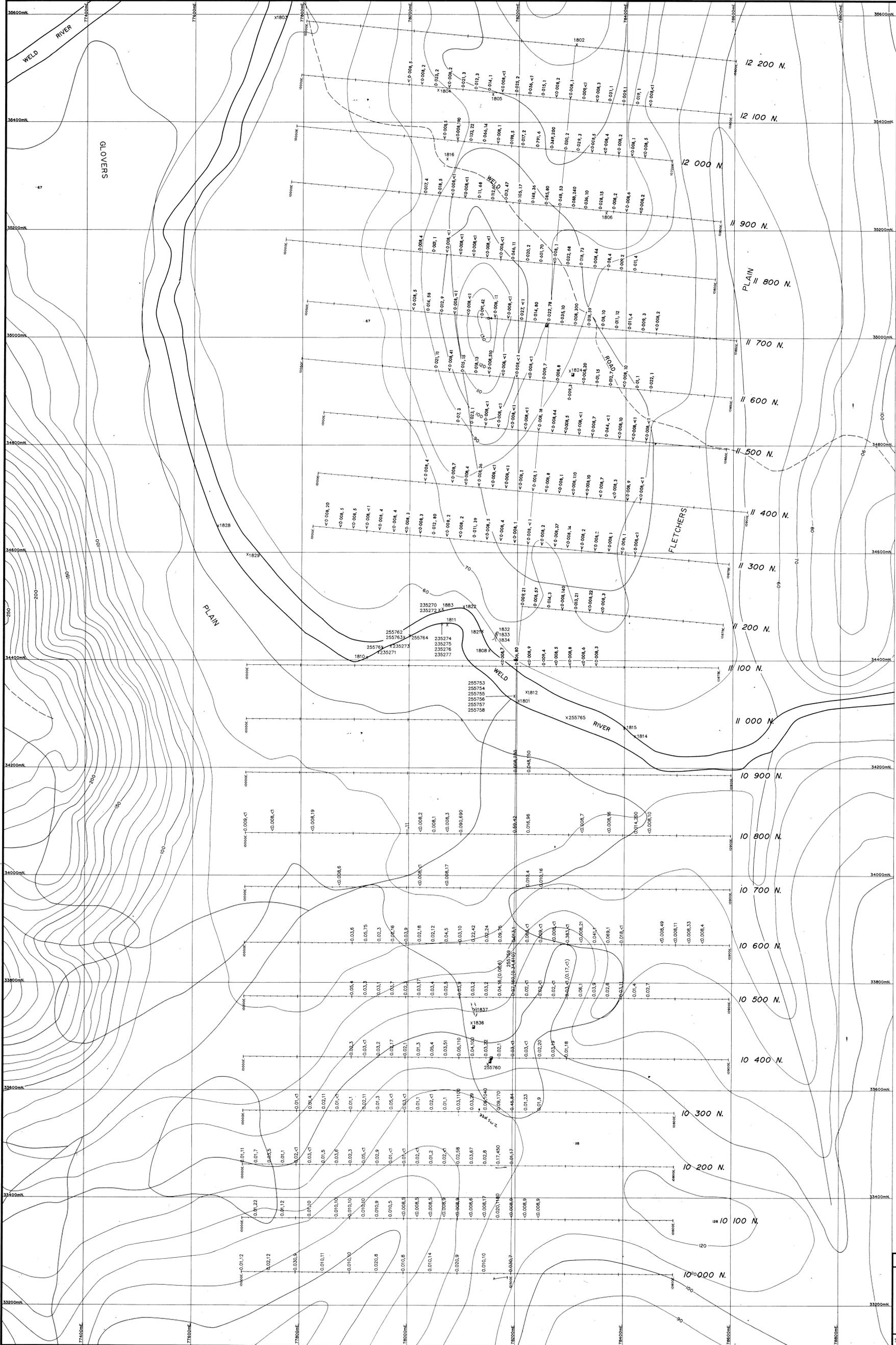
PEGASUS GOLD AUSTRALIA LTD		PLAN 1	
E.L. 11/84 - BORRIL CREEK, TASMANIA		COMPILED	KM
BASE MAP		DRAWN	JMT
580010		DATE	JULY 1989
		SCALE	1:25,000
		FIGURE	



580011

PEGASUS GOLD AUSTRALIA LTD	
EL.11/84 - BORRIL CREEK, TASMANIA	
COMP'D	
DRAWN	
DATE	SEPT '89
SCALE	1:2500
FIG.	PLANE

Hugh Rutter: Geophysical Exploration Consultants Pty. Ltd. Oct '88

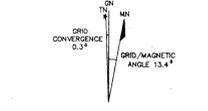


ROCK CHIP GEOCHEMISTRY

SAMPLE NO.	ppm		
	Au	As	Ag
1801	<0.008	13	
1802	0.02	2	
1803	<0.008	1	
1804	<0.008	1	
1805	<0.008	1	
1806	0.033	200	
1807	0.044	16	
1808	0.012	8	
1809	<0.008	6	
1810	<0.008	5	
1811	0.014	3	
1812	0.023	29	
1813	<0.008	7	
1814	<0.008	60	
1815	<0.008	7	
1816	0.015	34	
1818	<0.008	2	
1819	<0.008	51	
1820	<0.008	2	
1821	<0.008	1	
1822	<0.008	57	
1823	0.008	1	
1824	0.013	5	
1825	<0.008	3	
1826	0.014	19	
1827	<0.008	1	
1828	<0.008	1	
1829	<0.008	5	
1830	<0.008	1	
1831	0.02	4	
1832	0.05	9	
1833	0.04	6	
1834	0.03	13	
1836	0.03	320	
1837	0.02	8	
1838	0.02	27	
1839	0.01	4	
1840	0.02	18	
1841	0.01	12	
1842	0.02	4	
1843	0.02	1	
1844	0.01	5	
235270	0.32	0.7	
235271	0.29	10	0.6
235272	0.36	14	0.7
235273	0.08	2	1.4
235274	0.08	3	0.8
235275	0.01	5	1.4
235276	0.08	26	0.6
235277	0.02	30	1.1
255753	<0.008		
255754	<0.008		
255755	<0.008		
255756	<0.008		
255757	<0.008		
255758	<0.008		
255759	<0.008		
255760	<0.008		
255761	<0.008		
255762	<0.008		
255763	<0.008		
255764	<0.008		
255765	<0.008		

LEGEND

- Shaft / pit
- Adit
- Alluvial workings / trench
- X1812 Rock
- Wacker Percussion



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PEGASUS GOLD AUSTRALIA LTD
 EL. 11/84 - BORRIL CREEK TASMANIA
 ROCK CHIP & WACKER GEOCHEMISTRY RESULTS
 Au, As, & Ag

SCALE 1:2500

FILE No. PLAN 3



012

580014

Reference Number 42341

5 DEC., 1988

Order Number 18715

Weld River

Metals Exploration Ltd

1st Floor West, 260 Auburn Road

HAWTHORN VIC 3122

Analysis of Mineral Samples

K Sugars

Authorised By : K Sugars

Analysed By :
ANALYTICAL SERVICES (WA) PTY LTD
19 Augusta St
WILLETTON WA 6155
Telephone 354 1888
Telex AA 94767
Facsimile 457 2569

580015

013

ANALABS

Weld
28 SEP RECD

Phone (09) 458 7999

A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106
FAX: 004 31 8890

Telex AA92560

ANALYTICAL REPORT No. 142.2.08.05693

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

R. Pollock
Metals Exploration Ltd.,
C/- Post Office
Wilmot
Tasmania 7310

ORDER No.	PROJECT
18714	
DATE RECEIVED	RESULTS REQUIRED
01/09/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	30/09/88	1	113

ST. OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
		2182/296	30	Prep: 005.013.016							N1/101		
		2162/296	50								As/114, Cr/401, Au, AuChk/309		

RESULTS TO

Principal Geologist
Metals Exploration Ltd.,
260 Auburn Rd
Hawthorne
Victoria 3122

RESULTS TO

R. Pollock
Metals Exploration Ltd.,
C/- Post Office
Wilmot
Tasmania 7310

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP



014

REFERENCE NUMBER 42341

Order No 18715

Page 1

SAMPLE NUMBER	Au ppb	Pt ppb	Pd ppb	Ru ppb	Rh ppb	Ir ppb	Cs ppb
Detection	2	0.5	0.5	0.5	0.5	0.5	2
*****	*****	*****	*****	*****	*****	*****	*****
RP2136	6	5.5	7.0	4.0	1.5	5.5	4
RP2137	4	8.5	7.0	3.0	1.5	5.5	4
RP2140	6	4.0	10	2.0	1.0	4.0	4
RP2141	2	5.0	6.0	2.5	0.5	2.5	< 2
RP2148	< 2	3.0	4.0	1.5	<0.5	2.0	< 2
RP2149	< 2	1.0	2.5	2.5	0.5	1.0	< 2
RP2150	4	1.5	2.5	2.0	<0.5	1.5	< 2
RP2151	8	5.5	6.5	7.5	3.0	11	6
RP2164	< 2	1.0	1.0	<0.5	<0.5	1.0	< 2
RP2165	260	9.5	9.0	5.0	2.5	8.5	4
RP2165 DUP	240	8.0	9.0	8.5	2.0	7.0	4
RP2166	2	0.5	1.5	3.5	1.0	4.0	< 2
RP2167	12	0.5	2.0	1.5	1.0	4.5	2
RP2168	2	1.5	1.0	2.0	<0.5	2.0	2
RP2172	4	2.0	2.5	2.5	1.0	4.0	2
RP2173	4	6.5	11	2.0	1.5	3.5	< 2
RP2174	2	4.0	2.0	2.5	1.0	3.5	6
RP2174 DUP	2	3.5	1.5	2.0	<0.5	3.5	4
RP2175	6	8.5	9.5	4.0	1.0	4.0	2
RP2176	6	7.0	14	3.5	1.5	3.5	2
RP2177	4	1.0	3.0	3.0	1.0	4.0	2
RP2178	6	1.0	1.5	5.0	0.5	4.0	4
RP2178 DUP	4	1.0	2.5	2.0	0.5	3.0	2
RP2179	12	1.5	1.5	1.0	<0.5	0.5	< 2
RP2180	56	3.0	5.5	6.5	1.0	3.5	4
RP2181	10	5.0	5.0	6.5	2.0	6.0	4
RP2182	16	2.0	3.5	3.0	1.0	4.5	< 2
RP2183	74	2.0	7.5	8.0	1.5	9.0	2
RP2198	12	5.0	11	1.5	1.0	3.0	< 2
RP2199	230	4.5	9.5	2.5	1.5	5.0	4
RP2200	160	12	20	19	5.5	18	8
RP2201	12	2.0	1.5	2.5	0.5	3.5	< 2
RP2202	12	2.0	5.0	3.5	1.0	2.5	2
RP2202 DUP	16	3.0	1.0	3.0	1.0	4.0	4
RP2203	< 2	3.0	1.5	2.0	1.0	4.0	< 2
RP2204	26	5.5	6.5	8.0	1.5	4.5	< 2
RP2205	64	5.5	7.5	7.0	1.5	6.5	4
RP2206	10	5.5	5.5	3.0	1.0	4.5	< 2
RP2207	10	7.0	11	3.0	1.5	3.0	4
RP2234	10	5.5	7.0	3.5	1.5	5.5	4

2.20



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REFERENCE NUMBER 42341

Order No 18715

Page 2

SAMPLE NUMBER	Au ppb	Pt ppb	Pd ppb	Ru ppb	Rh ppb	Ir ppb	Os ppb
---------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

Detection	2	0.5	0.5	0.5	0.5	0.5	2
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RP2235	8	2.0	4.0	3.0	1.0	3.0	< 2
RP2236	10	4.0	2.5	2.0	1.0	4.0	4
RP2237	< 2	8.0	3.0	4.0	1.0	5.0	2
RP2238	8	1.5	2.5	2.0	0.5	4.0	2
RP2238 DUP	4	2.0	2.0	1.5	1.0	3.5	4
RP2239	< 2	4.5	4.0	3.5	1.0	4.5	< 2
RP2240	4	5.5	5.0	3.5	1.0	8.5	4
RP2245	< 2	4.5	5.0	3.0	1.0	5.0	< 2
RP2246	4	10	9.0	3.0	1.5	4.5	2
RP2247	6	14	6.0	3.0	1.0	5.5	4

RP2264	< 2	11	5.0	2.0	1.0	7.0	2
RP2265	10	14	4.5	5.0	2.0	6.5	4
RP2266	6	9.0	3.0	1.5	1.0	4.5	2
RP2286	4	36	4.0	<0.5	1.0	5.5	4
RP2287	4	2.0	2.5	2.0	1.0	2.5	2
RP2287 DUP	6	1.5	2.0	1.5	1.0	2.0	< 2
RP2288	2	17	4.0	3.5	1.5	6.5	< 2
RP2289	6	42	8.5	2.5	1.0	6.0	2



016

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Order No 18715

PAGE 3

Sample Preparation

No sample preparation was required on these samples.

Sample Analysis

Au Pt Pd Ru Rh Ir Os

have been determined by Fire Assay of the sample (in NEW pots) using Nickel Sulphide as the collection media. The Platinoids have been recovered from the Nickel Sulphide and analysed by ICP-Mass Spectrometry. Recovery of Gold is not quantitative at levels below 500 ppb.

Sample Storage

Sample pulps and residues will be stored free of charge for

ONE MONTH after reporting.

Samples are then Palletised, and a fee of \$1.00 per day per Pallet required is levied.



ANALABS

A Division of Macdonald Hamilton & Co Pty Ltd

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		142.2.08.05693				20/09/88	18714		1 OF 5	
TUBE No.	SAMPLE No.	Cr	Ni	As	Al	AuChk				
2182	2700	40	17	0.105	v					
2183	1000	70	36	0.148						
2184	55	60	80	0.085						
2185	240	180	53	0.046						
2186	450	415	240	0.088						
2187	330	260	10	0.036						
2188	150	15	15	0.028						
2189	220	185	2	0.008						
2190	240	280	6	<0.008						
2191	190	125	2	<0.008						
2192	150	260	5	<0.008						
2193	130	105	1	<0.008						
2194	130	145	2	<0.008						
2195	230	170	4	<0.008						
2196	240	205	5	<0.008						
2197	150	85	3	0.029						
2198	360	420	2	0.030						
2199	760	105	200	0.349	0.369					✓
2200	2300	10	6	0.791						*
2201	570	25	2	0.017						
2202	2600	20	5	0.198						
2203	3350	<5	1	<0.008						
2204	3000	80	14	0.066						
2205	4550	65	22	0.132						
2206	1650	820	190	<0.008						

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

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OFFICER



ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

		142.2.08.05693				20/09/88	18714	2 OF 5		
TUBE No.	SAMPLE No.	Cr	Ni	As	Au	AuChk				
1	2207	400	415	5	<0.008	-				
2	2208	170	115	5	<0.008	-				
3	2209	170	170	2	<0.008	-				
4	2210	210	110	2	0.025	-				
	2211	160	135	2	<0.008	-				
5	2212	230	135	3	0.011	-				
7	2213	180	135	3	0.012	-				
8	2214	150	125	1	0.014	-				
9	2215	240	185	<1	<0.008	-				
10	2216	220	205	2	0.025	-				
11	2217	180	105	<1	0.050	0.056	✓			
12	2218	200	115	1	0.015	-				
13	2219	220	205	2	<0.008	-				
14	2220	210	105	1	<0.008	-				
15	2221	150	150	<1	0.009	-				
16	2222	210	250	3	<0.008	-				
17	2223	200	155	1	0.031	-				
18	2224	250	185	1	0.009	-				
19	2225	180	135	1	0.014	-				
20	2226	220	175	1	<0.008	-				
21	2227	80	95	3	0.017	-				
22	2228	65	15	1	0.023	-				
23	2229	210	20	<1	<0.008	-				
24	2230	220	15	<1	<0.008	-				
25	2231	370	<5	<1	<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.

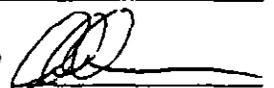
ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

		142.2.08.05693				20/09/88	18714		3 OF 5	
TUBE No.	SAMPLE No.	Cr	Ni	As	Au	AuChk				
1	2232	320	<5	<1	<0.008	--				
2	2233	280	215	18	<0.008	--				
3	2234	1100	540	64	<0.008	--				
4	2235	270	15	5	<0.008	--				
5	2236	2100	5	<1	<0.008	--				
6	2237	310	120	7	<0.008	--				
7	2238	2900	10	<1	0.044	--				
8	2239	200	265	10	<0.008	--				
9	2240	860	120	2	<0.008	--				
10	2241	190	130	<1	<0.008	--				
11	2242	210	200	<1	<0.008	--				
12	2243	210	185	9	<0.008	--				
13	2244	170	115	3	<0.008	--				
14	2245	1500	215	7	<0.008	--				
15	2246	1900	1300	10	<0.008	--				
16	2247	450	915	110	<0.008	--				
17	2248	320	30	1	<0.008	--				
18	2249	420	30	8	<0.008	--				
19	2250	220	40	1	<0.008	--				
20	2251	330	10	1	<0.008	--				
21	2252	470	<5	<1	<0.008	--				
22	2253	400	5	<1	<0.008	--				
23	2254	300	130	36	<0.008	--				
24	2255	950	<5	4	<0.008	--				
25	2256	310	150	7	<0.008	--				

Results in ppm unless otherwise specified
 T = element present: but concentration too low to measure
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 -- = element not determined

AUTHORISED OFFICER



ANALABS

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

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		142.2.08.05693				20/09/88	19714		4 OF 5	
TUBE No.	SAMPLE No.	Cr	Ni	As	Au	AuChk				
1	2257	250	60	4	<0.008	-				
2	2258	200	105	20	<0.008	-				
3	2259	380	95	5	<0.008	-				
4	2260	220	35	5	<0.008	-				
	2261	230	45	2	<0.008	-				
6	2262	230	45	4	<0.008	-				
7	2263	310	65	4	<0.008	-				
8	2264	230	40	3	<0.008	-				
9	2265	<u>2500</u>	960	3	<0.008	-				
10	2266	320	30	80	0.012	-				
11	2267	200	150	2	<0.008	-				
12	2268	340	300	2	<0.008	-				
13	2269	610	300	39	0.011	-				
14	2270	290	70	5	<0.008	-				
15	2271	270	40	4	<0.008	-				
16	2272	480	15	1	<0.008	-				
17	2273	700	5	<1	<0.008	-				
18	2274	900	10	2	<0.008	-				
19	2275	480	15	37	<0.008	-				
20	2276	480	30	14	<0.008	-				
21	2277	360	195	12	<0.008	-				
22	2278	540	25	2	<0.008	-				
23	2279	560	35	1	<0.008	-				
24	2280	160	70	1	<0.008	-				
25	2281	420	20	<1	<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.

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		142.2.08.05693				20/09/88	18714	5 OF 5		
TUBE No.	SAMPLE No.	Cr	Ni	As	Au	AuChk				
1	2282	320	45	7	<0.008	-				
2	2283	85	70	80	0.106	0.093	✓			
3	2284	210	50	9	<0.008	-				
4	2285	260	20	4	0.009	-				
	2286	500	45	5	<0.008	-				
5	2287	720	200	6	<0.008	-				
7	2288	550	200	6	<0.008	-				
8	2289	220	210	3	<0.008	-				
9	2290	270	70	21	0.009	-				
10	2291	260	70	57	0.008	-				
11	2292	590	10	3	0.014	-				
12	2293	530	30	140	<0.008	-				
13	2294	600	45	21	0.013	-				
14	2295	540	100	22	<0.008	-				
15	2296	240	85	3	<0.008	-				
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	1	0.008	0.008				
24	UNITS	PPM	PPM	PPM	PPM	PPM				
25	METHOD	401	101	114	309	309				

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



CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Poltock

PROJECT EL 1124

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Au	Ag	Ni	Cu					
2282	11100N	1047SE	1.6m	Alluvium	<.008	7	45	320					
2283		10500E	4.3m	dk green wack rock + ^{10.09%} 7% vein frags	.106	80	70	85					
2284		1052SE	3.9m	Alluvium	<.008	9	50	210					
2285		10550E	3.9m	"	.009	4	20	260					
2286		1057SE	3.2m	"	<.008	5	45	500	- mod amount				
2287		10600E	3.2m	angular fragments of dk grey fine grained rock in clay matrix	<.008	8	200	720					
2288		1062SE	4.5m	clayey alluvium - weathered bedrock	<.008	6	200	550					
2289		10650E	1.5m	orange brn weathered bedrock	<.008	3	210	220	- ✓ mod amount				
2290	11200N	10500E	4.1m	Clayey alluv with quartz pebbles	.009	21	70	270					
2291		1052SE	5.0m	"	.008	57	70	260					
2292		10550E	2.3m	Alluvium - qb sand + pebbles	.014	3	10	590					
2293		1057SE	2.7m	Cream brn wack rock / alluv?	<.008	140	30	530					
2294		10600E	3.3m	Clay grey - cream orange	.013	21	45	600					
2295		1062SE	1.9m	Clayey weather bedrock	<.008	22	100	540					
2296		10650E	1.9m	Clayey alluvium + pebbles	<.008	3	85	240				✓	

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. POLTOCK

PROJECT EL11124

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2008

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES							
					Fe	As	Ni	Cr				
2258	11300N	10125E	10.0m	Alluvium	<0.02	20	105	200				
2259		10150E	1.2m	"	<0.02	5	95	300				
2260		10175E	1.8m	"	<0.02	5	35	220				
2261		10200E	1.7m	"	<0.02	2	45	230				
2262		10225E	1.9m	"	<0.02	4	45	230				
2263		10250E	4.3m	"	<0.02	4	65	310				
2264		10275E	2.8m	"	<0.02	3	40	230				
2265		10300E	4.2m	dk green, talcose, dolomite/um?	<0.02	3	96	2500				
2266		10325E	0.2m	orange brn fresh dolomite frags	<0.02	20	30	320				
2267		10350E	2.8m	dolomite	<0.02	2	150	200				
2268		10375E	5.5m	"	<0.02	2	300	340				
2269		10400E	3.4m	cream weather rock - dolomite?	<0.01	39	300	610				
2270		10425E	1.9m	clay + angular cherty frags	<0.02	5	70	290				
2271		10450E	2.8m	Alluvium? clay + 95 sand	<0.02	4	40	270				
2272		10475E	1.2m	grey quartzose	<0.02	1	15	480				
2273		10500E	1.8m	white - dk grey, 95 sand	<0.02	<1	5	700				
2274		10525E	1.6m	carbonaceous sand B'Rock/Alluv?	<0.02	2	10	900				
2275		10550E	5.7m	clayey weather rock or Alluv?	<0.02	37	15	480				
2276		10575E	6.7m	grey - red brn clay " " ?	<0.02	14	30	480				
2277		10600E	11.7m	cream-grey, med grnd, weather rock	<0.02	12	185	360				
2278		10625E	0.8m	grey-green 95 sand	<0.02	2	25	540			✓	

025

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N POLTOCI

PROJECT E11124

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WARD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2005

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Au	As	Ni	Cu					
2242	1140CN	10700E	5.0m	clay sft cream - yel	<.002	<1	200	210					
2243		10675E	4.2m	khaki mud grad weath dolomite	<.002	9	125	210					
2244		10650E	4.1m	clayey weath dolomite	<.002	3	115	170					
2245		10625E	7.7m	sft clay grey - cream	<.002	7	215	1500					
2246		10600E	6.0m	grey fine grd siltst / or weath carbonate?	<.002	10	1300	1900					
2247		10575E	6.9m	grey brn - sandy clay Perm mudst?	<.002	110	915	450					
2248		10550E	0.7m	Alluvium - clay - grit + cobbles	<.002	1	30	320					
2249		10525E	13.5m	carbonic clay - sand + silic frags	<.002	8	80	420					
2250		10500E	2.1m	Alluvium sand - clay - pebbles	<.002	1	40	220					
2251		10475E	1.4m	grey - carbonace, fine gr sand	<.002	1	10	630					
2252		10450E	0.9m	white qb sandstone	<.002	<1	<5	470					
2253		10425E	2.8m	whk - grey angular silic frags	<.002	<1	5	400					
2254		10400E	7.1m	orange - yellow weath dolomite	<.002	36	130	800					
2255		10375E	1.2m	Alluvium	<.002	4	<5	950					
2256		10350E	1.8m	orange brn - weath dolomite	<.002	7	150	510					
2257		10300E	1.1m	Alluvium	<.002	4	60	250					✓

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026

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N POLTOCI

PROJECT EL 11/84

LABORATORY ANALABS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 28305

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					As	As	Ni	Cr					
2227	11SWN	10350E	3.5m	orange-brown with celestite	0.017	3	95	80					
2228		10375E	2.7m	white-grey brn quartzose silt - cont'd be weathered carbonate?	0.023	1	15	65					
2229		10400E	3.6m	white quartzite sand - frags	<0.008	<1	20	210					
2230		10425E	1.4m	" " " "	<0.008	<1	<5	220					
2231		10450E	1.0m	fine white sp	<0.008	<1	<5	370					
2232		10475E	9.4m	" " " "	<0.008	<1	<5	320					
2233		10500E	9.4m	grey brn clayey - quartzite frags	<0.008	18	215	280					
2234		10525E	7.2m	grey fine grained silt, weather carbonate?	<0.008	64	540	1100					
2235		10550E	2.7m	white-grey quartzose	<0.008	5	15	270					
2236		10575E	2.1m	grey brn fine sand - silic frags	<0.008	<1	5	2100					
2237		10600E	11.0m	cream brown - carbonate clay	<0.008	7	120	810					
2238		10625E	0.8m	fine white, fine, quartzose sp.	0.044	<1	10	2900					
2239		10650E	6.6m	khaki, fine med with debris	<0.008	10	265	200					
2240		10675E	1.2m	cream - orange clay?	<0.008	2	120	860					
2241		10700E	2.8m	" " " + debris	<0.008	<1	130	190					✓

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ROGER POLTOCI GEOLOGICAL PTY. LTD.

- 1-14 NEW

CLIENT METALS Expt
 PROJECT EL11/84
 PROSPECT WED RIVER

SAMPLE RECORD AND ANALYTICAL DATA SHEET
 LABORATORY ANALYSIS
 SAMPLE TYPE WACKER

COLLECTED BY: N. POLTOCI
 DATE DISPATCHED: 1-8-88
 DATE RECEIVED:

A 2008

SAMPLE NUMBER	LOCATION	Depth	DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
RP 2124	11600N	10700E	1.5m Tan clay + dolerite frags	.022	1	90	200						
2125		10675E	4.2m Grey/green clay + few dolerite frags	.010	1	130	180						
2122		10650E	11.8m Gravel or Pam mud?	<.008	10	530	400						
2123		10625E	8.0m Grey/green clay + dolerite frags	.012	7	180	170						
2126		10600E	8.4m Clay grey-brn	.010	15	165	090						
2127		10575E	8.6m Clay = pebbles Alluv.?	<.008	20	125	680						
2128		10550E	14.6m Clay soft grey + white vesic.? scler.?	.009	3	105	280						
2129		10525E	15.6m Clay orange-red, soft	.018	8	160	220						
2130		10500E	12.4m " cream "	.019	7	295	350						
2131		10475E	2.1m White Qtz sand, crumbly	<.008	<1	20	120						
2132		10450E	1.4m " " "	<.008	<1	10	45						
2133		10425E	1.2m White quartz fragments - some?	<.008	<1	15	100						
2134		10400E	2.4m Red brn, = silic.?, porous, rounded vesicle like cavities	<.008	510	30	90						
2135		10375E	1.6m White quartz sand - weath rock	.018	13	15	40						
2136		10350E	9.1m Mudst/clay pink-yellow mottled	.015	15	130	3950						
2137		10325E	1.5m Clay orange-brn, dolerite frags	<.008	41	150	490						
2138		10300E	1.7m Dolerite, weath orange-brn	.021	11	110	160						✓

620029

028

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT Metal Exptn
 PROJECT EL 11/24
 PROSPECT WELD RIVER

SAMPLE RECORD AND ANALYTICAL DATA SHEET

LABORATORY ANALYSIS
 SAMPLE TYPE WACKER

COLLECTED BY: N-POLTOCI
 DATE DISPATCHED: 1-8-88
 DATE RECEIVED:

A 2826

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Al	As	Ni	Co					
2139	11700N	10250E	4.0m	Dolerite weath, orange brn	<.008	5	170	210					
2140		10275E	2.8m	Clay weath rock? orange-yellow	.014	58	270	420					
2141		10300E	9.0m	" " dolerite? orange-red	.012	9	265	240					
2142		10325E	2.6m	Siltic white-gray	<.008	<1	10	30					
2143		10350E	1.5m	Crumbly sfs, white, fine-med grd	<.008	<1	15	50					
2144		10375E	2.4m	Fine grd siltic frags in orange-yel clay	.091	42	15	150					
2145		10400E	1.6m	White qtzose sand - bedrock	<.008	<1	20	60					
2146		10425E	1.3m	" " " " - qtzose frags	<.008	<1	10	25					
2147		10450E	3.0m	qtzose sand, clayey	.027	<1	20	340					
2148		10475E	14.5m	Clay, cream-gray, soft	.014	80	680	300					
2149		10500E	10.8m	" " " "	.022	78	180	460					
2150		10525E	10.4m	" " " "	.035	10	125	540					
2151		10550E	12.6m	Siltic frags, fine grd, dk grey in fine carbonate clay matrix	.008	300	3000	80					
2152		10575E	3.1m	as above	.018	59	295	95					
2153		10600E	10.4m	Clay white soft	(.080)	10	155	450					
2154		10625E	10.5m	Dolerite, soft, gray green, weath	.011	12	245	170					
2155		10650E	12.8m	" olive green, weath	.011	4	110	230					
2156		10675E	6.4m	" pale orange, weath	.009	3	230	240					
2157		10700E	4.0m	" green "	<.008	2	115	200				✓	

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029

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT Metal Exp'n

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: ~~RPO~~ N-POLTOCI

PROJECT EL11/84

LABORATORY ANALYSIS

DATE DISPATCHED: 1-8-88

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2506

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Al	As	N	Cr					
2158	11800N	10650E	6.0m	Clay, cream-thick, soft-base	.011	4	125	270					
2159		10625E	4.0m	Dolerite, weak, orange-brn ^{hard rock}	.009	2	180	280					
2160		10600E	15.6m	Clay, yel-brn, soft	.008	3	115	300					
2161		10575E	8.4m	" cream-gray "	.008	44	235	260					
2162		10550E	11.4m	" " "	.018	73	315	260					
2163		10525E	15.6m	" gray soft	.032	68	340	260					
2164		10500E	0.8m	Qtzose, white, hard silic frags	<.005	1	15	310					
2165		10475E	11.6m	Clay cream-brn soft	.601	70	175	2350					
2166		10450E	0.8m	Qtzose frags - possibly coarse	.020	2	10	910					
2167		10425E	5.3m	Clay/sand, cream-orange brn	.046	11	25	540					
2168		10400E	0.9m	Qtzose, gray-white, fine silic frags	<.005	<1	10	1550					
2169		10375E	3.0m	" " " cherty	<.005	<1	10	70					
2170		10350E	0.8m	" " "	<.005	<1	5	75					
2171		10325E	0.9m	" " "	<.005	<1	10	50					
2172		10300E	0.9m	" " "	<.005	<1	10	1700					
2173		10275E	5.0m	Dolerite, weak, orange-brn	.010	1	190	270					
2174		10250E	1.0m	Dolerite	.008	4	45	600					✓

580031

030

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT Metals Expln
 PROJECT En 11/24
 PROSPECT WELD RIVER

SAMPLE RECORD AND ANALYTICAL DATA SHEET

LABORATORY ANALABS
 SAMPLE TYPE WACKER

COLLECTED BY: N-Poltock
 DATE DISPATCHED: 1-8-88
 DATE RECEIVED:

A 2808

SAMPLE NUMBER	LOCATION	Depth	DESCRIPTION	ANALYSES							
				Fe	Al	Ni	Cr				
2175	11900N	10250E	1.4m Dolomite, orange, weath	.017	4	105	520				
2176		10275E	3.4m clayey weath rock, orange brn	.018	5	150	210				
2177		10300E	8.5m Qtzose, white, bedrock	<.002	<1	10	640				
2178		10325E	1.2m " " cherty?	<.002	<1	<5	20				
2179		10350E	1.2m " cream - lamination	.110	68	20	1650				
2180		10375E	5.6m " " - brn	.112	60	20	2150				
2181		10400E	11.0m clay + L' silice frags + fine chromite grains	.013	47	4400	3800				
2182		10425E	9.0m pale grey - cream brn clay - BR?	.105	17	40	2700				
2183		10450E	8.2m clay	.148	36	70	1000				
2184		10475E	23.8m L' silice frags <5mm, in carbonaceous matrix	.085	80	60	55				
2185		10500E	15.5m grey-green clay + dolomite frags	.048	53	180	240				
2186		10525E	11.0m clay pale grey - cream brn	.088	40	415	450				
2187		10550E	7.1m clay yel - red brn	.036	10	260	330				
2188		10575E	0.9m L' silice frags in clay matrix	.028	15	15	150				
2189		10600E	4.7m cream - red brn clay weath dil	.008	2	185	220				
2190		10625E	11.0m clay weath rock, orange - cream	<.002	6	280	240				
2191		10650E	13.7m olive green, weath dolomite	<.002	2	125	190				

580032

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N Poltock

PROJECT EL 11/24

LABORATORY ANALABS

DATE DISPATCHED:

PROSPECT WILD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2836

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES							
					Au	Ag	Ni	Cr				
2192	12000N	10650E	4.2m	dk brn - olive clay + dolerite	<.008	5	260	150				
2193		10625E	10.2m	"	<.008	1	105	130				
2194		10600E	7.7m	khaki clay - weath mud grad dolerite	<.008	2	145	130				
2195		10575E	4.6m	clay cream - orange brn - weath dol?	<.008	4	170	230				
2196		10550E	6.0m	" " - yel green, " "	<.008	5	205	240				
2197		10525E	3.8m	" " - orange brn - weath dol?	.027	3	85	150				
2198		10500E	4.7m	white - orange brn - weath dolerite?	.030	2	420	360				
2199		10475E	8.6m	clay orange - olive brn (0.369)	.349	200	105	760				
2200	*	10450E	2.9m	brn - white weath rock?	.791	6	10	2300 (PHE)				
2201		10425E	1.0m	white gypse fine grnd.	.017	2	25	570				
2202		10400E	1.4m	dk brn clay/sand matrix + L frags of zhc material + chromite	.198	5	20	2600				
2203		10375E	0.5m	grey - white gypse + micaceous.	<.002	1	<5	3350				
2204		10350E	12.6m	yel green - cream weath dolerite?	.066	14	80	3000				
2205		10325E	8.9m	clay + zhc frags chromite green	.132	22	65	4550				
2206		10300E	7.8m	clay weath dolerite, orange brn	<.008	190	820	1650				
2207		10275E	2.6m	orange - yel weath dolerite	<.008	5	415	400				✓
2208												

580033

032

ROGER POLTOCI GEOLOGICAL PTY. LTD.

CLIENT Metab Exploration

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N POLTOCI

PROJECT EL 11/84

LABORATORY ANALABS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2005

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES							
					AV	AS	N _v	CF				
2208	12100N	10200E	0.9m	olive-green clay + dolomite	<0.008	5	115	170				
2209		10225E	5.1m	cream-green weath dolomite	<0.008	2	170	170				
2210		10250E	1.6m	yellow-green clay + dolomite frags	0.025	2	110	210				
2211		10275E	2.8m	cream-brn weath dolomite	<0.008	2	135	160				
2212		10300E	1.4m	organic clays + dolomite frags	0.011	3	135	230				
2213		10325E	5.9m	olive green weath dolomite	0.012	3	335	160				
2214		10350E	3.2m	" " + dolomite frags	0.014	1	125	150				
2215		10375E	5.0m	cream-brn clay - dolomite	<0.008	<1	185	240				
2216		10400E	3.9m	" " "	0.025	2	205	220				
2217		10425E	7.0m	" " " dolomite (0.025)	0.056	<1	105	180				
2218		10450E	4.5m	soft clay, cream-yellow brn	0.015	1	115	200				
2219		10475E	2.7m	clay cream-orange brn - dolomite	<0.008	2	205	220				
2220		10500E	3.2m	" " "	<0.008	1	105	210				
2221		10525E	5.7m	" " "	0.009	<1	150	150				
2222		10550E	3.5m	" " "	<0.008	3	250	210				
2223		10575E	6.2m	" " "	0.031	1	155	200				
2224		10600E	1.9m	" " " + fresh dolomite frags	0.009	1	185	250				
2225		10625E	3.4m	" " "	0.014	1	135	180				
2226		10650E	4.0m	" " "	<0.008	<1	175	220				✓

580034

033

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT **MINTAKS EXPLORATION LTD**
 PROJECT **WELD RIVER 11/84**
 PROSPECT

SAMPLE RECORD AND ANALYTICAL DATA SHEET
 LABORATORY ANALYSIS
 SAMPLE TYPE **Rock**

COLLECTED BY: **R. Poltock**
 DATE DISPATCHED:
 DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
RP 1801	10500E	11030N	Permian tillite river gravels minor pyrite	.02	13	35	84						
1802	10500E	12200N	Dolerite	<0.008	2	45	170						
1803	10000E	12200N	Carbonate (sd) with chalcidonic veinings	<0.008	1	20	10						
1804	10267E	12100N	Basalt/dolerite fine grained.	<0.008	1	55	9.03%						
1805	1037SE	12100N	Chert/quartzite, silicified, chalcid veins	<0.008	1	25	140						
1806	10580E	11900N	fine, silicified, chalcidonic with vuggy cavities	.033	200	175	230						
1807	10450E	11100N	fine grained, abundant chalcid veinlets	.044	16	30	140						
1808	10425E	11100N	" " silicified	.012	8	40	200						
1809	10425E	11100N	Shear zone, talc horn mag schist, dolerite dyke	<0.008	6	610	0.32%						
1810	10225-260	11100N	Grywaacke siltstone	<0.008	5	120	380						
1811	10250	11100N	Basalt dyke	.014	3	100	170						
1812	10500	11050N	Altered mafics?	.023	29	50	30						
1813	10112	10800N	Latite overlying alluvials.	<0.008	1200	60	150						
1814	10700	10950N	Mudst-grywaacke (P?), dk grey shale (E?)	<0.008	60	160	270						
1815	25m upstream from 1814		Gabbro-dolerite	<0.008	7	60	130						
1816	Forster Highway	11900N	talc clay from excavator pit	.015	34	300	2.25%						
1817	10835E	10500N	Qtz feld cryst tuft? Permian tillite block										
1818	10330E	10300N	Brecciated chert + talc magnetite schist.	<0.008	2	225	0.26%						
1819	10780E	10700N	Quartzose greyhilly Tertiary										
1820	10730E	10700N	Silicified quartzite/chert, minor magnetite	<0.008	51	70	0.81%						
1821	10450E	11500N	Basalt intrusive, cherted margin fine pyroclastic, chloritized mafics	<0.008	2	50	140						

580035

CLIENT METALS EXPLORATION LTD
PROJECT WELD RIVER EL 11/84
PROSPECT

SAMPLE RECORD AND ANALYTICAL DATA SHEET
LABORATORY ANA LAB
SAMPLE TYPE Rock

COLLECTED BY: R. Pollock
DATE DISPATCHED:
DATE RECEIVED:

A 2805

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
RP 1822	1040E	11200N	Basic intrusive manganese part of same body as 1821.	<0.008	<1	340	670						
1823	10350E	11190N	Talc schist - altered ultramafic chromite magnetite	.008	1	600	0.43%						
1824	10550E	11625N	Nickle reward shaft opaline silica + yellow sulphur stain	.013	57	60	45						
1825	10200-225E	10100N	Dolerite, dense py, weakly magnetic	<0.008	3	100	250						
1826	10512E	10100N	Permian mudstone?	.014	19	25	75						
1827	10725E	11100N	Manganese	<0.008	<1	40	100						
1828	9900E	11300N	Carbonate sed or altered mafic?	<0.008	1	20	<5						
1829	9900E	11225N	Greyblilly Tertiary.	<0.008	5	65	160						
1830	Kingston - Hornville Rd		Jurassic dolerite	<0.008	<1	50	120						
1831	10500E		River cobble Permian, calc silicate, manganese	.02	4	35	63						
1832			Adit north bank silicified unit partial	.05	9	35	76						
1833			" " " " tunnel side	.04	6	20	28						
1834			" " " " backs.	.03	13	40	108						
1835			X Per con. chromite, 3 fine Au, 0.86E										
1836			Prospect pit	.03	320	270	1220						
1837			River workings	.02	8	30	1.8%						
1838	10525-55E	10400N	Float silicified and < limonitic	.02	27	115	6920						
1839	10300E	10200N	Talc schist - greywacke, conglom	.01	1	310	5920						
1840	10150E	10200N	Perm' mudst - pebbly, < limonitic	.02	18	225	4060						
1841	10150E	10200N	Sandstone? < limonitic abundant vesicles	.01	12	25	299						
1842	Access track		Permian hornfelsed tuffite - dolerite contact	.02	4	45	112						

580036

035

ROGER POLTOCK GEOLOGICAL PTY. LTD.

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JECT EL 11/24

OSPECT WELD RIVER

SAMPLE RECORD AND ANALYTICAL DATA SHEET

LABORATORY ANALYSIS

SAMPLE TYPE WACKER

COLLECTED BY: N Poltock

DATE DISPATCHED:

DATE RECEIVED:

A 2008

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					A ₁	A ₂	N ₁	Cr					
1901	10900N	10500E		Altered ultramafic?	0.008	230	20	50					
				0 - 2.5m soft alluv, 2.5 - 4.9m cobbles									
1902	10900N	10525E	4.9m	Altered ultramafic?	0.048	150	50	45					
				hard cobbles at 2m.									
1903	10900N	10550E	2.1m	clay alluv + dolerite cobbles									
1904	10900N	10575E	3.8m	Alluv " "									
				2.5 - 3.5m hard cobbles.									
1905		10600E	4.1m	Alluv sand - clay + dolerite cobbles									
				3.5m hard cobbles									
1906		10625E	3.2m	Alluv clay - sand alluv									
1907		10650E	1.9m	" dolerite - quartzite fragments									
1908		10675E	4.2m	" " "									
1909		10700E	5-3m	" clayey + pebbles.									
1910		10725E	7.6m	" dolerite, quartzite									
1911		10750E	2.5m	" clay - fine gr sand.									

580037

036

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION LTD

SAMPLE RECORD AND ANALYTICAL DATA SHEET

PROJECT EL 11/24

LABORATORY ANALYSIS

COLLECTED BY: N. Poltock

PROSPECT WEDD RIVER

SAMPLE TYPE WACKER

DATE DISPATCHED:

DATE RECEIVED:

A 2832

SAMPLE NUMBER	LOCATION	Depth	DESCRIPTION	ANALYSES									
				Au	Ag	Ni	Cr						
RP 192	10200N	10000E	6-8m @/zite some or bullock?	0.009	<1	5	7						
1913		10025E	13.2m Alluv dk brown organic + scattered qtzite fragments. Hard gravel at 6m + 12m.										
1914		10050E	15.4m Bullock - white carbonate hard gravel between 13 - 15.4 m	<0.008	<1	40	50						
1915		10075E	7.8m Alluv clay + pebbles dolerite and quartzite										
1916		10100E	4.7m Alluv, clayey & qtzite frag's										
1917		10125E	4.6m Bullock white carbonate.	<0.008	19	55	25						
1918		10150E	11.9m Alluv - black mudstone + gravel hard gravel bed 5.0 - 6.5m										
1919		10175E	7.9m Alluv qtzite pebble in blue grey clay										
1920		10200E	5.3m Alluv dolerite pebble in clay. hard gravel 4.0 - 5.3m										
1921		10225E	4.9m Alluv dolerite pebbles hard gravel 2.0 - 4.6m										
1922		10250E	3.0m Alluv qtzite pebbles hard gravel 1.6 - 3.0m										
1923		10275E	4.7m Alluv qtzite + dolerite pebbles hard gravel 2.0 - 4.7m										

580038

037

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION LTD

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Pollock

PROJECT EL 4/84

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WIND RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 28308

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
RP 1924	10800N	10300E	6.2m Talc schist magnetite hard gravel 4.0 - 6.2m	IS	11	40	1850						
1925		10325E	6.1m Talc schist - magnetite	<0.008	2	755	1800						
1926		10350E	6.1m " " "	0.008	1	910	0.30%						
1927		10350E	4.3m Alluv										
1928		10375E	4.2m Talc schist magnetite	<0.008	3	810	0.26%						
1929		10400E	4.3m Chert - quartzite	0.090	890	765	790						
1930		10425E	4.2m Alluv dark brown clay - sand										
1931		10450E	2.2m " quartz fragments										
1932		10475E	3.0m " white calcified fragments										
1933		10500E	2.7m Bedrock? cream - grey	0.059	42	35	10						
1934		10525E	2.3m " ?	0.016	96	35	70						
1935		10550E	2.9m Alluv? dk brown - orange - dolomite										
1936		10575E	3.6m " grey - brown clay										
1937		10600E	5.8m " " " + dolomite										
1938		10625E	10.0m Bedrock dolomite	<0.008	7	160	190						
1939		10650E	5.9m Alluv clayey maybe with dolomite hard gravels 3.5m										
1940		10675E	14.1m Bedrock dolomite	<0.008	16	55	170						
1941		10700E	11.0m Alluv frag/piece + quartz & dolomite pebbles										
1942		10725E	8.8m Bedrock - dolomite	0.014	200	140	330						
1943		10750E	6.3m " "	<0.008	10	100	300						

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038

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION LTD

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Poltock

PROJECT EL 11/84

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WILD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 283

SAMPLE NUMBER	LOCATION	Depth	DESCRIPTION	ANALYSES									
				As	Ag	Ni	Cr						
RP 1944	10700N	10000E	4-3m Alluv g/size pebbles in brown matrix										
1945		10025E	7.8m " clay inclusion hard gravel to 2.5m.										
1946		10050E	6.7m Alluv clay + scattered pebbles										
1947		10075E	14.5m " 7.0-14.0m hard gravel										
1948		10100E	8.4m " ? clay										
1949		10125E	5.5m " clay + subrounded g/size frags										
1950		10150E	7.2m Alluv/bedrock (dolomite)										
1951		10175E	6.5m Bedrock mudstone/siltstone?	<0.008	6	495	1200						Drum PlE
1952		10200E	6.0m " "										
1953		10225E	5.8m Alluv sandy clay, hard base may be bedrock										
1954		10250E	4.0m Alluv grey green clay, minor pebbles										
1955		10275E	5.7m " "										
1956		10300E	3.8m " grey green + quartzite pebbles										
1957		10325E	4.0m Bedrock talc ochre magnetite	<0.008	<1	930	0.29%						✓
1958		10350E	3.6m Alluv green clay, dolomite + g/size pebbles										
1959		10375E	5.6m Bedrock?, 2.5-4.5 hard cobbles	<0.008	17	950	0.34%						
1960		10400E	4.9m Alluv, quartzite cobbles										
1961		10425E	10.1m Alluv, 7.5-9.0m cavity										

580040

039

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION LTD

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N Poltock

PROJECT En 4124
PROSPECT WELD RIVERLABORATORY ANALYSIS
SAMPLE TYPE WACKER

DATE DISPATCHED:

DATE RECEIVED:

A 22-

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Au	Ag	Ni	Cr					
RP 1962	10700N	10450E	2.9m	Clay alluv w bedrock?									
1963		10475E	4.4m	Alluv gneiss dolerite chert Rf									
1964		10500E	9.4m	" " "									
1965		10525E	7.8m	Bedrock? fine grained, soft, limy joint Permian?	0.010	4	20	150					
1966		10550E	3.9m	Bedrock - dolerite	0.010	16	105	170					
RP 1967	10600N	10500E	1.2m	Bedrock - quartzite -	0.013	1	25	890					
1968		10525E	0.9m	" "	0.063	<1	15	20					
1969		10550E	3.0m	" dolerite	0.009	<1	25	150					
1970		10575E	1.4m	" quartzite	<0.008	<1	5	120					
1971		10600E	5.6m	" "	0.283	<1	10	80					
1972		10625E	10.0m	" cream brn - soft clayey	<0.008	21	50	75					
1973		10650E	1.8m	" quartzite ruggy cavities	0.041	1	<5	100					
1974		10675E	1.2m	" " "	0.069	1	10	<0.01%					
1975		10700E	0.8m	" "	0.018	<1	10	280					
1976		10725E	6.0m	Alluv orange clay + gneiss pebbles									
		10750E	14.8m	Alluv no sample									
1977		10775E	10.6m	Bedrock, weath pink/brown, dolerite	<0.008	49	35	500					
1978		10800E	?	Alluv?	<0.008	11	35	100					
1979		10825E	14.0m	Alluv partially consolidated clay many pebbles	<0.008	33	75	150					

580041

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT ⁰⁴⁰ METALS EXPLORATION LTD

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Poltock

PROJECT EL 11/24
PROSPECT WELD RIVER

LABORATORY ANALYSIS

DATE DISPATCHED:

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2002

SAMPLE NUMBER	LOCATION		Depth	DESCRIPTION	ANALYSES								
					Au	As	Ni	Cr					
RP 1980	10600N	10850E	12.8m	Alluv	<0.008	4	55	110					
1981		10875E	5.6m	" clayey - scattered blue pebbles									
1982		10900E	6.7m	" " " "									
2001	10600N	10475E		Grey-green mudstone bedrock?	.09	75	890	171					
2002		10450E		Angular chert frags in a clay matrix	.02	24	620	41					
2003		10425E		Fine clayey grit alluv?	.22	42	105	893					
2004		10400E		Kalke serpentine, + magnetite	.03	10	1650	1950					
2005		10375E		Alluv' white quartzose gravel in sandy clay matrix	.04	5	60	1680					
2006		10350E		Grey-brn clay	.02	12	290	824					
2007		10325E		Alluv? quartzose pebbles in green gritty matrix	.02	18	200	418					
2008		10300E		Grey-yellowish clay	.03	9	370	3120					
2009		10275E		" " " + dolerite pebble Alluv?	.02	16	280	1390					
2010		10250E		Clay dk grey-cream brn	.02	3	170	583					
2011		10225E		Alluv carbonaceous gritty clay	.05	75	1300	264					
2012		10200E		Dolerite med grit weathered	.03	6	300	419					

580042

041

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Poltock

PROJECT EL 11/84

LABORATORY ANALABS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2836

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
Re 1983	10500N	10750E	Grey compact sand/clay + pebbles Perm' mudstone?	.02	7	25	109						
1984		10725E	" " " "	.01	4	25	130						
1985		10700E	Grey- yel brn clay	.03	11	20	134						
1986		10675E	Angular quartzite gravel in blue grey clay matrix	.02	6	35	130						
1987		10650E	Serpentine pale green, < talc	.03	9	1250	5890						
1988		10625E	Mudstone (Perm) pale brn	.06	1	80	685						
1989		10600E	White quartzite bedrock	.17	<1	15	204						
1990		10600E	" " "	.03	<1	15	216						
1991		10575E	" " "	.02	<1	15	23						
1992		10550E	" " "	.02	<1	25	216						
1993		10525E	" " "	.02	<1	10	153						
1994		10500E	Carbonaceous clay	.34	610	1850	1910						
2000		10500E	Carbonaceous clay	.27	160	275	1350						
1995		10475E	Chert fragments in carb' clay matrix	.04	16	90	88						
1999		10475E	Quartzite fragments in clay	.08	6	130	52						
1996		10450E	Quartzite sand	.03	2	15	458						
1997		10425E	" " " "	.03	2	20	382						
1998		10400E	Mudst or basic intrusion, tan, fine	.03	9	780	760						
2020		10375E	Talc schist or minor magnetite	.02	5	870	3160						

580043

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Poltock

PROJECT ER 11/04

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WELD RIVER

SAMPLE TYPE WACKER

DATE RECEIVED:

A 2001

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Ag	Ni	Cr						
RP 2029	10400N	10200E	Talc schist, khaki, minor magnetite	.02	3	1900	3360						
2028		10225E	" " " "	.03	<1	3200	2400						
2027		10250E	Mudst, foliated, talc minor mag	.03	2	1350	3350						
2026		10275E	Mudst, flecked (teffae) + mag	.02	17	520	5530						
2025		10300E	Talc schist, khaki - massive + mag	.02	1	920	1740						
2024		10325E	" " " "	.01	3	980	2460						
2023		10350E	Mudst, flecked (teffae), khaki	.05	4	370	667						
2022		10375E	Talc schist, khaki - massive	.03	51	1200	2260						
			+ magnetite										
2021		10400E	Mudstone (bedrock) cream brn + quartzite fragments	.05	110	160	844						
2020		10425E	Cream brn with silice unit no magnetite	.04	100	60	994						
2031		10450E	Silt/mudst cream, no mag	.03	22	45	1770						
2032		10475E	White quartzite	.02	1	20	430						
2033		10500E	" "	.03	<1	10	34						
2034		10525E	" "	.03	<1	10	178						
2035		10550E	Talc schist, grey-green, no mag	.02	20	1450	2980						
2036		10575E	Perrin mudst, subrounded quartz fragments	.03	19	15	171						
2037		10600E	" "	.01	18	15	211						

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ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT ⁰⁴⁴ METALS EXPLORATION

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N. Pollock

PROJECT EL 11/84
PROSPECT WED RIVER

LABORATORY ANALABS
SAMPLE TYPE WACKER

DATE DISPATCHED:
DATE RECEIVED:

A 2800

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	As	Ni	Cr						
RP 2032	10300N	10550E	Perm mudst/tillite, dk grey	.01	9	20	106						
2039		10525E	Green-brn, talcos, magnetic hematite	.01	23	340	1.05%						Amount PGE
2040		10500E	Qtzose - sericitic gneiss?, white-pale green	.45	84	40	2050						
2041		10475E	clay with rock with angular quartz	.09	170	75	957						
			frag										
2042		10450E	Green - very limonitic weathered rock	.06	1040	120	7850						
2043		10425E	Green weathered rock, minor limonitic	.03	29	95	1830						
			veinlets										
2044		10400E	Brn mudst.	.03	1100	1400	8550						
2045		10375E	Grey brn, weathered mudst or fine detrital	.01	1	3000	2580						
			weak magnetic										
2046		10350E	Talc schist, khaki - purple, magnetic	.02	<1	860	2340						
2047		10325E	" " maroon - khaki, minor	.01	1	1250	2510						
			magnetic										
2048		10300E	Talc schist maroon, minor	.03	<1	525	2480						
			magnetic										
2049		10275E	" " " "	.05	<1	485	2900						
2050		10250E	Talc schist, green-maroon, magnetic	.01	3	550	1730						
2051		10225E	" " " "	.02	11	575	2520						
2052		10200E	" " " " minor mag'	.01	1	610	3080						
2053		10175E	" " pink, minor magnetic	.01	<1	465	2560						

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ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METAS EXPLORATION
 PROJECT KH 1/84
 PROSPECT WELD RIVER

SAMPLE RECORD AND ANALYTICAL DATA SHEET

LABORATORY ANALAB
 SAMPLE TYPE WACKER

COLLECTED BY: N Poltock
 DATE DISPATCHED:
 DATE RECEIVED:

A 28305

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				AU	AS	Ni	Cr				
RP 2054	10300N	10150E	Talc schist khaki	.02	11	1400	1720				
2055		10125E	Basic igneous, pale green, ± magnetite	.01	4	3650	4500				
2056		10100E	Talc schist, pale green-cream	.01	<1	430	4560				
RP 2057	10200N	10000E	Mudst, yel brn, sandy ± pebbles and fine frags Perm?	.01	11	40	206				
2058		10025E	Mudst, yel brn + fine quartz pebbles	.01	7	30	153				
2059		10050E	" " " "	.03	5	15	162				
2060		10075E	Qtzose gravel ± carbonate matrix	.01	1	10	274				
2061		10100E	Talc schist khaki-cream, no mag'	.02	<1	700	1870				
2062		10125E	Talc schist khaki-marone, minor mag'	.03	<1	970	2610				
2063		10150E	Talc schist khaki-min mag'	.01	5	940	2720				
2064		10175E	" " " - marone, magnetic	.03	6	690	2150				
2065		10200E	Slightly felsic rock, no mag'	.02	3	380	2875				
2066		10225E	Talc schist, khaki-white, minor magnetic	.05	<1	685	1690				
2067		10250E	Talc schist, khaki-white, 'no mag'	.02	9	450	1480				

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048

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT METALS EXPLN

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: N- Poltock

PROJECT EL 11/84

LABORATORY ANALYSIS

DATE DISPATCHED:

PROSPECT WED RIVER

SAMPLE TYPE WACKER.

DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Au	As	Ni	Cr				
2078	10100N	10550E	1.5m Silty-mudst, cream-brn Perm	<.008	9	15	124				
2079		10525E	3m Tilleke? cream-brn	<.008	9	30	131				
2080		10500E	11.2m Talcose-clay, grey-green	<.008	9	2100	2530				
2081		10475E	7m Majic? mottled cream-green, clay	.020	1180	150	8010				
2082		10450E	1.5m < carbonac' sandst	<.008	17	40	884				
2083		10425E	14.2m Talc schist pink mag'	<.008	6	420	2450				
2084		10400E	9.3m < Talcose cream-pink	<.008	9	40	9010				
2085		10375E	14.5m Mudst/tilleke grey-khaki clay	<.008	9	25	559				
2086		10350E	10.7m Clayey mottled brn-cream	<.008	5	165	399				
2087		10325E	11.0m Talc schist, pink + mag'	<.008	5	395	1900				
2088		10300E	10.8m " " -shale + mag'	<.008	5	665	1310				
2089		10275E	8.5m " " + mag'	.010	5	630	1720				
2090		10250E	5.3m Tilleke? grey pebbles	.010	9	170	495				
2091		10225E	1.4m humonitic, some dolerite frags minor mag'	.010	10	440	1020				
2092		10200E	5.5m Talc schist, minor mag'	.010	10	625	3160				
2093		10175E	13m " " khaki v' minor mag'	.010	10	505	3910				
2094		10150E	4.2m Sandy-mudst + grey frags/pebbles								
2095		10125E	7m Mudst/tilleke cream-brn	.010	10	25	236				
2096		10100E	3.5m Tilleke pale orange/yel, sandy								
2097		10075E	7.4m " -mudst.	.010	12	40	160				

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-049

ROGER POLTOCK GEOLOGICAL PTY. LTD.

CLIENT *Metals Expl*
 PROJECT *EL 11/84*
 PROSPECT *WELD RIVER*

SAMPLE RECORD AND ANALYTICAL DATA SHEET

LABORATORY ANALYSIS

SAMPLE TYPE *WACKER*COLLECTED BY: *N. Poltock*

DATE DISPATCHED:

DATE RECEIVED:

A 20

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				AU	Ag	Ni	Cr						
2098	10100N	10050E	6.2m Telleke? , yel- orange										
2099		10025E	9.1m Mudst, < talcose, < foliation	0.010	22	160	1480						
2100		10000E	5.0m Mudst brn - pink Perm?										
2101	10000N	10000E	7.9m Mudst yel - brn	0.010	12	25	135						
2102		10025E	1.2m S/s cream - white										
2103		10050E	11.6m Mudst - fine talleke	0.020	12	30	88						
2104		10075E	3.6m Mudst										
2105		10100E	7m " khaki, conc. frack.	0.030	9	30	190						
2106		10125E	0.7m grey talleke										
2107		10150E	2.5m " " ?	0.010	11	20	1560						
2108		10175E	3.6m Mudst/talleke - grey brn										
2109		10200E	12.2m Mudst orange - pink	0.010	10	70	207						
2110		10225E	4.8m " pink - brn										
2111		10250E	7.5m "	0.020	8	55	110						
2112		10275E	9.8m Mudst/talleke, grey frack										
2113		10300E	4.6m " " < limonitic	0.010	8	35	84						
2114		10325E	? Mudst/talleke grey - khaki										
2115		10350E	5.3m " " khaki - pink	0.010	14	40	135						
2116		10375E	1.4m Mudst										
2117		10400E	1.4m "	0.020	9	35	133						

150085

APPENDIX 6

DESCRIPTIONS OF ROCK SAMPLES TAKEN BY TS/KM ON TOUR OF E.L. 11/84
3 AUGUST, 1989

- TST3 Weld Prospect - location unknown. (refer M.C.F.) Siliceous ironstone, lanted limonite/cherty silica, minor vugs.
- TST4 Weld Prospect 10,600N, access track between western pads. Limonite siliceous rock with replacement texture. (AMG 78120E, 33870N).
- TST5 As above, hematite siliceous rock.
- TST6 Weld Prospect, base line at river bank. Carbonate, low density rock, opaline veining, mesh texture similar to ultramafic, rock siliceous in part. (refer thin section report) (AMG 78200E, 34320N).
- TST7 Weld Prospect, access track, west of baseline, approx. 10,500N. Siliceous rock, fragmental, vuggy texture, abund. black laths (apparent stained rock) abund. Secondary quartz crystals in cavaties (samples kept for fluid inclusion work - refer report) (AMG 78140E, 33740N).
- TST8 Weld Prospect, South Weld access road. Heavily altered ? ultramafic rock, partly bleached, partly green ? chloritic, wavy laminations, green ? nickel carbonate mineral, ferruginous overprint. (refer thin section report). (AMG 78150E, 33420N).

053

ANALABS

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

530057

ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

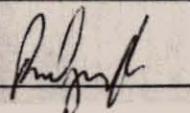
REPORT DATE

CLIENT ORDER No.

PAGE

		999.24.08.06414				16/08/89				1 OF 1	
TUBE No.	SAMPLE No.	Pb	Ni	As	Au						
1	TST01	10	25	510	0.380						
2	TST02	15	20	820	0.564						
3	TST03	35	110	34	0.014						
4	TST04	215	340	1050	2.160						
5	TST05	575	190	860	0.750						
6	TST06	105	40	150	0.016						
7	TST07	<5	20	7	0.014						
8	TST08	15	165	310	0.022						
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	10	1	0.005						
24	UNITS	PPM	PPM	PPM	PPM						
25	METHOD	101	101	114	313						

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
 

THIN SECTION REPORT
G.J.DAVIDSON

3-9-89

KM1 = 78150 E, 33420 N (TST8)

Summary: Silicified layered sediment

Minerals:

Cherty: 85 - 90 %

Muscovite, or similar poorly-crystallised sheet-silicate: 5 - 8 %

Carbonaceous matter: trace

Goethite: 1 - 2 % (related to weathering)

Textures: Overall, a well-defined layering is the dominant fabric, defined by fine alternations of quartz, mica and occasional layer-parallel chert veins. The interlocking lathe-like texture of parallel quartz, particularly coarsening within small nodules, is atypical of clastic sediment. An origin as fine clay-rich chert, or as pseudomorphs after carbonate or evaporite minerals is likely. The layering is unlikely to be tectonic, given the low crystallinity and strain in the fabric.

KM2 = 78200 E, 34320 N (baseline on riverbank) (TST6)

Summary: Hydrothermally altered dolomitised limestone.

Minerals:

Dolomite: 65 % — anhedral plates ~ 0.2 mm wide. Abundant fluid inclusions.

Chlorite: 30 - 35 % — distinctive light brown-green, non-pleochroic.

Chalcedony: 5 % — radiating, within veins.

Textures: Small relicts of an original carbonate fabric are pervasively dolomitised. This is in turn replaced by fine-grained disorientated chlorite defining two macroscopically visible, near-orthogonal spaced fractures in hand-specimen. Chalcedony and quartz occur in veins cutting all previous assemblages.

The earliest fabric consists of small, well-sorted subround grains of micritic sand, and occasional small rhombs of dolomite. On this basis, the original lithology is suggested to be a carbonate sand, subsequently dolomitised, and finally overprinted by hydrothermal chlorite.



MINES CONSULTANCY SERVICES

Preliminary fluid inclusion and petrographic studies on samples SW1-1 and SW1-2, Weld River area, South-west Tasmania

Client: PEGASUS GOLD AUSTRALIA

Author: Dr J. TAHERI

Date: 27 SEPTEMBER 1989

TASMANIA DEPARTMENT OF MINES

Preliminary fluid inclusion and petrographic studies on samples SW1-1 and SW1-2, Weld River area, South-west Tasmania

by J. TAHERI, B.Sc., M.Sc., Ph.D

SUMMARY

Brecciated silicified rocks, possibly originally carbonaceous sediments, from the Weld River area contain abundant euhedral quartz in veins and vugs. Fluid inclusion homogenisation temperature measurements on two samples gave minimum formation temperatures of 310 to 390°C, with most values falling between 360 and 390°C. The fluid appears to be of low salinity, CO₂-bearing, and is most probably of regional metamorphic origin. It is similar to the same fluids associated with gold mineralisation elsewhere in the world (e.g. Kerrich, 1987) but may be of slightly higher temperature.

This preliminary work has clearly established that high temperature hydrothermal processes have occurred in the area.

INTRODUCTION

During processes of crystal growth or fracture healing small portions of the fluid medium are commonly trapped as fluid inclusions. If the fluid contains solid phases these may also be trapped as solid inclusions. However these fluid inclusions are different from "daughter minerals" as the latter crystallise out of fluid upon cooling after trapping. Fluid(s) and/or solid(s) may be trapped either during the growth of the crystal by any process which interferes with a perfect growth, yielding primary fluid inclusions, or at some later time by recrystallisation along fractures from different fluids to form secondary fluid inclusions. Pseudosecondary fluid inclusions are those formed along the fractures during the growth of a crystal.

Fluid inclusions which have been formed in a heterogeneous system of two or even more immiscible phases (e.g. droplets of oil in an aqueous liquid) may contain one to all of the fluids, with different ratios. A similar phenomenon may result from phase separation, for example from a boiling solution in which the fluid inclusions may contain only gas or vapour bubbles of different sizes in different fluid inclusions.

Fluid inclusions are rarely larger than one millimetre. However museum specimens with fluid inclusions containing hundreds of millilitres of fluid are known (e.g. Rankin, 1978).

The composition of fluid inclusions varies widely. In general the major solvents are H₂O and less commonly CO₂, and the major solute ions include Na, K, Mg, Ca, Cl, SO₄, and HCO₃, with lesser amounts of Li, B, Fe, Mn, F, and P. Major constituents in inclusions with organic liquid or gas include H₂, CH₄ and C₂H₆, as well as a variety of high molecular weight compounds.

Fluid inclusions normally have a vapour or gas bubble which may move constantly under the effects of a thermal gradient or of gravity. The volume coefficients of thermal expansion for minerals are less than water by up to three times. Therefore upon cooling, a fluid inclusion which has been formed from an homogeneous fluid at elevated temperatures will shrink more than the host mineral, and when the total vapour pressure in the fluid is more than the pressure in the inclusion a bubble will nucleate and grow. The process can be reversed simply by heating the inclusion to the temperature at which the bubble disappears (i.e. homogenisation temperature). This was first suggested by Sorby (1858).

The salinity of fluid inclusions (wt% NaCl equivalent) can be estimated by freezing the fluid inclusions and measuring the depression of the freezing points of the inclusions. This is just an estimate, as other solute ions such as Mg, Ca etc. may also be present in the fluid. There are many methods (non-destructive and destructive) to determine the compositions of the fluid inclusions, and these have been explained in detail by many workers (e.g. Roedder, 1984).

Fluid inclusions may be subject to different physical changes after trapping, some of which may cause erroneous results in composition and homogenisation temperature measurements. There are mainly two physical changes which

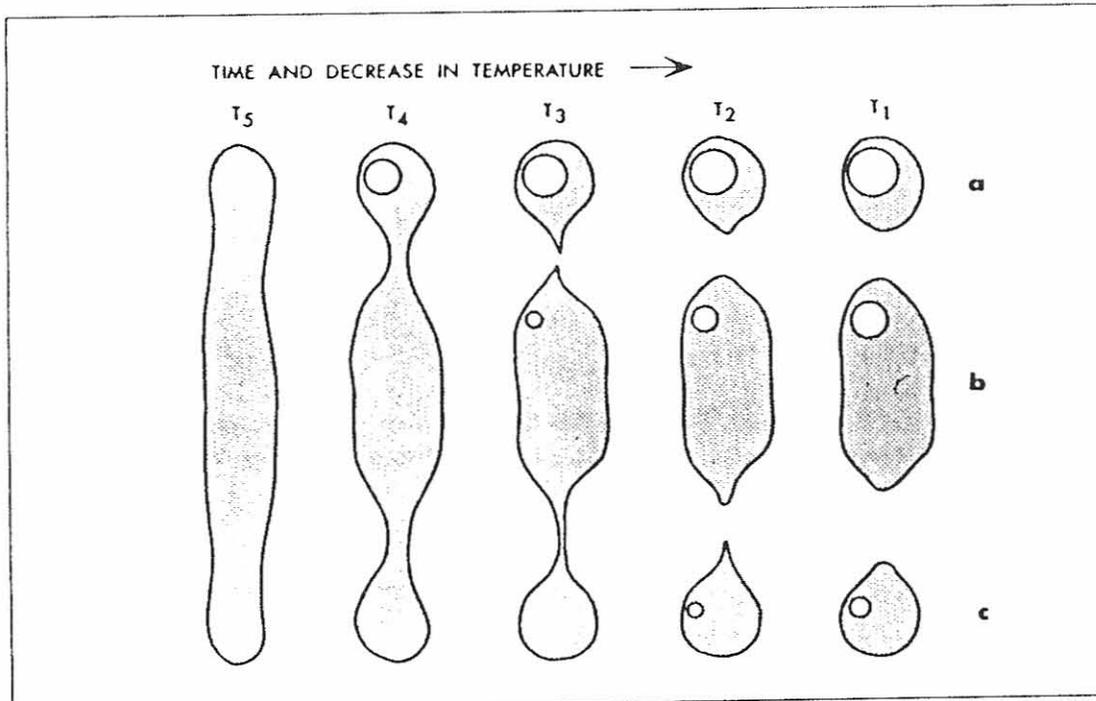


Figure 1. Necking down of a long inclusion. The original inclusion, trapped at temperature T_5 , formed three inclusions upon cooling (a, b, c). Fluid inclusion (a) homogenised above the actual trapping temperature T_5 ; inclusion (b) homogenised between T_3 and T_4 ; and inclusion (c) homogenised between T_2 and T_3 (from Roedder, 1984).

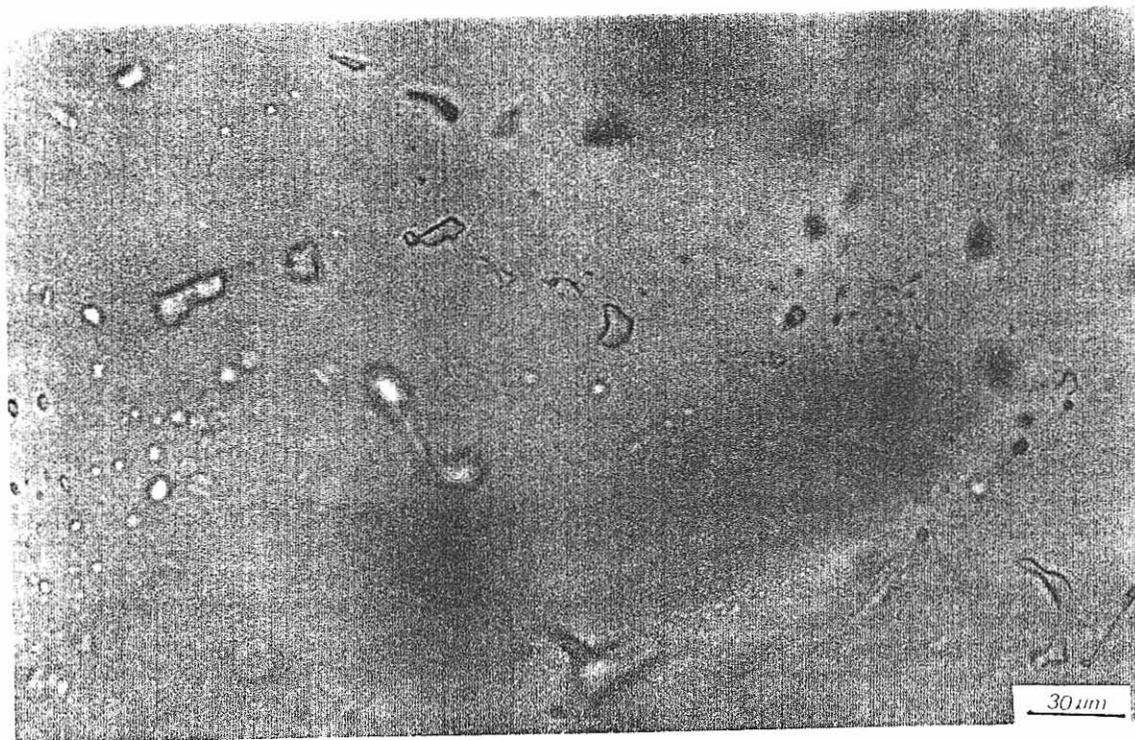


Figure 2. Necked down, flat, one phase (liquid only) inclusions. Sample SW1-1.

have been of great concern in fluid inclusion studies.

(1) Movement of fluid into or out of the inclusions after trapping (i.e. leakage). Many factors including overheating of primary fluid inclusions above their homogenisation temperatures, deformation of host rocks in metamorphic terrains, microfractures, and cleavages may all cause leakage in fluid inclusions.

(2) Necking down, which occurs in fluid inclusions with a large surface area. In order to minimise the high surface energy of the system a process of recrystallisation (i.e. necking down) may occur immediately after trapping if the host mineral has any finite solubility in the fluid. The final result of the necking down is the formation of several smaller fluid inclusions with the same total volume as the original flat fluid inclusion but with less surface energy (fig. 1). If there is no phase change before necking down, the composition of the fluid will stay the same. However if any phase changes occur before necking down, the inclusions resulting from this process may have different compositions and/or homogenisation temperatures. Therefore great care must be taken in order to identify the fluid inclusions which have suffered from leakage or necking down processes.

In general, fluid inclusions can be utilised in the studies of ore deposits, either in problems of mineral exploration or in studies of the physicochemical conditions of ore-forming fluids. They can also be used in igneous and metamorphic terrains, in oil exploration, in active geothermal systems, and in many other fields.

For further information about fluid inclusions, the reader is referred to Roedder (1984) and Hollister and Crawford (1981).

FLUID INCLUSIONS IN SAMPLES SW1-1 AND SW1-2, WELD RIVER AREA

Three doubly-polished fluid inclusion sections were prepared. Fluid inclusions were found in all the sections, but only two of the sections were used for heating and freezing experiments.

In general, there are three types of fluid inclusions:

(1) Thin, flat one phase (liquid only) inclusions which have undergone an extensive process of recrystallisation (i.e. necking down). Some of the inclusions have nucleated small

vapour bubbles upon processes of necking down or leakage (fig. 2). These fluid inclusions are obviously of very low temperatures (<70°C?) and appear to be of secondary origin. These are not discussed any further.

(2) Small ($\leq 2 \mu\text{m}$) secondary fluid inclusions with very low vapour-liquid ratios along the microfractures (fig. 3). No attempt was made to undertake any heating or freezing experiments on these fluid inclusions.

(3) Fluid inclusions with high vapour-liquid ratios ranging from 60 to 85 volume percent (fig. 4). The inclusions range in size from less than 4 to 50 μm and have irregular, rounded to negative crystal shapes. Some of the inclusions have a very dark and thick vapour-liquid meniscus. Fluid inclusions are mostly randomly arrayed or isolated, and are most abundant in euhedral quartz crystals projecting to open vugs and veins. These are the main criteria used in distinguishing primary fluid inclusions, as quartz crystals projecting to open voids will be relatively protected from stresses and/or fracturing, and consequently the primary fluid inclusions are less affected by problems of overprinting by later (secondary) fluid inclusions.

FREEZING EXPERIMENTS

There are two main problems in determining the compositions of the fluid inclusions:

(1) Very low liquid-vapour ratios in which very small volume expansions result upon freezing, and may not be detected.

(2) The occurrence of CO_2 in some of the inclusions. This has been positively identified by measuring the melting point of the solid CO_2 phase (-56.6°C). This is because salinity measurements using the ice melting method are inaccurate in CO_2 -bearing inclusions due to clathrate ($\text{CO}_2 \cdot 5.75 \text{H}_2\text{O}$) formation (Poty *et al.*, 1978; Hollister and Burruss, 1976; Collins, 1979). Carbon dioxide hydrate can not accommodate NaCl in its structure, therefore the residual solution after the formation of carbon dioxide hydrate is more saline than the original solution. However, the CO_2 hydrate melting temperatures may be utilised for salinity measurements provided no other gas species (e.g. CH_4) are present (Collins, 1979). This assumption appears to be valid for type 3 fluid inclusions, as temperatures of melting of solid CO_2 are indicative of relatively pure CO_2 (-55.4-56.2°C). However, measurement of clathrate melting temperatures was difficult

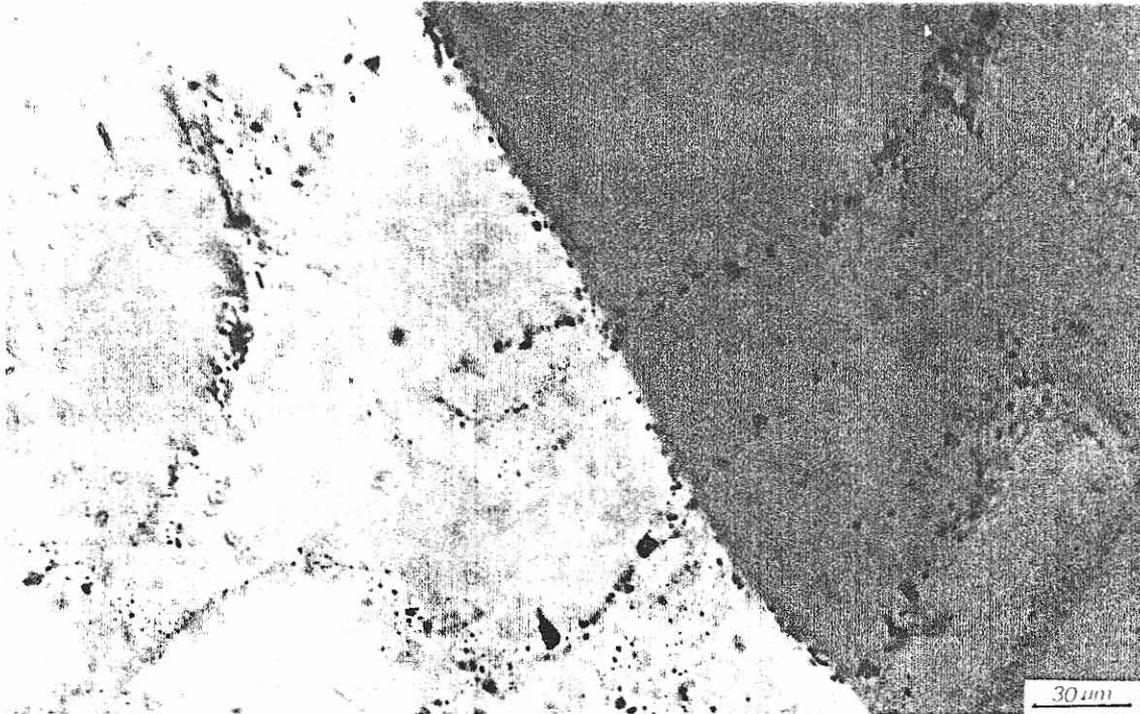


Figure 3. Small secondary fluid inclusions in quartz. Sample SW1-1. Note the planes of secondary inclusions cutting across the grain boundary (partly cross polars).

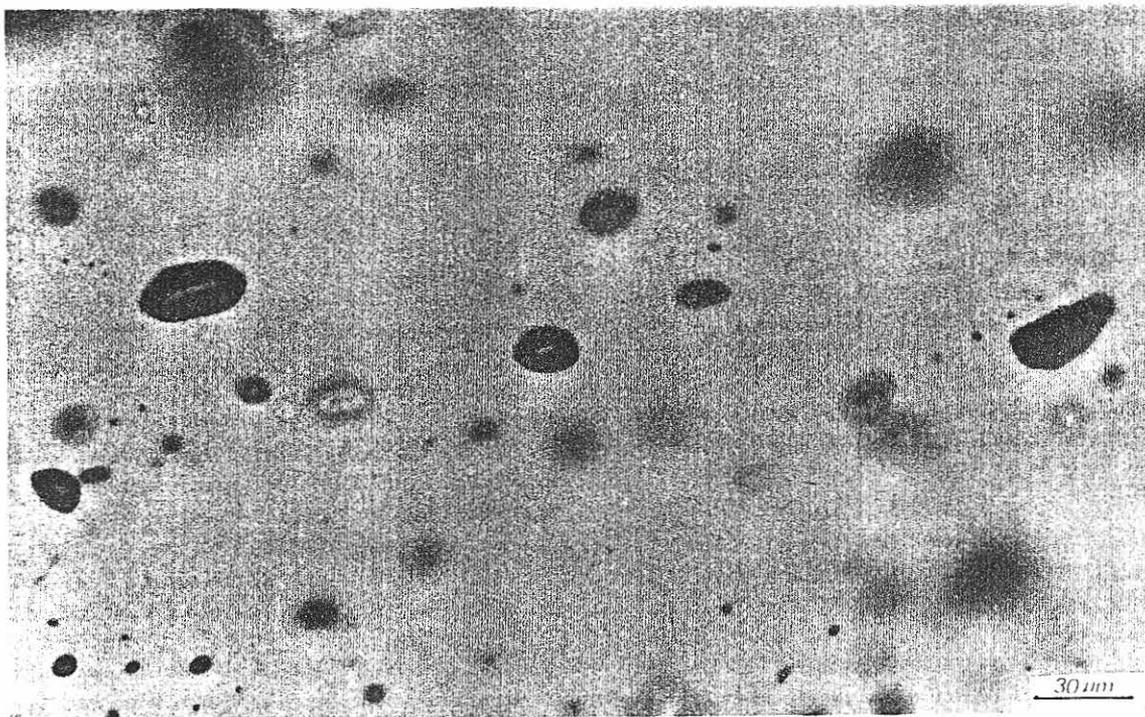


Figure 4. Type 3 fluid inclusions. Note the high vapour-liquid ratios and dark, thick vapour-liquid boundaries. Sample SW1-2.

because of the very small volume of aqueous solution, the similarity of CO₂ hydrate refractive indices to those of aqueous solutions, and the isotropic character of CO₂ hydrate. One CO₂-bearing fluid inclusion gave a consistent final melting point of -1.8°C, and four other inclusions with no detectable CO₂ showed final melting points of around -5.5°C. These values must be verified by systematic detailed work in order to establish the different types of fluid inclusions and their relationships in respect to each other. The detection of CO₂ in only some of the fluid inclusions may indicate that:

(a) type 3 inclusions consist of two distinctly different fluids (i.e. CO₂-bearing and CO₂ free (poor) fluid inclusions.

(b) they represent fluid immiscibility in the H₂O-CO₂+NaCl system in which individual inclusions have trapped different ratios of CO₂ and H₂O+NaCl, and this could have formed as a result of boiling of CO₂-bearing fluid from an uncertain origin.

(c) CO₂ is present in all the fluid inclusions but was not detected. In regard to the preliminary nature of the work it can only be said that the primary-looking fluid inclusions contain CO₂ of possibly different ratios. Any further conclusions or valid discussions require more detailed studies (i.e. more samples from different localities, establishment of different types of inclusions, statistically reliable heating and freezing measurements).

HEATING EXPERIMENTS

Only fluid inclusions with high vapour-liquid ratios (type 3) were used for homogenisation temperature measurements, and the results are shown in Figure 5. The homogenisation temperatures range from 312 to 389°C with the majority falling between 360 and 390°C. All the fluid inclusions homogenised to vapour phase, with the exception of one set of inclusions in which two inclusions homogenised to liquid, one inclusion homogenised to vapour, and two others exhibited critical phenomenon (i.e. the boundary between vapour and liquid gradually disappears as the inclusion approaches the homogenisation temperature). The critical point is a point at which two phases become physically indistinguishable, and is pressure and composition dependent. This is important, because if the composition of the fluid is known, then by measuring the critical temperature, the pressure at which the inclusions were trapped can be estimated in the relevant system (e.g. NaCl-H₂O or H₂O-CO₂). However the

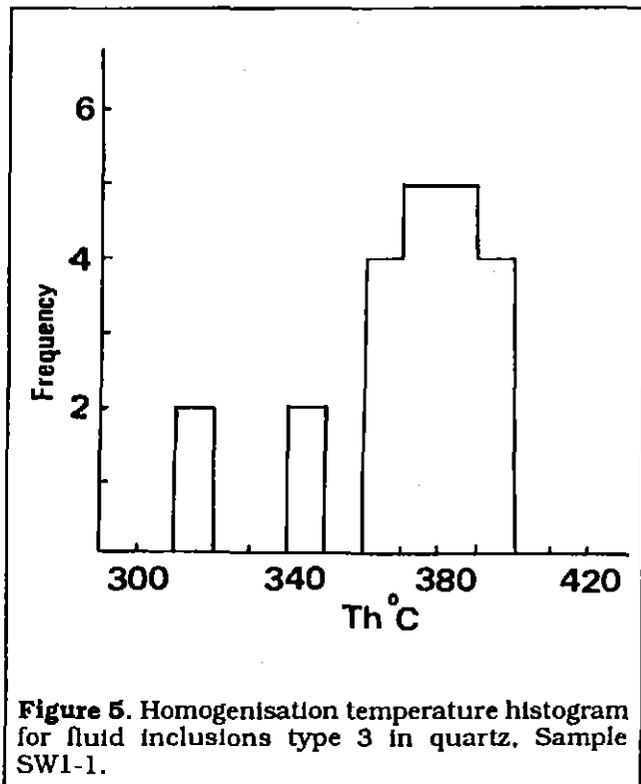


Figure 5. Homogenisation temperature histogram for fluid inclusions type 3 in quartz, Sample SW1-1.

compositions of the inclusions showing critical temperatures could not be measured, and consequently more inclusions showing critical phenomena need to be found and studied. Another significance in observing the fluid inclusions of the same generation behaving differently upon homogenisation temperatures is that they may indicate that the fluids have been trapped from a heterogeneous system (H₂O-CO₂) in which different phases of different ratios have been trapped at the time of formation. Boiling of the fluid is a special case of heterogeneous trapping, and if this is the case then the CO₂-bearing fluid inclusions are on a two phase immiscibility curve, and no pressure correction is needed to be added to the homogenisation temperatures, as both fluids are saturated with respect to each other. Again this must be investigated in more detail, as one set of inclusions may not be representative for all the other inclusions, and problems such as leakage must be checked more carefully before reaching any conclusions.

In general, a temperature range of 320 to 390°C is probably the minimum temperature range for the formation of the quartz crystals in silicified rocks. The source(s) of heat for the fluid(s) is not known at this stage. However it is unlikely to be related to the occurrence of a shallow granite, as there is no geophysical evidence yet to support this in the Weld River area (R. G. Richardson, pers. comm.). If the fluid was of magmatic origin, some highly saline magmatic (parental) fluid inclusions should have been observed, considering the relatively high homogenisation temperatures of around 400°C. The probable absence of granite in the area, the

lack of saline fluid inclusions, and the occurrence of CO₂ as a common constituent may favour a regional metamorphic origin for the fluids. However the geology of the area, and the occurrence, nature and the field relationships of these rocks relative to other rocks, are not known to the author. This, combined with the preliminary nature of the study, make the above discussions rather speculative, and it is important to study the degree of metamorphism (i.e. metamorphic facies) in order to examine whether the temperatures obtained from the fluid inclusions correlate with the metamorphic facies in the region.

In summary, primary-looking fluid inclusions occur in both samples. CO₂ appears to be common in most of the inclusions. The majority of fluid inclusions homogenise to vapour in the range of 360 to 390°C. However one set of fluid inclusions showed evidence of fluid immiscibility, and if this is the case, then homogenisation temperatures are representative of the formation temperatures (i.e. no pressure correction is needed). The source of the fluid may be of metamorphic origin. However, more detailed work, both in the field and in laboratories (petrochemical, fluid inclusions) are required to reach a more conclusive result.

PETROGRAPHIC OBSERVATIONS

The rock consists of a euhedral quartz crystal grown into open vugs and veins, and silicified black fragments which have acted as wall rock from which the quartz crystals have grown. The size of quartz crystals increases outwards from the silicified rocks. The rock is brecciated and it is not clear whether the silicification of the dark fragments (original rock?) occurred prior to the brecciation. The black silicified rock mainly consists of fine-grained quartz and very few small (~8 µm) rutile? inclusions.

The silicified rock is unlikely to be of ultramafic origin, as there are no traces of diagnostic inclusions such as magnetite, chromite or spinel, and texturally there is no evidence of quartz pseudomorphing the original rock-forming minerals (e.g. pyroxenes) as has been observed by R. S. Bottrill (pers. comm.) in rocks from the region. The rarity of the

inclusions in the rock, and the fact that the dark material is too soft for polishing, may suggest the occurrence of organic material and possibly indicates a parent carbonaceous rock.

The above discussion is based on the study of only one thin section, and obviously more detailed work is required to determine the possible original rock type(s) in these highly silicified and brecciated rocks.

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