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**GEOCHEMICAL SAMPLING OF PART OF THE HENTU
FAULT ZONE**

OPEN FILE

E.L. 11/85 YOLANDE

E.Z. Report No. T218

I.J. Mathison,

July, 1986

1. INTRODUCTION

The Henty Fault Zone is a major NNE trending geological structure which transects the north-south belt of Mount Read Volcanics in Western Tasmania. It separates the volcanics into two blocks, each with its own distinctive depositional environment and a characteristic style of mineralisation.

Significant mineralisation is known from three places along the Henty Fault, all of which lie north of E.L. 1/785. Only minor disseminated sphalerite-galena mineralisation is known from the fault zone within E.L. 1/785.

1.1. Geology (See 1:50,000 Geological Compilation)

The Henty Fault Zone and its south branch can be traced from well north of Tullah to the Yolande River, a distance of over 40km. Just north of the northern boundary of E.L. 1/785, the North Henty Fault splays off the main fault and curves gently westwards away from the SSW trending main fault. At Halls Rivulet the North Henty Fault has attained an almost east-west orientation and is offset by two north-south faults. Any further extension of the North Henty Fault to the west is obscured by glacial moraine.

The Henty Fault with its north and south branches separate the Mount Read Volcanics into two blocks. North and west of the fault zone is the Rosebery Block. South and east is the Lyell Block. Rocks of both blocks are predominantly acid volcanics.

Between the two branches of the fault, a fundamentally different volcano-sedimentary sequence is preserved. This sequence includes andesitic and basaltic volcanics, doleritic and microgabbroic minor intrusives and siltstones and volcanic wackes. Several ultramafic and mafic igneous bodies have been intruded, or emplaced, along the North Henty Fault Zone.

1.2. Mineralisation and Previous Exploration

Early prospectors working up the Henty River Gorge discovered disseminated and veinlet galena-sphalerite mineralisation within andesitic volcanics and associated sediments just north of the Henty River. This mineralisation was tested by a series of shallow pits and short adit crosscuts.

Mt. Lyell and the Getty-Goldfields Joint Venture established the Henty River Grid over the area surrounding this mineralisation. Systematic geological, geochemical and geophysical exploration were followed-up with diamond drilling. A few small pods of low grade lead-zinc mineralisation were outlined. A subsequent EM 37 survey over Mt. Lyell's Henty River Grid, for Cyprus Minerals, detected no indications of significant mineralisation (see Jones, 1985).

Mt. Lyell's Henty River Grid covers only part of the South Henty Fault Zone. 10km of the South Henty Fault Zone was left untested.

The southwestern end of the North Henty Fault Zone has been subjected to reconnaissance geological mapping, soil geochemistry and I.P. along 450m spaced grid lines. No results of gold assays on samples from these areas have been reported.

1.3. Access

Most access to the sections of the fault zones tested by E.Z. in 1986 is by foot. Old logging tracks and Mt. Lyell cut lines provide foot access to the North Henty Fault and a new grid, the E.Z. Henty River Grid, was cut to provide access to the South Henty Fault Zone. Because of steep slippery slopes, thick rainforest and dense cutting grass regrowth along logging tracks, foot travel in all areas was slow.

2. WORK COMPLETED

2.1. Gridding

A grid consisting of 2.5km of base line, and four short cross lines was cut and pegged at 20m slope corrected intervals. This grid is connected by a walking track and old logging tracks to the Zeehan Highway and by the recut Mt. Lyell line 16S to Bradshaws Road.

2.2. Geochemical Sampling (See 1:10,000 Sample Location Map)

23 stream sediment samples, 22 panned concentrates and 32 rock chip samples were collected.

Stream sediment samples were collected from sediment trap sites in active streams. Sediment from under or around boulders and from cobble banks was wet sieved on site to -1 mm. Care was taken to retain most of the silt and finer material by allowing the sediment to settle in the panning dish before transferring the wet sample into a calico bag. One to two kilograms of sample was collected. Samples were dried and sent to Analabs in Burnie, where they were sieved to -80*. The -80* fraction was analysed for base metals, Ag, As and Ba by A.A.S. and for Au by fire assay.

Panned concentrates were collected from all stream sediment sample sites except one. Sediment from trap sites was wet sieved to -1 mm into a large panning dish until the sieved sediment half filled the dish. This material was then carefully panned to produce a panned concentrate weighing from 100-200g. Concentrates were dispatched to Analabs in Perth for T.B.E. separation of heavy minerals. The heavy mineral fraction of each sample was then analysed for Cu, Pb, Zn, Ag, Fe, Mn, Co, Cr and Ni by A.A.S.; for Ba and As by X.R.F.; and for Au, Pt and Pd by fire assay. To maximise the amount of material available for fire assay, the pressed powder discs used for X.R.F. were returned to the residual pulverised sample.

Rock samples were collected from most stream sediment sites, from any potentially mineralised zones and from along part of line 16S. Samples were bulked by collecting enough rock chips from outcrops to fill a 3-4kg sample bag. Rock samples were dried, crushed, disced to -1 mm and then split for assay. The samples were analysed for the same elements as were determined for panned concentrates.

2.3. Geology and Petrology

Geological data were collected from sample locations during geochemical sampling. Published mapping by Mines Department personnel (Corbett, 1984, '85) and unpublished mapping by K. Corbett were used to produce a geological base for the area.

3. RESULTS RECEIVED

3.1 Geochemistry (See Data Sheets)

Stream Sediments

Stream sediment samples were analysed for Cu, Pb, Zn, Ag, Fe, Mn, Ni, Cr, Co, Ba, As and Au. For most elements, values reported did not exceed anticipated background values. The highest gold value reported was 0.017 g/t.

Two weakly anomalous Zn values of 260 and 360 ppm and two weakly anomalous As values of 26 and 35 ppm were reported. Results from these four samples were not supported by elevated panned concentrate results.

Panned Concentrates

Results of the analyses of the heavy mineral fraction of panned concentrates are considered to be qualitative only. Repeatability of values obtained using this technique cannot be expected to be good.

Nevertheless, elevated gold values in these samples suggest some gold in the system and require some follow-up work. Sample 67757, reporting 2.99 g/t Au and 1,100 ppm Ba comes from a creek draining the South Henty Fault. Sample 67715, reported 16.33 g/t Au was collected from a creek draining an area of felsic tuff, agglomerate and siltstone of the White Sur Formation northwest of the North Henty Fault. No other results reported for the panned concentrates are obviously anomalous.

Rock Chip Samples

Only one rock chip sample reported significantly anomalous geochemistry. Sample 67711, an intensely sheared ultramafic rock, reported 1,700 ppm As and 515 ppm Zn. It was collected from the shear zone of one of the north south faults associated with the North Henty Fault. Sample 67710 taken a few metres east of the fault was not anomalous but samples 67712, a felsic tuff collected just west of the fault, reported 65 ppm As.

No significantly elevated gold, platinum or palladium values were reported.

Geology and Petrography

(See Rock Sample data sheets and C.M.S. Report 86/5/25)

Reconnaissance geological mapping and sampling generally supported the subdivisions established by Corbett. E.Z. mapping, however, suggests that, in the area covered by the E.Z. Henty Grid, basaltic rocks and microgabbroic intrusives are common within the sediments of the Henty Fault Zone. That is, within the "HFs" unit of Corbett (1984) or the "CHs" unit of the geological map accompanying this report.

4. DISCUSSION

Results of the first phase of reconnaissance stream sediment and rock chip sampling have been disappointing. Progress has been slow and the anomalous results obtained by one sampling method have not been supported by other techniques. Nevertheless, three samples reported anomalous results and require follow-up work.

Of the three anomalous samples, one was collected from the North Henty Fault system and one from a creek draining the South Henty Fault Zone. It must also be noted that much of the South Henty Fault Zone lies under the bed of the Henty River. This section of the fault cannot be tested using the reconnaissance techniques described in this report.

5. RECOMMENDATIONS

1. Reconnaissance geochemical sampling of the Henty Fault Zone should be completed. The area of Mt. Lyell's Henty River Grid should be included in the survey.
2. The anomalous areas indicated by the sampling to date should be followed-up by repeat sampling, detailed stream traverses and by additional sampling. The application of alternative reconnaissance sampling techniques for gold such as bulk cyanide leach should be tested.
3. Sampling of the bed of the Henty River should be attempted during a dry spell or when H.E.C. dams upstream reduce the water flow.

6. CITED REFERENCES

- CORBETT, K.D., 1984 Geological maps and summary of the Cambrian stratigraphic units and relationships in the Henty River-Willimasford Area.
Unpub. Report - Dept. of Mines Tas. - 1984/84
- CORBETT, K.D., 1985 Geological compilation map of the Mount Read Volcanics, Que River to Mt. Darwin.
Unpub. Report - Dept. of Mines Tas. - 1985/11
- JONES, P.A., 1985 Yolande Joint Venture - Report on Activities to end October, 1985.
Unpub. Report for Cyprus Minerals.

APPENDICES

Stream Sediment Sample Data Sheets.

Panned Concentrate Sample Data Sheets and Assay Results.

Rock Sample Data Sheets

C.M.S. Report 86/5/25

MAPS

√ 1:50,000	Geological Compilation	AX-528-0142
√ 1:10,000	Sample Location Plan	AO-519-0005
√ 1:10,000	Sample Location Plan	AO-519-0006

E.Z. Co. of A'Asia Ltd.,
ROSEBERY, Tasmania

GEOCHEMICAL SAMPLE DATA SHEET

004008

PROJECT: YORLANDE
LOCALITY: HENTY RIVER
GRID NAME:
NOMINAL GRID AZIMUTH:

MATERIAL: Stream Sediments
SAMPLE METHOD: Sieve to -100
SAMPLED BY: I.J. Mathison
DATE: Mar. - June 1986

SIZE FRACTION ANALYSED: 75-80#
ANALYSED BY: ANALABS
METHOD:

007

SAMPLE NUMBER	SAMPLE LOCATION DATA			STREAM DATA		COMPOSITION DATA					
	GRID LINE NO.	A.M.G. CO-ORDINATES		Site Order Direction of Flow	Width	Active Slag	Clay	Sand	Rock Frags.	Organic	CONTAM.
	GRID EASTING	NORTHING	EASTING								

67701				330	2m							
67704				215	4m							
67707				100	2m	WH	✓	✓	✓			
67713				155	2m	WH	✓	✓	✓			
67715				245	1.5		✓	✓	✓			
67718				100	4		✓	✓	✓	✓		
67720				160	1		✓	✓	✓			
67723				283	1.5		✓	✓	✓	✓		
67726				160	4		✓	✓	✓			
67728							✓	✓	✓			
67732				135	7	BW	✓	✓	✓			
67744				130	8	WH	✓	✓	✓			
67749				020	5	BW	✓	✓	✓			
67750				360	0.2	BW	✓	✓	✓			
67754				355	0.1	BW	✓	✓	✓			
67756				330	0.5	BW	✓	✓	✓			
67759				120	8	BW	✓	✓	✓			
67762				125	1		✓	✓	✓			
67765				160	2	BW	✓	✓	✓			
67768				175	0.5	BW	✓	✓	✓			
67771				290	5	BW	✓	✓	✓			
67773					1	BW	✓	✓	✓			
67775				185	5	BW	✓	✓	✓			

ANALABS														AN	
ANALYTICAL DATA														ANALY	
REPORT NUMBER: 27.1 08 3726														REPORT DATE: 26.5.86	
CLIENT ORDER No. 908784														PAGE 1 OF 4	
EXPLANATION OF SYMBOLS														27.1 08 3726	
TURB. ID.	SAMPLE No.	Cu	Pb	Zn	Fe	Mn	Cr	Co	Ni	Ag	Ba	Pb	Pu		
1	67701	10	x	25	8100	100	290	10	20	0.3	150	4	x		
2	67704	15	45	100	2.25%	2050	1700	45	65	0.3	170	15	x		
3	67707	10	10	65	1.60%	285	960	20	50	0.3	160	10	x		
4	67713	15	20	90	2.30%	740	720	30	75	0.3	175	9	x		
5	67715	10	x	370	2.15%	260	2.50%	60	105	3.2	185	9	x		
6	67718	15	55	105	4.20%	3900	605	95	80	0.2	160	26	x		
7	67720	10	x	30	7500	55	415	5	20	0.2	130	8	x		
8	67723	10	x	45	5200	45	555	10	20	0.1	115	3	x		
9	67726	20	10	90	6.20%	820	320	35	30	0.1	260	35	x		
10	67728	20	40	95	2.50%	1450	410	35	70	0.3	155	11	x		
11	67732	15	35	120	2.95%	2000	560	40	70	0.3	180	12	x		
12	67744	10	10	55	1.90%	690	1000	25	50	0.1	145	10	x		
13	67749	30	25	205	2.50%	390	190	23	60	0.4	200	5	x		
14	67752	30	20	215	2.70%	615	180	25	40	0.3	185	4	x		
15	67754	15	5	80	1.30%	170	265	10	20	0.2	200	5	x		
16	67756	15	25	55	2.05%	1250	365	30	35	0.2	140	5	x		
17	67759	30	10	105	2.75%	500	1800	30	105	0.3	120	9	x		
18	67762	25	x	145	2.45%	395	570	25	90	0.3	100	4	x		
19	67765	50	15	200	3.40%	720	410	35	150	0.3	95	9	x		
20	67768	20	10	125	2.50%	290	1100	25	90	0.3	115	6	x		
21	67771	30	10	160	3.05%	705	640	35	145	0.2	105	5	0.017		
22	67773	45	15	260	2.45%	500	485	20	105	0.4	70	4	x		
23	67775	25	5	215	2.95%	700	580	35	150	0.2	110	6	x		
24															
25															

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

ANALABS
 AUTHORIZED OFFICER: *[Signature]*
 when otherwise specified
 precision; but concentration too low to measure
 concentration is below detection limit
 not determined

004009

E.Z. Co. of A'Asia Ltd.,
ROSEBERY, Tasmania

GEOCHEMICAL SAMPLE DATA SHEET

PROJECT: VALANDE
LOCALITY: HENTY RIVER
GRID NAME:
NOMINAL GRID AZIMUTH:

MATERIAL: Stream Sediments
SAMPLE METHOD: Panned Concentrate
SAMPLED BY: I.J. Mathison
DATE: Mar-June 1986

SIZE FRACTION ANALYSED: T.B.E. Heavies
ANALYSED BY: ANAL ABS
METHOD:

008

SAMPLE NUMBER	SAMPLE LOCATION DATA			STREAM DATA			COMPOSITION DATA		Geology	METAL CONTENT (ppm unless specified)										
	GRID LINE NO.	A.M.G. CO-ORDINATES		Str. Order Direction of Flow	Width	Active Stream Load	Mass of Concentrate	Mass of Heavy fraction		CONTAM.	Cu	Pb	Zn	Cr %	Au	Fe %	Mn	As	Ba	Ni
	GRID EASTING	NORTHING	EASTING																	
67702				330	2		184.2	6.4		5	5	75	0.05	0.90	7.9	235	120	x		
05				215	4		222.8	13.7		20	35	410	1.15	x	14.7	950	130	30	24	
08				100	2		344.4	52.4		10	20	210	2.50	0.58	5.0	1800	2	x	16	
14				155	2		380.9	10.6		x	35	90	0.28	6.33	4.9	2650	50	x	1	
16				245	1.5		499.5	99.6		x	25	220	0.20	0.38	6.8	315	30	x	26	
67719				100	4		447.9	5.3		x	15	115	0.53		2.7	385	50	x	2	
21				160	1		315.7	2.9		30	x	25	0.05		1.1	350	95	200		
24				283	1.5		216.3	1.7		5	30	75	0.05		1.7	240	150	x	1	
27				160	4		149.0	2.0		5	20	50	0.05		0.7	275	x	x	2	
29							197.2	1.4		x	x	30	0.07		0.7	320	x	x	1	
67733				136	7		168.4	6.9		10	x	45	0.17		2.8	455	65	x	8	
45				130	8		125.7	15.3		20	15	660	5.010		8.0	1750	25	30	22	
50				020	0.5		152.7	14.2		25	165	210	0.310		11.3	3900	10	30	5	
53				360	0.2		126.9	15.0		25	100	125	0.210		12.1	3900	10	30	1	
67757				330	1.5		131.4	24.6		25	105	255	1.70	2.99	43.8	1100	20	1100	6	
60				120	2		65.4	26.3		20	20	285	5.25	x	11.8	1650	9	x	16	
63				105	1		92.5	18.3		20	30	265	4.20	x	11.0	2000	x	x	13	
66				160	2		112.5	24.9		35	40	215	2.40	x	14.5	1900	20	30	13	
67769				175	1.5		91.0	26.0		20	30	285	5.50	0.26	8.1	2400	x	50	155	
72				290	5		135.5	36.4		15	10	150	2.20	x	7.6	1450	x	x	21	
74					1		72.1	8.7		40	45	325	5.80	x	10.0	1450	x	x	13	
76				188	5		128.0	17.0		25	10	120	1.510	x	8.3	1600	4	x	20	

Samples also analysed for Pb, Pt, Cd and Ag. For results see Analysis report 27.1 or 372.9

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004010

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A division of MacDonald Hamilton & Co. Pty. Ltd.
52 Murray Road, Welshpool, W.A. 6106

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. 27.1 08 3729

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

Electrolytic Zinc Co of Australia
PO Box 21
Rosebery
Tasmania 7470

ORDER No. 900785	PROJECT YOLANDE
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DATE RECEIVED 21.5.86	RESULTS REQUIRED ASAP
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No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES 3	TOTAL No. OF SAMPLES 22
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STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	67702, 05, 08, 14, 16, 19, 21, 24, 27, 29, 33, 44, 50, 53, 57, 60, 63, 66, 69, 72, 74, 76						1		Cu Pb Zn Fe Mn Co Cr Ni Mn Ag As Ba Au		103 103 102 114 120 309

RESULTS TO RESULTS TO

As Above

REMARKS
Heavy mineral fractions of Panned Concentrates

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

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

TUBE No.	SAMPLE No.	Cr	Mn	Fe%	Co	Ni	Cu	Zn	Pb	
		27.1.88 3729				27.6.86		900785		1 OF 2
1	SINKS 67702	500	235	7.9	10	x	5	75	-	
2	SINKS 67703	11500	950	14.7	70	240	20	410	130	
3	SINKS 67708	25000	1800	5.0	55	165	10	210	2	
4	SINKS 67714	2750	2650	4.9	15	10	x	90	-	
5	SINKS 67716	2000	315	5.8	50	260	x	220	30	
6	SINKS 67719	5250	385	2.7	20	25	x	115	-	
7	SINKS 67721	490	350	1.1	5	x	30	25	-	
8	SINKS 67724	470	240	1.7	x	10	5	75	-	
9	SINKS 67727	510	275	0.7	x	25	5	50	-	
10	SINKS 67729	730	320	0.7	x	10	x	30	-	
11	SINKS 67733	1700	455	2.8	10	35	10	45	-	
12	SINKS 67745	50000	1750	8.0	110	225	20	560	25	
13	SINKS 67750	3000	3900	11.3	10	55	25	210	10	
14	SINKS 67753	2000	3200	12.1	5	15	25	125	10	
15	SINKS 67757	17000	1100	13.8	25	55	25	255	20	
16	SINKS 67760	52500	1650	11.8	55	165	20	285	9	
17	SINKS 67763	42000	2000	11.0	55	130	20	265	x	
18	SINKS 67765	24000	1900	14.5	50	135	35	215	20	
19	SINKS 67769	55000	2400	9.1	55	155	20	285	x	
20	SINKS 67772	22000	1450	7.6	55	210	15	150	x	
21	SINKS 67774	58000	1450	10.0	55	135	40	325	x	
22	SINKS 67775	15000	1600	9.3	50	205	25	120	4	
23	DETECTION	5	5	3.1	5	5	5	5	2	
24	DIJECTION									
25	METHOD	103	103	103	103	103	103	103	101	

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

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004012

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ANALYTICAL DATA

SAMPLE PREFIX REPORT NUMBER REPORT DATE CLIENT ORDER No. PAGE

		27.1 08 3729			27.6.86		900785		2 OF 2	
TUBE No.	SAMPLE No.	As	Pd	Pg	Ba	Ba	Pt	Hu	Pb	
1	SINKS 67782	120	x	x	-	x	x	0.980	5	
2	SINKS 67785	-	x	x	30	-	x	x	35	
3	SINKS 67788	-	x	x	x	-	x	0.575	20	
4	SINKS 67714	50	x	x	-	x	x	16.330	35	
5	SINKS 67716	-	x	x	x	-	0.013	0.383	25	
6	SINKS 67719	50	x	x	-	x	x	x	15	
7	SINKS 67721	35	x	x	-	200	x	x	x	
8	SINKS 67724	150	x	x	-	x	x	x	30	
9	SINKS 67727	x	x	x	-	x	x	x	20	
10	SINKS 67729	x	x	x	-	x	x	x	x	
11	SINKS 67733	65	x	x	-	x	x	x	x	
12	SINKS 67744	-	x	x	30	-	x	x	15	
13	SINKS 67750	-	x	x	30	-	x	x	165	
14	SINKS 67753	-	x	x	30	-	x	x	100	
15	SINKS 67757	-	0.001	x	1100	-	x	2.990	185	
16	SINKS 67760	-	x	x	x	-	x	x	20	
17	SINKS 67763	-	0.005	x	x	-	x	x	30	
18	SINKS 67765	-	0.002	x	30	-	x	x	40	
19	SINKS 67769	-	x	x	50	-	x	0.258	30	
20	SINKS 67772	-	x	x	x	-	x	x	10	
21	SINKS 67774	-	x	x	x	-	x	x	45	
22	SINKS 67775	-	x	x	x	-	x	x	10	
23	DETECTION	40	0.001	0.5	30	200	0.008	0.008	5	
24	DETECTION									
25	METHOD	404	311	103	401	404	311	309	103	

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 

004013

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Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER					PROJECT: YONANDE		LOCALITY:		DATE: MAR - JUNE, 1986										
Sample Number	A.M.G. Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section			Metal Content (p.p.m. unless specified)													
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Ag	Pb	Zn	Fe	Mn	Co	Ni	Cr	As	Bw	Aw	Pb
67708			RC	Grey green, massive SILTSTONE and f-mag VOLCANIC WACKE					105	10	8.18%	50	160	170	50-008	50-008						
									0.5	180	1100	65	21									50-001
67706			RC	Green, serpentized ULTRA MAFIC magnetic, irregular blue green veins					x	10	6.98%	130	1150	35	0.017	x						
									0.5	105	1450	2150	20									x
67709			RC	Dark blue green banded foliated and unfoliated magnetic SERPENTINITE					5	10	6.28%	125	1450	25	0.032	x						
									x	85	1250	2100	59									x
67710			RC	Pale brown green, granular slightly magnetic? altered basalt?		T Cowan	CMS	altered Gabbro	30	10	5.53%	75	1550	55	x	x						
									0.5	75	585	705	7									x
67711			RC	Grey brown intensely sheared and altered? SERPENTINITE?					20	65	10.98%	135	1500	100	0.017	x						
									x	515	5100	580	1700									x
67712			RC	Grey, fine grained, siliceous, ACID TUFF, mac quartz grains					5	40	8.87%	10	260	255	x	x						
									1.0	60	285	20	65									x
67717			RC	Grey, Fe stained, very soft, unfoliated, fg, altered ULTRAMAFIC					x	x	6.33%	130	1900	35	x	x						x
									x	50	585	3100	15									x
67722			RC	Grey slightly cleaved SILTSTONE, ~2% vfg disseminated pyrite					90	55	6.13%	35	170	255	0.017	x						
									0.5	180	215	105	41									0.004
67725			RC	Grey, cleaved SILTSTONE with thin beds vfg VOLCANIC WACKE					60	45	4.68%	25	150	305	x	x						
									x	130	380	70	11									0.002
67730			RC	Tan, fine grained, siliceous, ACID TUFF					5	10	1.73%	20	120	980	x	x						
									x	45	500	25	4									x
67731			RC	Red and grey fine grained quartz-litic WACKE, siltstone clasts					5	x	7.63%	65	670	295	x	x						
									0.5	65	1250	225	x									0.001
67734			RC	Grey and brown med grained, quartz-litic WACKE, siltstone clasts		T Cowan	CMS	Basaltic Silt	15	x	6.33%	60	1495	220	x	x						
									0.5	95	1750	215	1									0.001
67735			RC	VEIN QUARTZ, waxy, crumbly, in siliceous acid volcanic					20	5	1.38%	10	1465	95	x	x						
									x	30	95	10	2									x
67736			RC	Brown grey, fine grained, altered ACID TUFF, mac quartz					10	20	1.58%	10	105	280	x	x						
									0.5	40	80	15	4									x
67737			RC	Intensely sheared and cleaved altered felsic volcanic?		T Cowan	CMS	Brecciated silt	40	20	3.83%	35	980	250	x	x						
									0.5	105	120	75	6									x
																						ultramafic

004014

013

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER						PROJECT: YONANDE		LOCALITY:		DATE: MAR-JUNE, 1986											
Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	Thin or Polished Section				Metal Content (p.p.m. unless specified)														
	N	E				T or P	By	Reference	Rock-type (Microscopic)	Cu	Ag	Pb	Zn	Fe	Mn	Co	Ni	Cr	Ba	As	Pt	Bi		
67738			R.C.	Brown, v.f.g. siliceous cross fractured, silicified ACID TUFF							40	85	1.08%	10	115	75	<0.005							
67739			"	Pale brown, fine grained volcanic - lithic WACKE?	High Cr ? altered UM						35	30	7.28%	70	1200*	30	x	x						
67740			"	Pale cream brown, fine grained GABBRO - 5% pyrite							25	10	2.43%	30	280	145	x	x						
67741			"	Yellow brown-grey, clayey, weathered & altered, limonitic ACID TUFF?	High Cr ? altered UM						25	10	7.43%	95	1900*	40	x	x						
67742			"	Pale green brown, intensely sheared mt. sil. volcanic WACKE?	High Cr ? altered UM						25	10	8.13%	65	1150*	30	x	x						
67743			"	Green grey f-mg, altered, silicified BASALT		T	Cowen	CMS	Altered "Basalt"		15	x	2.93%	30	175	105	x	x						
67746			"	Dark green grey medium grained, minor qz, silicified AND TUFF		T	"	"	Basalt breccia		10	5	6.78%	65	235	85	0.008	x						
67747			"	Black laminated pyritic SILTSTONE, pyrite in bedding					flow lx		0.5	120	1400	125	5									
67748			"	Black SILTSTONE with thin beds reworked felsic TUFF							0.5	70	110	70	10									
67751			"	Dark green grey WACKE, grina of quartz, volcanic rock and siltstone							15	5	1.28%	10	235	220	x	x						
67755			"	Pale brown laminated SILTSTONE, mac limonite streaks							10	15	7.02%	10	55	225	x	x						
67758			"	Dark grey or brown SILTSTONE, slight cleavage							115	90	4.53%	35	235	360	x	x						
67761			"	Dark grey, v.f.g. irregularly cleaved, altered ? ANDESITE		T	Cowen	CMS	Alt "Andite"		60	25	5.63%	45	480	210	x	x						
67764			"	Yellow brown, very oxidized or grained GABBRO		T	"	"	Hybrid gabbro- diabase-gneiss		25	30	4.73%	35	278	125	x	x						
67767			"	Dark green grey, basaltic volcanic WACKE		T	"	"	Alt hypsisthene Microgabbro - cumulate		195	35	10.48%	75	300	55	x	x						

015

004016

YORHANDE

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. I.J. Mathison
Geologist
Mineral Resources Division
Electrolytic Zinc Co. of
Australasia Ltd.
P.O. Box 21
ROSEBERY / TAS. 7470

3rd June, 1986

REPORT CMS 86/5/25

YOUR REFERENCE:	Order No. 900787
DATE RECEIVED:	22nd May, 1986
SAMPLE NOS.:	10 Samples
SUBMITTED BY:	I.J. Mathison
WORK REQUESTED:	Petrology

H. W. Fander

H.W. Fander, M. Sc.

REPORT CMS 86/5/25

Ten rock chip samples from the Henty Fault Zone were received for petrological examination and brief description. Representative thin-sections were prepared and examined together with respective offcuts, with stain tests performed as warranted. Attached tabulated descriptions summarise the microscopic data and include interpretative comments.

Summary

This suite is dominated by altered basic to intermediate igneous rocks. Detail in some individual samples is obscured by secondary brecciation effects (notably samples 67777 and 67737) and, whilst primary lithologies are broadly identifiable, interpretation will be partly dependent on field evidence.

Two of the basic rocks (67743, 67770) are differentiated quartz mesostasised tholeiitic types. Despite the compositional similarity these appear unrelated, with 67770 exhibiting a "pumpellyite facies" low-grade metamorphic assemblage generally restricted to post-Cambrian intrusives.

Sample 67764 is an unusual complex xenolithic and xenocrystal hybrid intrusive. Conceivably related is sample 67767, a compositionally banded, strongly pyroxenic (mela-)gabbro with cumulate-type characteristics and compositional affinities to the xenoliths in 67764. This rock (i.e. 67767) may warrant analysis for Pt-group elements on the basis of general characteristics and the low but potentially significant hypogene sulphide content.

D. Cowan, B. Sc.

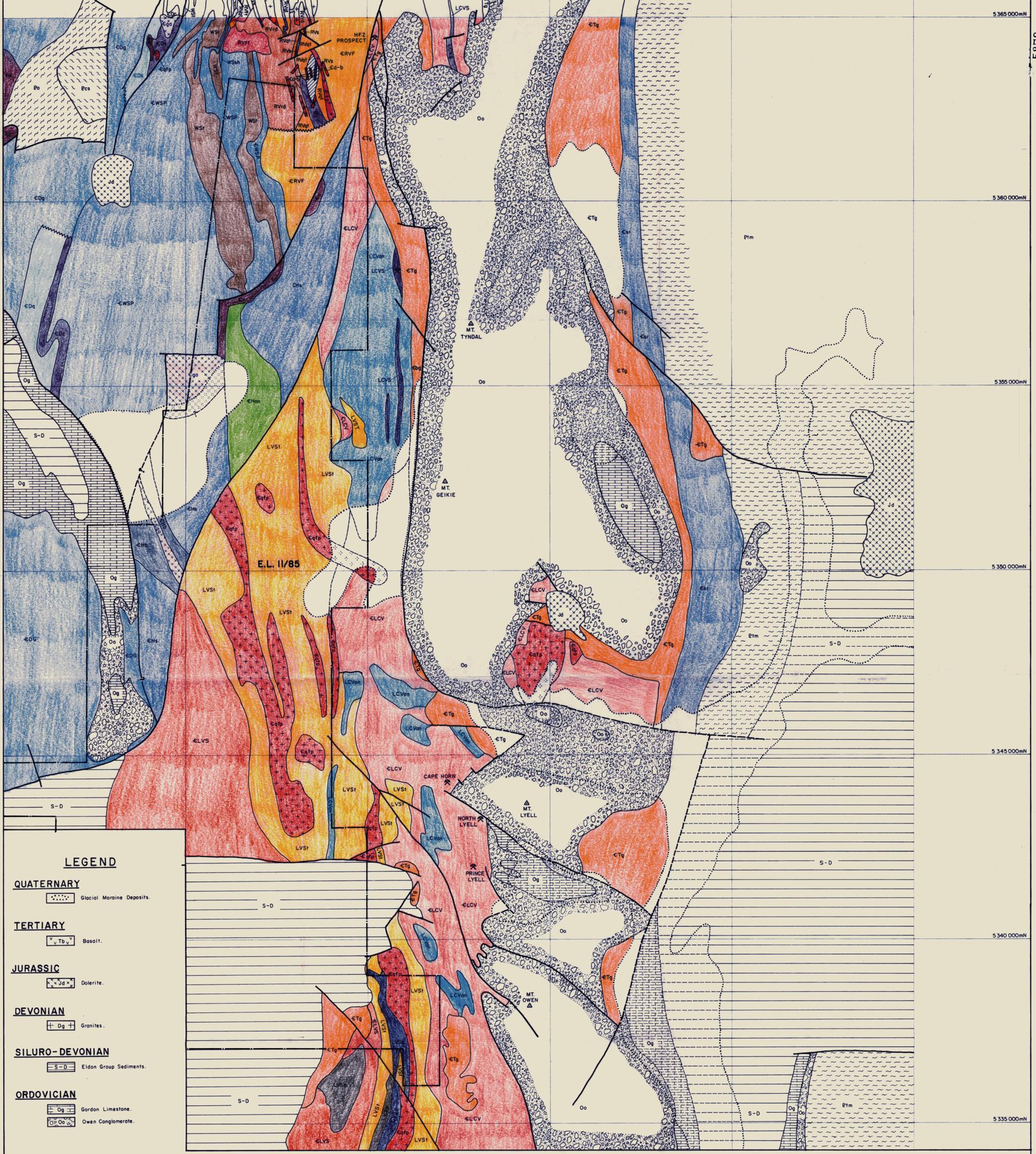
Sample No.	Classification - Composition	Fabric	Accessories	Comments
67710 (T.S. 56079)	Altered Gabbro. Chlorite and fine to micro-crystalline chlorite-stained quartz with varying proportions of fine to micro-crystalline calcite. Minor irregular limonitic Fe-stainings.	Mildly sheared/crudely phyllitic. Relict even-grained, gabbroic. Amphibole-derived chloritic pseudomorphs.	Ultrafine leucoxene stainings in altered ferromags.	Distinct relict gabbroic characteristics. Chlorite-quartz-talc-calcite assemblage apparently shearing-induced; overprinted on uralitic alteration.
67743	Altered "Basalt". Albitised/pervasively sericite-stained plagioclase laths, relatively minor leucoxenic chlorite semi-pseudomorphed ferromags. Pervasive conspicuous quartz mesostasis. Sporadic irregular quartz veinlets.	Weakly feldspar-porphyrific, flow-banded, "basaltic". Mildly, pervasively stressed/phyllitic.	Leucoxenised opaques, rare corroded oxyhornblende. Minor traces of fine-grained pyrite.	Tholeiitic characteristics with a conspicuous quartz/minor primary albite, weakly granophyric mesostasis.
67761	Altered "Dacite". Disseminated corroded quartz, carbonate-sericite-pseudomorphed feldspar, minor chloritised pyroxene phenocrysts in an albitised/chlorite-carbonate-stained, feldspar-microlathic groundmass with pervasive quartz.	? Subtraphytic, with a mild phyllitic overprint. micro-amygdales.	Minor sericite. Irregular carbonate-quartz-sericite veinlets. Leucoxenised opaques. Disseminated pyrite.	Exhibits differentiated (quartz-) andesitic characteristics. Vein, alteration carbonate is ankeritic. Pyrite concentrated in late chloritic sericitic stringers.
67770	Quartz Microgabbro. Albitised/saussurite-stained plagioclase laths with subordinate epidote-stained chlorite pseudomorphs after pyroxene. Semi-pervasive quartz/minor albite mesostasis. Minor chlorite-quartz amygdales.	Weakly amygdaloidal, incipiently stressed, subophitic. Semi-micrographic mesostasis.	Partly martitised magnetite, traces apatite. Semi-pervasive pumpellyite in chlorite aggregates, amygdales, saussuritic stainings.	Tholeiitic microgabbro. Affinities with 67743, but incipiently stressed and low-grade metamorphic rather than hydrothermally altered in comparison.
67764	Hybrid "Diorite". Variably uralite-saussurite-altered xenoliths of gabbro; abundant gabbro-derived xenocrysts in a matrix of similarly altered microdiorite, grading into (hornblende-pyroxene-)microgranodiorite.	Random submillimetric to centimetric-scale xenoliths, xenocrysts. Strongly porphyritic, unstressed matrix.	Weakly leucoxenic magnetite. Minor uralitic tremolite-replacive chlorite.	Strongly hybrid xenocrystal/xenolithic, dioritic/trend granodioritic porphyry with a semi-pervasive uralite-saussurite alteration pattern minor late chloritisation.
67746	Basalt Breccia. Albitised plagioclase laths, microlaths, minor phenocrysts with pervasive chlorite, minor chloritised pyroxene, sparse quartz amygdales; sporadic chloritic quartz veinlets.	Moulded, fine- to medium-grained, porphyritic to even-grained, centimetric-scale, basaltic-textured.	Leucoxenised opaques, thinly disseminated chromite. Sporadic late displacive chloritic clasts, microfractures.	Flow-breccia composite of texturally variable, compositionally uniform basalt clasts. Pervasively chloritic albite-altered. Incipiently stressed.
67767	Altered Hypersthene Microgabbro. Augite with subordinate/variable proportions of chlorite-pseudomorphed orthopyroxene and variably albitised labradorite (near bytownite). Sporadic chlorite veinlets.	Medium-grained, weakly directed, granular (gabbroic). Compositionally banded.	Magnetite, traces of hypogene Fe-sulphide, rare chalcopryrite. Corroded relics of uralitic actinolite.	Includes traces of biotite, oxyhornblende, minor traces epidote. Pyroxenic melagabbroic cumulate-type characteristics. Chlorite is late, uralite-replacive.
67777	"Breccia". Framework of albitised plagioclase phenocrysts/phenocrystal fragments and discrete to porphyritic felsite clasts. Chlorite and chloritised felsite matrix with minor clots of sideritic carbonate.	Sheared/phyllitic, with marked secondary brecciation effects. Vaguely relict lithoclastic.	Leucoxenised opaques. Minor quartz grains. Minor sericitic white mica. Rare radiolaria.	Relict features consistent with a glassy basic lithic tuff or subaqueous flow-breccia. Critical detail obscured by secondary shear-induced brecciation.

004018

Sample No.	Classification - Composition	Fabric	Accessories	Comments
57734	"Tuffaceous" Greywacke. Framework of chlorite-sericite-altered basalt clasts, quartz, albitised plagioclase, chloritised pyroxene grains, minor clasts of pelitic ash, impure chert. Hematite-pigmented chloritic matrix.	Poorly sorted (fine to coarse), turbiditic, sandy clastic. Mildly stressed.	Martitised clastic magnetite, minor leucoxenic semi-opaque, detrital chromite. Minor carbonate clots, veinlets. Crimson Creek.	Strongly basic-volcanomict greywacke. Marked chlorite-sericite(-sideritic carbonate)alteration. Clastic components consistent with "upper"
57737 (T.S. 56088)	"Breccia". Kaolin-illite and microcrystalline quartz in varying proportions with interspersed lenses, clots, films of near-colourless chlorite. Semi-pervasive leucoxenic TiO ₂ stainings.	Crudely lenticularly banded, phyllitic to semi-mylonitic.	Traces of chromite as very fine-grained clusters in vaguely pyroxene-pseudomorphous quartz aggregates.	Thoroughly silicified-argillised sheared and semi-mylonitically brecciated. Vague relict features consistent with a melagabbro or pyroxenic ultramafic.

004019

018



LEGEND

- QUATERNARY**
 - Glacial Moraine Deposits.
- TERTIARY**
 - Basalt.
- JURASSIC**
 - Dolerite.
- DEVONIAN**
 - Granites.
- SILURO-DEVONIAN**
 - Eldon Group Sediments.
- ORDOVICIAN**
 - Gordon Limestone.
 - Owen Conglomerate.

CAMBRIAN

DUNDAS TROUGH BLOCK
ROSEBERY BLOCK
HENTY FAULT BLOCK
QUE RIVER BLOCK
LYELL BLOCK

- DUNDAS GROUP (ROSEBERY GROUP)**
- Undifferentiated Sediments.
 - Felsic Tuffs (Natorene Volcanics).
 - Quartzite-Mudstone (Stitt Quartzite).
 - Conglomerates (Salisbury Conglom.).
 - Dolomitic Shales (Westcott Argillite).

- WHITE SPUR FORMATION**
- Undifferentiated Sediments.
 - Felsic Tuffs.
 - Shales (Chamberlain Shale).
 - Lithic Wackes.

- ROSEBERY VOLCANICS**
- Undifferentiated Felsic Volcanics.
 - Intermediate Volcanics.
 - Trachy-Andesite Lavas.
 - Intermediate Pyroclastics.
 - Rhyolite to Dacite Lavas.
 - Undifferentiated Felsic Pyroclastics.
 - Quartz-Phyric Tuffs.
 - Feldspar-Phyric Tuffs.
 - Intra-Volcanic Sediments.
 - Shales, Ashy Siltstones, Epiclastics.
 - Limestones.

- Undifferentiated Sediments.
- Andesitic Volcanics.
- Basaltic Volcanics.

- ? WHITE SPUR FORMATION ?**
- Undifferentiated Sediments.
 - Que River Shales.
 - Undifferentiated Basaltic Andesites.

- TYNDALL GROUP**
- Undifferentiated Quartz-Phyric Felsic Volcanics and Volcanoclastic Conglomerate.
 - Farrell Slatcs.
 - Quartz-Phyric Rhyolite Volcanics.

- LYELL VOLCANICS**
- Undifferentiated Central Sequence Rhyolitic to Dacitic Volcanics.
 - Undifferentiated Andesitic Volcanics.
 - Intra-Volcanic Sediments.
 - Undifferentiated Western Volcano-Sedimentary Sequence.
 - Felsic Tuffs.
 - Quartzwacke-Siltstones.
 - Basaltic Volcanics.

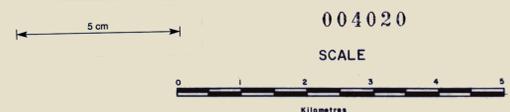
- INTRUSIVE ROCKS**
- Granite (Murchison Granite).
 - Quartz-Feldspar Porphyry.
 - Feldspar Porphyry.
 - Dolerite to Basalt Dykes.
 - Gabbro.
 - Ultramafic.

- STICHT RANGE BEDS**
- Quartz Wacke-Siltstone-Conglomerate.

- ALTERATION**
- Schistose Silica-Sericite ± Chlorite
 - ± Pyrite, Altered Volcanics.

- EOCAMBRIAN**
- Crimson Creek Fm. Mafic Lithic Wackes and Mudstones.
 - Success Creek Gp. Mudstone, Quartzite, Dolomite.

- PRECAMBRIAN**
- Oonah Fm. Corralates.
 - Concert Schist.
 - Tyennan Block Metamorphics.

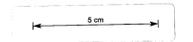
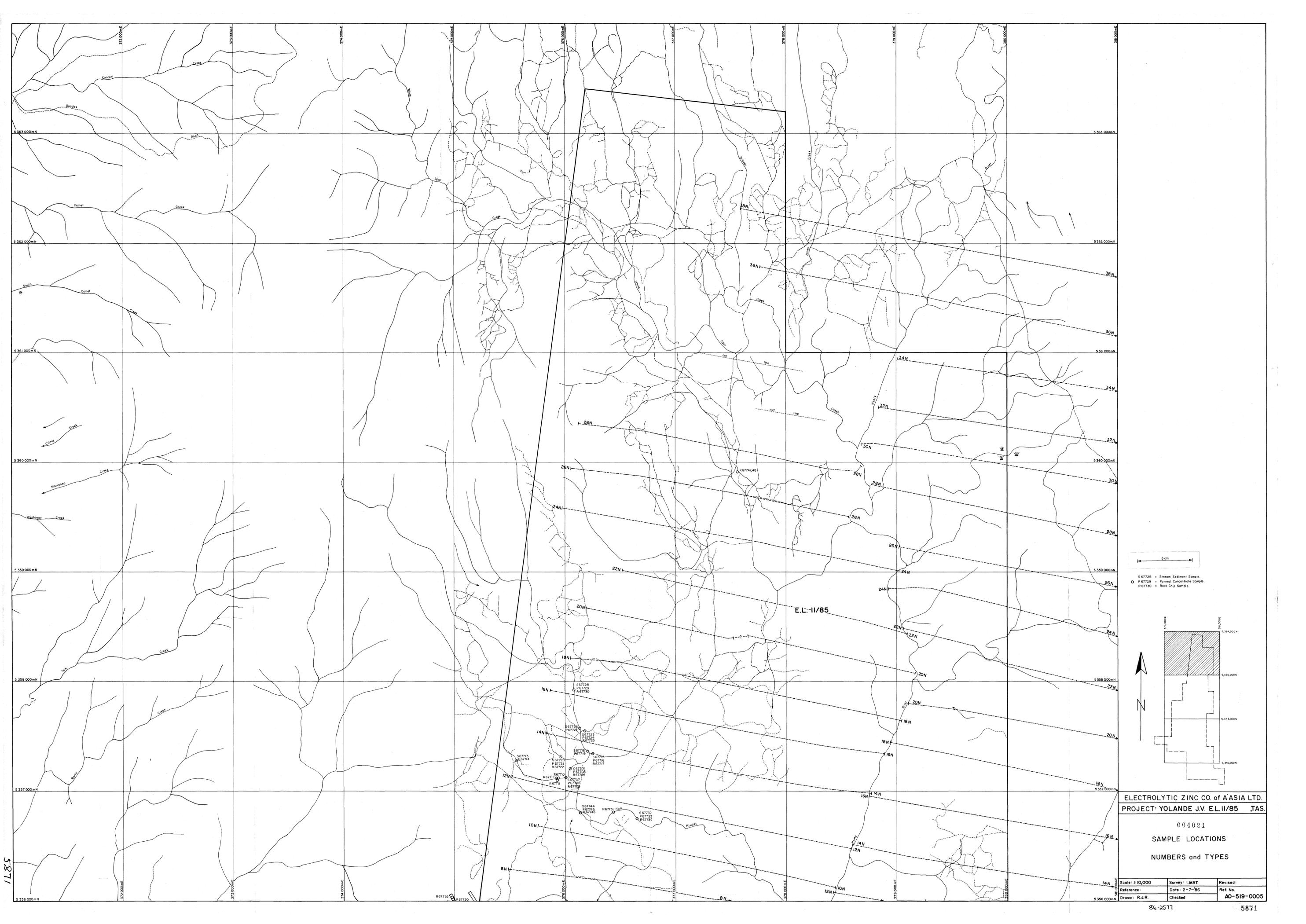


EZ
ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

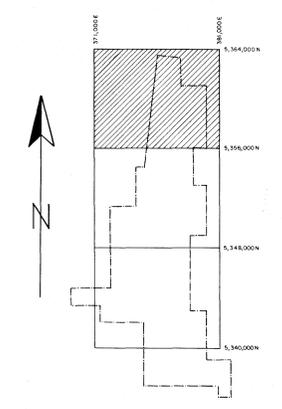
PROJECT: **TASMANIA GENERAL**

GEOLOGICAL COMPILATION
of the
MT. READ VOLCANICS BELT
QUE RIVER TO QUEENSTOWN

Compiled: I.M.D. Date: 27-11-85 Scale: 1:50,000
Ref. No.: Checked:
Drawn: R.J.R. PLAN NO.: AX-528-0142



- S 67728 = Stream Sediment Sample
- P 67729 = Panned Concentrate Sample
- R 67730 = Rock Chip Sample



ELECTROLYTIC ZINC CO. OF ASIA LTD.
PROJECT: YOLANDE J.V. E.L. II/85 .TAS.

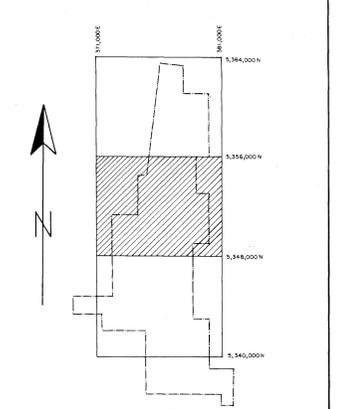
004021
SAMPLE LOCATIONS
NUMBERS and TYPES

Scale: 1:10,000	Survey: I.MAT.	Revised:
Reference:	Date: 2-7-'86	Ref. No.:
Drawn: R.J.R.	Checked:	AD-519-0005

5871



S 67765 = Stream Sediment Sample
 O 67766 = Panned Concentrate Sample
 R 67767 = Rock Chip Sample



ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: YOLANDE J.V. E.L. 11/85 T.A.S.

004022
 SAMPLE LOCATIONS
 NUMBERS and TYPES

Scale: 1:10,000	Survey: I.M.A.T.	Revised:
Reference:	Date: 2-7-86	Ref. No.
Drawn: R.J.R.	Checked:	AO-519-0006

5870