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ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
MINERAL RESOURCES DIVISION

OPEN FILE

PART E.L. 32/83 - BUBS HILL

EXPLORATION ACTIVITY FOR 6 MONTHS TO MARCH, 1984.

E.Z. REPORT T182

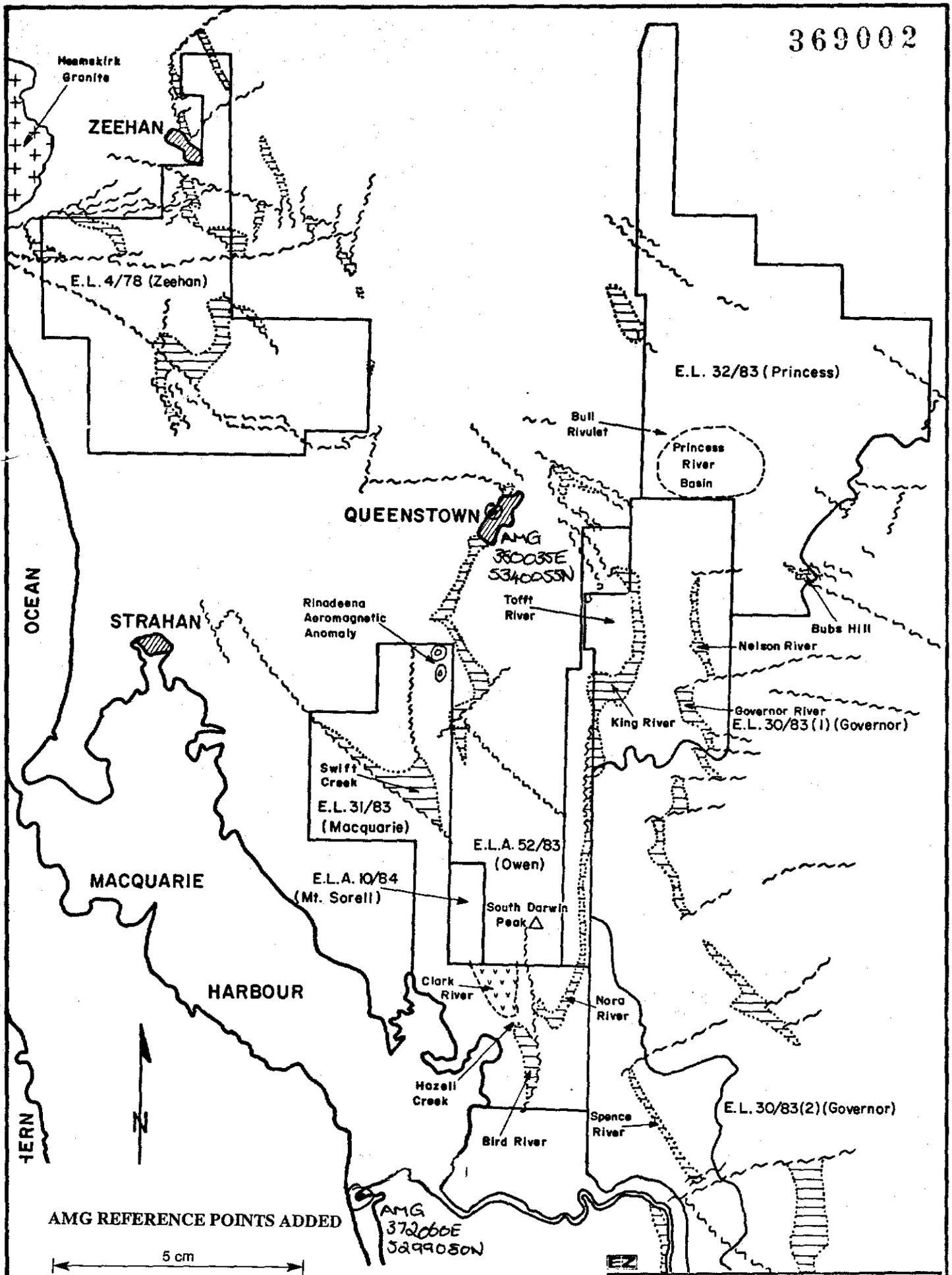
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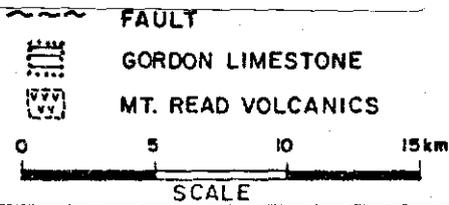
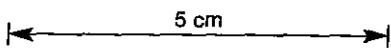
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AMG REFERENCE POINTS ADDED



PROJECT GORDON LIMESTONE J.V.

LOCATIONS

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1. INTRODUCTION

Bubs Hill, a prominent Crotty Quartzite capped hill, is located approximately 16Km to the east of Queenstown along the Lyell Highway at ^{Victoria} Arthurs Pass. An area of Ordovician Gordon Limestone occurs to the east, west and north of Bubs Hill. Small pits and trenches have been discovered situated over limited lead-zinc mineralisation to the east of Bubs Hill.

Exploration was carried out at Bubs Hill from November, 1983 - January, 1984 and involved the establishment of the Bubs Hill Grid and the completion of soil sampling, rock chip sampling and magnetic surveys. Limited regional mapping and rock chip sampling were also completed.

Exploration was directed towards investigating the nature of the mineralisation at Bubs Hill and determining if the mineralisation extended to the west for any distance to warrant further investigation.

2. PREVIOUS WORK

Previous work carried out at Bubs Hill includes the following:

- a) Minor pitting to the east of Bubs Hill, possibly around the turn of the century, by prospectors over areas of outcropping galena-sphalerite-pyrite mineralisation in the Gordon Limestone.
- b) Undertaking of further investigation of the Bubs Hill area by K. Reid for an Honours Thesis in 1963. This work included geological mapping which defined three flat lying stratigraphic horizons in the Gordon Limestone with galena-sphalerite-pyrite mineralisation.
- c) Detailed investigation on the mineralisation in 1970 by the Australian Hanna Ltd., included minor pitting for bulk rock chip samples, and the establishment of an extensive grid. Detailed geological mapping, soil sampling and some rock chip sampling over the grid, resulted in the outlining of several anomalous Pb-Zn zones to the east and west of Bubs Hill. The mineralisation defined by the Australian Hanna Ltd., consists of sphalerite-galena and minor pyrite occurring in irregular veins and patches. These are associated with coarse grained crystalline calcite and quartz. Minor barite also occurs. Disseminated sphalerite-galena-pyrite occurs in minor localised areas.

3. WORK COMPLETED

3.1. Gridding

The Bubs Hill Grid was established to the west of Bubs Hill with the baseline (L9,000N) oriented along the H.E.C. power line at 290° A.M.G., and with the grid lines cut at 200° A.M.G. Twelve grid lines and the baseline were cut, slope-corrected, pegged, tagged and flagged every 20m, for a total of 10.50km.

3.2. Geophysics

A magnetic survey was conducted over the grid at 10m spacings using Scintrex MP-2 Portable Proton Precession Magnetometers. The readings were corrected for diurnal variation and the results are plotted on Figure 6. A base station was located near the H.E.C. four-wheel drive access track which runs into the middle of the grid, at 5,337,275mN 397,535mE.

3.3. Geochemistry

3.3.1. Soil Sampling

A soil sampling survey was conducted over areas of no outcrop which occurred to the south west end of the grid, including Lines 3,600-5,200E (6 lines) and the baseline 9,000N from 3,400-5,280E. A total of 239 samples were collected. Samples were taken at the "C" horizon or as deep as possible. The samples were not sieved but were assayed as such by Analabs for Cu, Zn, Pb, Ag, Fe and Ba, by A.A.S. Over areas of interpreted or possible limestone the samples were halved with one half being retained for later inspection to determine rock chip identity.

The results of the soil sampling are plotted on Figure 3, 4 and 5.

3.3.2. Rock Chip Sampling

The rock chip samples were sent to Analabs where they were crushed and assayed by A.A.S. for Cu, Pb, Zn, Ag, Fe and Ba. Results for the Bubs Hill Grid are plotted on Figs: 3, 4 & 5. Sample descriptions and results are included in Appendix A.

a) The Bubs Hill Grid

Rock chip samples were collected over the eastern part of the Grid where almost continuous outcrop of Gordon Limestone occurs. Lines 5,400-5,900E (6 lines) and the baseline 9,000N from 5,300-600E were sampled every 20m where possible. A total of 171 samples were collected.

b) Associated Areas

Rock chip samples were also taken of limestone exposed along the Lyell Highway between the Nelson River crossing and the Wild Rivers National Park Boundary and limestones exposed in the old limestone quarry to the northeast of the Grid at co-ordinates 5,337,200mN 398,700E. A total of 20 samples were collected.

c) Petrology

5 selected samples were examined petrologically by D. Cowan of Central Mineralogical Services. The petrology report is included in Appendix A.

3.4. Geology

Detailed mapping was carried out over the Bubs Hill Grid, along the Lyell Highway from the Nelson River to the National Park Boundary, and in the old limestone quarry. Regional mapping was taken from the 1:250,000 Mines Department Geology Map.

Where no outcrop was encountered on the Bubs Hill Grid and where limestone was expected to occur, chips were examined from the retained half of the soil sample.

4. RESULTS**4.1. Geophysics: Magnetic Survey (Figure 6)**

In the western part of the grid from L5,200E to L3,600E there is a gradual decrease from southwest to northeast of up to 20 gammas. This trend of the magnetics appears to parallel the boundary of the Precambrian schists with the Ordovician Gordon Limestone. Between L5,000E and L4,800E there is a break which may represent a fault, however the geological interpretation places the fault between L4,400E and L4,800E.

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The eastern part of the grid from L5,400E to the east, is over limestone outcrop. Values seem to fluctuate more than the western part of the grid and increase towards the central eastern part where an area of higher magnetic values occurs on L5,800E from 8,730-8,800N, extending to west and east with minor high values on L5,900E and 5,700E.

This slightly anomalous magnetic area is not coincident with extensive anomalous geochemical values and does not appear to be of any interest.

4.2. Geochemistry (See Appendices A & B & Figures 3, 4 & 5)

Summary

Anomalous lead, zinc and barium values are isolated and discontinuous. Few values are coincident and are not continuous from line to line. These values probably result from isolated fine veins or local disseminations of minor interest.

In the field observable mineralisation occurs to the northeast of the grid on L5,900E as minor small sphalerite-galena filled vughs. Throughout the rest of the limestone outcrop on the Bubs Hill Grid, along the Lyell Highway and in the limestone quarry, euhedral pyrite crystals and disseminations occur in some areas.

4.2.1. Copper

No rock chip samples contained anomalous copper values; all values were <20 ppm.

For the soil samples, most values were <25 ppm but some slightly anomalous values ranged from 30-35 ppm. Six soil samples were moderately anomalous with values from 60-80 ppm. One highly anomalous soil values of 555 ppm occurs in button grass swamp on the western-most part of the baseline at 3,400E.

4.2.2. Lead

Only 10 rock chip samples were slightly anomalous, with values from 40-70 ppm, and only two samples were moderately anomalous with values of 100 and 130 ppm. These anomalous values are confined to the three most easterly lines L5,700E, L5,800E and L5,900E. Background values are generally from 5-20 ppm.

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For soil samples, slightly anomalous values are more common and range from 40-70 ppm. Ten moderately anomalous values occur, ranging from 80-305 ppm. Background values range from 20 ppm to below detection level. Anomalous soil values do not appear to be confined to soils over a particular rock type and cannot be used as a tool to distinguish Gordon Limestone from other rock types.

4.2.3. Zinc

Anomalous rock chip sample results seem to be confined to the most easterly three lines (L5,900-5,700E) similar to the occurrence of anomalous lead values. With a background of 15-30 ppm zinc, slightly anomalous values range from 40-75 ppm and moderately anomalous values range from 80-120 ppm. Two strongly anomalous values occur on L5,800E with values of 560 ppm and 400 ppm.

For zinc values for the soil samples, most anomalous values seem to be restricted to areas of inferred limestone. Slightly anomalous values range from 40-75 ppm and moderately anomalous values range from 80-240 ppm. A background of 10-30 ppm occurs.

4.2.4. Barium

Moderately anomalous values for rock chip samples occur on the four easterly lines from L5,600-5,900E, with a range from 146 ppm to strongly anomalous values up to 1,120 ppm. Several moderately anomalous values result from assays of the Precambrian schists. Background values are erratic and range from 100 ppm to below detection level.

Anomalous values in the soil samples occur in patches over the whole grid. Slightly anomalous values range from 100-135 ppm and moderately anomalous values range from 145-325 ppm. Background values are erratic and are generally from 20-100 ppm.

4.2.5. Silver

No anomalous silver values resulted from the rock chip assays. Most values were below detection level.

4.2.6. Iron

Most rock chip values ranged from 2.65% to 1,000 ppm. These values probably reflect the low pyritic content of the limestones and probably the presence of some iron-carbonate in the Gordon Limestone.

4.3. Petrology

The results of the petrology completed on five rock chip samples from Bubs Hill are included in Appendix A. All of the rock samples showed evidence of extensive dolomitisation of the Ordovician Gordon Limestone. The sequence of events has been defined by D. Cowan in his petrology report and is reinforced by observations in the field by E.Z. geologists.

4.4. Geology

Results of the geological mapping are presented in Figures 1 and 2 (geological map 1:5,000). A large area of flatlying Ordovician Gordon Limestones occurs at Bubs Hill with a conformable overlying cap of Crotty Quartzite. Sphalerite-galena-barite patches, veins and vughs occur to the east of Bubs Hill but the mineralisation to the west is limited to sparse vughs and veinlets on L5,900E only. This block of limestone is bounded on the west, north and south by faults. The easterly boundary lies in the Wild Rivers National Park.

Further outcrops of shallowly dipping limestone occurs along the Lyell Highway and it is interpreted that a fault bounded block of limestone occurs here with remnants of overlying Crotty Quartzite. However no evidence of mineralisation was detected in this block.

Another fault bound block is thought to occur to the north of Bubs Hill and is exposed in the limestone quarry. This block is more steeply dipping to the south and no evidence of mineralisation was observed.

5. CONCLUSIONS

Work on the Bubs Hill Grid from November, 1983 to January, 1984 resulted in limited anomalous lead-zinc-barium anomalies. These can be explained as resulting from sparse sphalerite-galena-minor barite veins and vughs which occur very locally in the upper stratigraphic units of the Gordon Limestone to the west of Bubs Hill. No evidence was found that any extensive mineralisation occurs at Bubs Hill.

In addition, geological mapping has indicated that the extension of the limestone unit to the west is limited. West of Bubs Hill the limestone persists to just past the end of the gridded area as thin fault slices with thin cappings of Crotty Quartzite. No extension of the limestone further to the west is predicted. Consequently there is little chance that extensive strata bound lead-zinc deposits occur within Gordon Limestone west of Bubs Hill.

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*What about
south Crotty*

6. RECOMMENDATIONS

It is recommended that no further work be carried out on or around Bubs Hill.

7. REFERENCES

1. "Report on Exploration of E.L. 12/70" (1970) - The Australian Hanna Ltd.
2. "Report on Exploration of S.P.L's 75, 76, 78 and E.L. 12/70" (1970) - The Australian Hanna Ltd.
3. "The Geology of the Princess River Area" (1963) - K.O. Reid, Hons. Thesis, University of Tasmania, Geology Department.
4. "Report on Prospects in the Central Highlands, held by John Shirley and Partners" (1970) M. Solomon.
5. "Exploration Program: S.P.L's 75, 76, 78 and E.L. 12/70" (1970) by D.J. Groves.
6. "Bubs Hill Lead-Zinc Prospect, Tasmania: Proposed Exploration Program, Phase 1" (July, 1970) M.D. Watts.

APPENDIX A.

Rock Sample Data Sheets and Petrological Reports.

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: ROSEBERY LIMESTONE LOCATION: BUA HILL
COLLECTED BY: I. MARIN DATE: 31/10/83

Sample Number	A.M.G. Co-ordinates BUREAU OF GEOL. CO-ORD.		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	Pb	Zn	Fe	Ba			
59101	9000N	5280E	R.C.	D. GREY BANDED HEAVY CARBONATE FINE GRAINED WITH V. FINE GRAINED DOLOMITIC BANDS.	LIMESTONE				10	15	25	4550	110				
59102	9000N	5300E	R.C.	F. GRAINED GREY CARBONATE WITH BROWNISH SANDY IRREGULAR PATCHES. L. GREY RECRYSTALLIZED STRINGERS AND PATCHES.	LIMESTONE				15	15	25	5550	220				
59103	9000N	5320E	R.C.	F.G.R. L. GREY CARBONATE WITH FINE BANDED "ALGAL MATS". MINOR PIRITE DISSEMINATIONS AND SMALL CRYSTAL AGGREGATES (1%? OF ROCK). MINOR QTZ GRAINS / GRIT.	LIMESTONE				5	15	25	5550	25				
59104	9000N	5340E	R.C.	GREY F.G.R. CARBONATE WITH IRREG. SANDY LAYERS, WELL BURROWED. COMMON IRREG. BOUNDED SANDY PATCHES WITH RECRYSTALLIZED COATINGS (STYLOLITES?)	LIMESTONE				10	10	20	4150	220				
59105	9000N	5360E	R.C.	F. GR. L. GREY CARBONATE WITH MINOR IRREG. SANDY COARSE GRAINED REDDISH PATCHES	LIMESTONE				5	10	20	1400	60				
59106	9000N	5380E	R.C.	F. GR. L. GREY CARBONATE WITH MINOR IRREG. SANDY REDDISH PATCHES (BURROWS). MINOR WHITE-REDDISH RECRYST. VEINS AND PATCHES	LIMESTONE				5	15	20	3200	220				
59107	9000N	5400E	R.C.	V. FINE GR. GREY CARBONATE WITH MINOR WHITE RECRYST. STRINGERS, WITH SPARSE IRREGULAR SANDY PATCHES. WEATHERED SURFACE SHOWS FINE 'BURROWINGS'	LIMESTONE				5	15	20	2150	220				
59108	9000N	5420E	R.C.	F. GR. SANDY BAND (30cm+ WIDE) OF MASSIVE GREY CARBONATE	LIMESTONE				5	15	20	4000	25				

ROCK SAMPLE LEDGER

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	Pb	Zn	Fe	Ba	
59109	9000N	5440E	R.C.	V.FINE GR., D. GREY CARBONATE WITH IRREG. SANDY PATCHES AND BANDS. COMMON CS. GR. RECRYSTALLIZED PATCHES AND STRINGERS.	LIMESTONE				5	10	20	1600	<20		
59110	9000N	5460E	R.C.	V.FINE GR., D. GREY CARBONATE WITH IRREGULAR COMMON SANDY PATCHES (BURROWS). SPARSE RECRIST. SMALL PATCHES.	LIMESTONE				10	10	20	3300	<20		
59111	9000N	5480E	R.C.	F.Z.M. GR., MEDIUM GREY SANDY CARBONATE WITH V.FINE TO FINE GR. IRREGULAR PATCHES (CARBONATE MUD FILLED PATCHES.)	LIMESTONE				10	15	35	3600	<20		
59112	9000N	5500E	R.C.	V.FINE GRAINED, D. GREY CARBONATE WITH COMMON TO ABUNDANT IRREG. SANDY PATCHES (BURROWINGS)	LIMESTONE				5	10	30	3450	<20		
59113	9000N	5520E	R.C.	V.FINE GR., D. GREY CARBONATE WITH IRREG. STRINGERS AND SLIGHTLY ROUNDED PATCHES OF SANDY CARBONATE (BURROWINGS), SPARSE GASTROPOD FOSSILS.	LIMESTONE				5	20	30	3300	<20		
59114	9000N	5540E	R.C.	MED. GR. GREY SANDY CARBONATE WITH SPARSE 'BURROWS' FILLED WITH V. FINE GRAINED CARBONATE MUD. ROCK FORMS A SANDY BAND 10-15 CM. THICK.	LIMESTONE				10	10	25	8000	75		
59115	9000N	5560E	R.C.	V.FINE GR. CARBONATE MUD INTERBEDDED WITH FINE SANDY BANDS UP TO 6CM WIDE. (NO OBVIOUS PERTURBATION)	LIMESTONE				10	15	20	4850	25		
59116	9000N	5580E	R.C.	MED. GR. SANDY CARBONATE WITH FOSSILIFEROUS BAND ABOVE FILLED WITH GASTROPODS UP TO 0.5CM WIDE.	LIMESTONE	T	CMS	CHS 24/115	5	15	20	4150	<20		

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: HOPKIN LIMESTONE LOCALITY: BOBS HILL
COLLECTED BY: L. MARTIN DATE: 31/10/87

Sample Number	A.M.G. Co-ordinates (RUP'S HILL GRID CO-ORD.)		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	Pb	Zn	Fe	Ba	
59117	9000N	5600E	P.C.	F-MED. GR. SANDY CARBONATE BAND WITH MINOR WHITE-BROWN RECRYST. PATCHES ON WEATHERED SURFACE. (POSS. BURROWS WITH MINOR HOLES). THE BAND IS 1M WIDE APPROX.	LIMESTONE						5	20	35	4200	25
59118	9000N	5620E	R.C.	F. GR. SANDY CARBONATE WITH MINOR V. FINE GRAINED IRREG. PATCHES (BURROWS). STYLOLITES(?) WITH CARBONACEOUS SURFACE, OR IRREG. LAMINAE.	LIMESTONE						10	5	20	7200	85
59119	9000N	5640E	P.C.	F. GR. SANDY CARBONATE, GRAY WITH ABUNDANT 'BURROWS' FILLED WITH V. FINE GR. CARBONATE. INTERBEDDED WITH F. GR. CARBONATE BANDS WITH ABUNDANT 'BURROWS' FILLED WITH F. GR. SANDY CARBONATE. (IN UNITS 20-40CM BELOW SAMPLE BAND, CORAL FOSSILS RECRYSTALLIZED.)	LIMESTONE						5	5	20	3000	420
59120	9000N	5660E	P.C.	F. GR. SANDY CARBONATE BURROWED WITH SPARSE V. FINE GR. CARBONATE IRREGULAR PATCHES DOLOMITIC(?)	LIMESTONE						5	20	25	7350	50
59121	9000N	5680E	R.C.	MED-GR. SANDY DOLOMITIC(?) CARBONATE WITH COARSE RECRYST. GRAINS. IRON-OXIDE STAINING IN PATCHES 1.5M ABOVE SAMPLE, IRREG. VEINS OF V. CS. GR. CRYSTALLINE CARBONATE WITH EUHEDRAL QTZ CRYSTALS (UP TO 3cm long)	DOLOMITE						5	25	30	1.65%	25
59122	9000N	5700E	R.C.	MED. GR. GREY-REDDISH SUGARY DOLOMITE	DOLOMITE						5	25	40	6400	50
59123	9000N	5720E	P.C.	MED. GR. GRAY SACCHAROIDAL DOLOMITE WITH SPARSE WEATHERED PYRITE AGG.	DOLOMITE						5	10	20	1.25%	420

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ROCK SAMPLE LEDGER

Sample Number	A.M.G. Co-ordinates 8 USE 11111 6000 CO-ORD		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	Pb	Zn	Fe	Ba			
59124	9000N	5740E	R.C.	F.G.R. DOLOMITE WITH CS.GR CROSS-CUTTING CARBONATE VEINS AND V.CS. GR CARBONATE/QTZ FILLED VUGHS.	DOLOMITE							5	10	25	1.2%	50	
59125	9000N	5760E	R.C.	F.G.R. D.GREY CRYSTALLINE DOLOMITE	DOLOMITE							10	10	30	9500	190	
59126	9000N	5780E	R.C.	F-MED. GR. D.GREY CRYSTALLINE DOLOMITE, WITH LARGE QTZ/CARBONATE VUGHS (TO 5CM DIA.)	DOLOMITE							5	15	20	5000	80	
59127	9000N	5800E	R.C.	F-MED. GR. D.GREY CRYSTALLINE DOLOMITE WITH WHITE RECRYST. PATCHES.	DOLOMITE							10	10	20	9150	40	
59128	9000N	5820E	R.C.	F-MED. GR. D.GREY CRYST. DOLD. WITH MINOR WHITE RECRYST IRRES. PATCHES (SAMPLE IS JUST SOUTH OF 'HOLE 24 TAG')	DOLOMITE							10	20	20	6900	130	
59129	9000N	5900E	R.C.	F-MED. GR. D.GREY SACCHAROIDAL DOLOMITE WITH PINK-WHITE CS. GR. VEINS AND STRINGERS. MINOR V.CS. QTZ/CARBONATE FILLED VUGHS.	DOLOMITE							10	15	20	1.35%	150	
59130	9000N	6100E	R.C.	F.G.R. CRYSTALLINE DOLOMITE, MED. GRAY, WITH L.BROWN CARBONATE STRINGERS AND V.CS. GR. QTZ/CARBONATE IRRES. VUGHS (FLOAT?)	DOLOMITE							5	15	30	<X	5350	93
59131	9000N	6120E	R.C.	F.G.R. DOLOMITE WITH L. BROWN CS.GR. CARBONATE STRINGERS WITH LARGEST STRINGERS WITH CS.GR. QTZ CRYSTALS TO 3CM LENGTH.	DOLOMITE							x	5	85	x	7850	71
59132	9000N	6150E	R.C.	F.G.R. CRYSTALLINE DOLOMITE WITH MINOR L. BROWN CS.GR. CRYSTALLINE CARBONATE STRINGERS WITH MINOR CS.GR. QTZ CRYSTALS.	DOLOMITE							5	10	25	x	1.50%	39

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: GORDON LIMESTONE LOCALITY: BUBS HILL

COLLECTED BY: I. MARTIN

DATE: 1/1/82

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	Pb	Zn	Ag	Fe
59133			R.C.	F-MED. GR. DOLOMITE, SHEARED WITH SOME GRAPHITE COATED SLICHTENSIDES. FINE GR. MINOR SULPHIDE BLENDS AND CRYSTALS GENERALLY ASSOCIATED WITH GRAPHITE. ROCK FORMS PART OF A LARGE SHEAR FACE (N.E. WALL OF QUARRY), OFTEN SLICHTENSIDED, VERTICAL, TRENDING S.E.	DOLOMITE				5	40	25	x	2.20%	39
59134			R.C.	MED. GR., D. GRAY, CRYSTALLINE DOLOMITE WITH L. GRAY RECRIST. PATCHES, STRINGERS AND IRREG. PATCHES OF V. CO. GR. CARBONATE (BUT NO QTZ) MINOR SULPHIDE FLECKS, ON WEATHERED SURFACE IRREG. LIMONITIC COATINGS WITH MINOR PYRITE (?) PSEUDOMORPHS. (SAMPLE FROM LIMESTONE QUARRY, BASE OF S. WALL.)	DOLOMITE				5	60	30	x	1.45%	30
59135			R.C.	F.GR. DOLOMITE MASSIVE BEDDED, (ALMOST VERTICALLY DIPPING) SAMPLE FROM ROAD CUTTING APPROX 600M E. OF H.F.C. SIDE TRACK.	DOLOMITE				5	20	30	x	7.10%	66
59136			B.S.S.	SOIL SAMPLE - 60% CLAY, 10% ORGANIC 30% SAND + ROCK. SAMPLE FROM N. NARROW, FAST FLOWING CREEK (FIRST CREEK S. OF QUARRY)	STREAM SED.				40	140	845	1.0	7.05%	788
59137			R.C.	F. GR. MASSIVE CRYSTALLINE DOLOMITE WITH IRREG. PATCHES + STRINGERS OF L. BROWN CO. GR. CARBONATE WITH MINOR QTZ CRYSTALS. (SAMPLE FROM PIT 1 - DUE EAST OF BUBS HILL.)	DOLOMITE				5	1400	140	1.0	1.80%	56

Smith Form No. 41622

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016

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: GUYON LITTLESTONE

LOCALITY: BUBS HILL

COLLECTED BY: L. MARSH

DATE: 11/11/87

Sample Number	A.M.G.Co-ordinates		Sample Type	Geological Description	Rock-type (Macroscopic)	T or P	Thin or Polished Section			Metal Content (p.p.m. unless specified)						
	N	E					By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Ag	Fe	Ba	
59138			R.C.	F.GR. MASSIVE CRYSTALLINE DOLOMITE WITH IRREG. PATCHES AND STRINGERS OF L. BROWN CS. GR. CARBONATE + MINOR USUALLY CUBEDRAL QTZ + BROWN SPHALERITE. MINOR CROSS-CUTTING DOLOMITE VEINS WITH MINOR SPHALERITE. (SAMPLE FROM PIT 1 - DUE E. OF BUBS HILL)	DOLOMITE (MINERALIZED)						5	665	3300	1.0	2.40%	45
59139			R.C.	MINOR ALTAIR CRYSTALLINE DOLOMITE WITH IRREG. ABUNDANT STRINGERS AND PATCHES OF SIDERITE, COMMON GALENA + SPHALERITE. ROCK APPEARS TO BE A "BRECCIA" IN PLACES (SAMPLE FROM GALENA PIT - PIT 2, S. OF PIT)	DOLOMITE (MINERALIZED)						5	1623%	1300	2.15	1.60%	67
59140			R.C.	M. GR. D. GREY DOLOMITE WITH COMMON DOLOMITE VEINS WITH GALENA, SPHALERITE AND BARITE. (SAMPLE - DUE E. OF BUBS HILL, 10M W. OF PIT 2)	DOLOMITE (MINERALIZED)						15	3.9%	3.2%	35	1.65%	4.27%
59141			R.C.	D. GREY CRYSTALLINE DOLOMITE WITH SPARSE SIDERITE - RECRYST. DOL. - QTZ CRYSTAL PATCHES OR VUGS. (SAMPLE DUE W. OF GALENA PIT (PIT 1) 40M)	DOLOMITE (MINERALIZED)						5	165	135	0.5	8050	296
59142			R.C.	D. GREY, F. GR. BEDDED DOLOMITE. (SAMPLE DUE EAST OF TOP OF BUBS HILL)	DOLOMITE						5	60	50	0.5	1.95%	444
59143			B.S.S.	SOIL SAMPLE: 20% CLAY + SILT; 35% GRAVEL, 40% SAND, 5% ORGANIC. (SAMPLE FROM S. SIDE OF BUBS HILL - CREEK DRAINS EAST)	SOIL SAMPLE						15	135	150	2	1.45%	256

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: 5072m Limestone LOCALITY: BUES HILL

COLLECTED BY: L. WALSH

DATE: 14/11/1983

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	Pb	Zn	Ag	Fe	Ba
59144	8340N	5900E	R.C.	MED. GR., F-MED. GREY-GREEN QTZITE	QTZITE					15	345	80	0.5	5200	326
59145	8540N	5900E	R.C.	F.GR., D. GREY, SANDY LIMESTONE	LIMESTONE					10	40	30	0.5	6950	120
59146	8560N	5900E	R.C.	F.GR., D. GREY LIMESTONE WITH SILICIFIED PIECES (5-10%)	LIMESTONE					5	35	25	0.5	6550	120
59147	8520N	5900E	R.C.	F-MED. GR., LIGHT TO DARK GREY LIMESTONE, WITH MINOR X-BEDDING, TRACE PYRITE.	LIMESTONE					20	35	40	x	1.40%	112.0
59148	8600N	5900E	R.C.	Oxidised yellow-brown sandy LIMESTONE, MED. GR.	LIMESTONE					5	30	35	0.5	1.35%	227
59149	8620N	5900E	R.C.	D. GREY SANDY LIMESTONE WITH ABUNDANT GRADED BEDDING, X-BEDDING	LIMESTONE					5	20	30	0.5	8600	167
59150	8640N	5900E	R.C.	D. GREY SANDY DOLOMITE, PARALLEL TO TOP OF BUES HILL QTZITE LAP.	DOLOMITE					10	35	30	0.5	1.45%	324
59151	8660N	5900E	R.C.	FLOAT (?) OF F.GR., D. GREY DOLOMITE WITH CALCITE/DOL. IN VUGS.	DOLOMITE					5	20	30	0.5	1.55%	117
59152	8680N	5900E	R.C.	F-MED. GR., D. GREY, SANDY DOLOMITE.	DOLOMITE					5	10	35	x	1.35%	443
59153	8700N	5900E	R.C.	F-MED. GR., D. GRAY SANDY DOLOMITE	DOLOMITE					5	20	25	x	7450	74
59154	8720N	5900E	R.C.	F-MED. GR., D. GREY DOLOMITE WITH 10% SILICIFIED.	DOLOMITE					5	40	40	x	1.85%	73
59155	8740N	5900E	R.C.	F.GR., D. GRAY, SANDY DOLOMITE WITH CALCITE VUGS.	DOLOMITE					5	20	35	x	5900	53
59156	8760N	5900E	R.C.	MED. GR., D. GRAY, MUDDY DOLOMITE.	DOLOMITE					5	30	30	x	6750	74
59157	8780N	5900E	R.C.	F.GR., MED. GREY DOLOMITE.	DOLOMITE					5	20	25	x	8950	49
59158	8800N	5900E	R.C.	MED. GRAY, SACCHAROIDAL DOLOMITE	DOLOMITE					5	10	30	x	7650	20
59159	8820N	5900E	R.C.	F.GR., D. GREY DOLOMITE, TRACE SPHERITE.	DOLOMITE					5	25	30	x	9850	83
59160	8840N	5900E	R.C.	MED. GR., D. GREY DOLOMITE WITH	DOLOMITE					5	20	35	x	1.85%	83

Electrolytic Zinc Co. of Australia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: ROSEBERY LIMESTONE LOCALITY: BOSS HILL
COLLECTED BY: L. WILSON, I. MARIN DATE: 14-15/1/1983

Sample Number	A.M.G. Coordinates ROSEBERY HILL GRID CO-ORD.		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	Pb	Zn	Ag	Fe	Ba		
				MINOR SACCHAROIDAL PATCHES, SOME SILICIFIED PATCHES.													
59161	8860N	5900E	R.C.	D. GREY SACCHAROIDAL DOLOMITE WITH TRACE SULPHIDE, SPHALERITE FOUND IN OUTCROP AFTER 8860N.	DOLOMITE	T	CMS	CMS R/1/15	HYDRALIZED BRECCIA.	5	25	35	x	1.50%	31		
59162	8880N	5900E	R.C.	MED. GR., D-MED. GRAY DOLOMITE WITH LARGE QTZ VEINS, HYDROTHERMAL (?) BRECCIA AT 8870N.	DOLOMITE					5	20	55	x	9050	32		
59163	8900N	5900E	R.C.	F-MED. GR., MED. GRAY DOLOMITE WITH BROWN SIDERITE AND PATCHES OF BROWN STAINING.	DOLOMITE					5	40	120	x	6200	49		
59164	8920N	5900E	R.C.	MED. GRAY, MED. GR. CARBONATE	DOLOMITE					5	15	30	x	5450	287		
59165	8280N	5800E	R.C.	QTZ-MICA SCHIST (PRE-CAMBRIAN 'BASEMENT')	QTZ-MICA SCHIST					15	10	20	x	4450	652		
59166	8440N	5800E	R.C.	MED. GR. SANDY, BANDED, M. GRAY CARBONATE, WITH MINOR SHALE LAMINAE, FOSSILIFEROUS BANDS NEARBY WITH YELLOW CRYSTALLINE CARBONATE STAINERS.	LIMESTONE					10	30	50	x	1.65%	136		
59167	8510N	5800E	R.C.	D. GRAY CRYSTALLINE DOLOMITE	DOLOMITE					5	20	40	x	5400	251		
59168	8520N	5800E	R.C.	D. GRAY CRYSTALLINE DOLOMITE WITH CS. GR., L. GRAY VEINS AND STAINERS WITH MINOR SPHALERITE (?) IN SPARSE 'SWELLINGS' IN THE VEINS.	DOLOMITE					5	40	400	0.5	1.40%	29		
59169	8540N	5800E	R.C.	F. GR., MED. GRAY CALCAREOUS SANDSTONE	SANDSTONE					5	35	70	x	7050	58		
59170	8580N	5800E	R.C.	F. GR., MED. GRAY DOLOMITE WITH L. GRAY IRREG. PATCHES OF CS. GRANULE CARBONATE AND QTZ.	DOLOMITE					5	10	25	0.5	6050	38		
59171	8600N	5800E	R.C.	F. GR., MED. GRAY DOLOMITE WITH L. GRAY-YELLOWISH VAGUE STAINING OF CARBONATE WITH SPARSE VUGS.	DOLOMITE	T	CMS	CMS R/1/15	SPARKY DOLOMITE	5	10	50	0.5	6150	74		

Smith Print No. 241622

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019

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: GORDON LIMESTONE

LOCALITY: BUBS HILL

COLLECTED BY: L. MACIN

DATE: 15/11/1983

Sample Number	A.M.G. Co-ordinates KIDS HILL GRID CO-ORDS		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	Pb	Zn	Ag	Fe	Cd
59172	8620N	5800E	R.C.	MED. GRAY SANDY DOLOMITE WITH MINOR YELLOWISH CRYSTALLINE CARBONATE VEINS AND STRINGERS.	DOLOMITE					10	5	30	0.5	7900	82
59173	8640N	5800E	R.C.	F. MED. GR. GRAY SACCHAROIDAL DOLOMITE.	DOLOMITE					10	20	30	0.5	1.95%	223
59174	8660N	5800E	R.C.	F. GR. HEAVY, D. GRAY, SACCHAROIDAL DOLOMITE.	DOLOMITE					5	5	20	1.0	6050	65
59175	8680N	5800E	R.C.	F. GR. GRAY MASSIVE CRYSTALLINE SACCHAROIDAL DOLOMITE.	DOLOMITE					5	5	30	1.5	1.75%	70
59176	8700N	5800E	R.C.	F. GR., D. GRAY, MASSIVE DOLOMITE WITH IRREG. L. GRAY, CS. GRAINED CRYSTALLINE PATCHES.	DOLOMITE					5	100	560	1.5	8100	52
59177	8720N	5800E	R.C.	F. GR., D. GRAY DOLOMITE WITH IRREG. COMMON STRINGERS OF CS. GR. CARBONATE.	DOLOMITE					5	15	20	1.5	7950	51
59178	8740N	5800E	R.C.	F. GR., D. GRAY CARBONATE WITH IRREGULAR PATCHES AND STRINGERS OF V. FINE GR. CLAY/HAEMATITE(?) GRAPHITE.	LIMESTONE					5	5	25	1.5	6550	154
59179	8760N	5800E	R.C.	F. GR., D. GRAY CARBONATE WITH MINOR FTZ SAND/GRIT BANDS (FTZ GRAINS < 5% OF ROCK).	LIMESTONE					10	15	20	1.5	6150	73
59180	8780N	5800E	R.C.	F. GR. GRAY CARBONATE WITH IRREG. STRINGERS UP TO 1CM WIDE OF CS. GRAINED CRYSTALLINE L. GRAY CARBONATE (YELLOWISH ON WEATHERED SURFACES.) SAMPLE IS 5M NORTH OF 8780N.	DOLOMITE					5	5	25	1.5	1.55%	51
59181	8800N	5800E	R.C.	F. GR. D. GRAY CRYSTALLINE DOLOMITE WITH IRREG. STRINGERS OF CS. GRAINED WHITE CARBONATE UP TO 3CM WIDE.	DOLOMITE					5	10	25	1.0	1.35%	73

Smith Print No. 441822

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Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: GORDON LIMESTONE LOCALITY: BUBS HILL
COLLECTED BY: L. MARTIN DATE: 15/11/1983

Sample Number	A.M.G. Co-ordinates MILES WILL G.P.D. CO-ORD.		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	Pb	Zn	Ag	Fe	Ra		
59182	8820N	5800E	R.C.	F.G.R. D. GREY DOLOMITE WITH MINOR CS. GR. RECRYSTALLIZED PATCHES.	DOLOMITE							5	10	30	1.0	7500	54
59183	8840	5800E	R.C.	F → MED. GR. D. GREY MASSIVE. SACCHAROIDAL DOLOMITE.	DOLOMITE							5	65	55	1.0	9000	48
59184	8860	5800E	R.C.	F.G.R. D. GREY FAIRLY MASSIVE. DOLOMITE	DOLOMITE							5	15	110	1.5	8150	50
59185	8880N	5800E	R.C.									5	5	25	1.5	4200	45
59186	8900N	5800E	R.C.	F → MED. GR. SACCHAROIDAL DOLOMITE, WITH SPARSE IRREG. CRYSTALLINE PATCHES.	DOLOMITE							5	5	30	1.5	7050	92
59187	8920N	5800E	R.C.	F.G.R. CRYSTALLINE, D. GREY, FAIRLY MASSIVE DOLOMITE.	DOLOMITE							5	10	30	1.5	3050	69
59188	8940N	5800E	R.C.	F.G.R. D. GREY, CRYSTALLINE DOLOMITE, WITH SPARSE FINE WHITE CS. GR. CRYSTALLINE VEINLETS.	DOLOMITE							5	10	30	x	6000	59
59339	9020N	5800E	R.C.	F.G.R. D. GREY DOLOMITE WITH SPARSE QT-CARBONATE FILLED VUGS.	DOLOMITE							10	10	85	x	8800	53
59338	9040N	5800E	R.C.	F.G.R. D. GREY, CRYSTALLINE DOLOMITE WITH SOME WHITE RECRYST. VEINS OF CARBONATE. MINOR QTZ-CARB. VUGS.	DOLOMITE							5	15	25	x	8050	36
59337	9080N	5800E	R.C.	F → MED. GR. D. GREY DOLOMITE WITH MINOR PYRITE DISSEMINATIONS.	DOLOMITE							10	10	10	x	1.05%	125
59336	9010N	5900E	R.C.	F. GR. D. GREY LIMESTONE; COMMON WITH CS. SANDY L/S INFILLINGS. MINOR V. CS. GR. QTZ-CARB. VUGS.	LIMESTONE							5	10	15	x	6350	56

Smith Print No. 44182

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: RDW ESTD: 1970 LO: PO / 112
COLLECTED BY: LINDA MARTIN DATE: 6-12/1983

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				I or P	By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Ag	Fe	Ba	
59340	9100N	5700E	R.C.	F.G.R., D. GREY, SACCHAROIDAL DOLOMITE BEDDED, WITH MINOR QTZ-CARBONATE VUGHS; SPARSE VEINLETS.	DOLOMITE						10	15	15	x	3600	11
59341	9080N	5700E	R.C.	F.G.R., D. GREY DOLOMITE, BEDDED WITH MINOR CS. SANDY BANDS. MINOR RECRYST. VEINS + PATCHES.	DOLOMITE						10	15	15	x	5250	22
59342	9060N	5700E	R.C.	F-MED. GR. MASSIVE-BEDDED DOLA WITH LESSER BURROWED BANDS. SPARSE RECRYST. VEINLETS.	DOLOMITE						5	15	20	x	4000	17
59343	9040N	5700E	R.C.	F-MED. GR., GREY DOLOMITE WITH COMMON BURROWS AND MINOR SMALL CS. CRYSTALLINE VUGHS OF CARBONATE.	DOLOMITE						5	15	20	x	2600	23
59344	9020N	5700E	R.C.	F-MED. GR., SACCHAROIDAL DOLOMITE MASSIVE-BEDDED WITH FAIRLY COMMON QTZ-CARB. VUGHS.	DOLOMITE						5	15	15	x	5200	21
59345	8980N	5700E	R.C.	F-MED. GR. SACCHAROIDAL DOLOMITE WITH RECRYST. STRINGERS + PATCHES.	DOLOMITE						10	15	20	x	1.15%	31
59346	8960N	5700E	R.C.	F-MED. GR., D. GRAY, SACCHAROIDAL DOLOMITE WITH IRREG. CS. CR. VUGHS OF CARBONATE-MINOR QTZ.	DOLOMITE						10	15	15	x	9000	76
59347	8940N	5700E	R.C.	F-MED. GR., D. GRAY, SACCHAROIDAL DOLOMITE. SPARSE RECRYST. VEINS. (ALSO AT SAMPLE POINT - 59420)	DOLOMITE				Sampled twice.		10	20	60	x	9000	49
59421	8920N	5700E	R.C.	M.G.R., D. GREY DOLOMITIC LIMESTONE WITH MINOR SMALL QTZ VUGHS.	LIMESTONE						10	130	100	y	9250	77
59422	8900N	5700E	R.C.	D.G.R. MICRITE WITH COMMON DOLOMITIC MUDDY LIMESTONE WITH BIOTURBATION.	LIMESTONE						5	35	45	x	2450	33
59423	8880N	5700E	R.C.	DOLOMITIC LIMESTONE, GRAY WITH BIOTURBATION + COMMON BURROWED FOSSILS MINOR CARB. VEINS, SOME QTZ-CARB. VUGHS.	LIMESTONE						10	30	40	x	3750	42

369023

022

ROCK SAMPLE LEDGER

Sample Number	A.M.G. Coordinates BURS. HILL GRID CO-ORDS.		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	Pb	Zn	Ag	Fe	Ba	
59424	8860	5700	R.C.	L. GREY LAMINATED DOLOMITIC LIMESTONE WITH POSS. SANDY PATCHES (?)	LIMESTONE						10	30	50	x	5050	87
59425	8840	5700	R.C.	D. GREY MED. GR. DOLOMITIC L/S WITH SPARSE CARB. VEINS + QTZ- CARB. VUGHS.	LIMESTONE						5	15	20	x	9400	31
59426	8820	5700	R.C.	F-MED. GR., D. GREY DOLOMITIC L/S. SPARSE CARB-SIDERITE-QTZ VUGHS.	LIMESTONE						5	15	25	x	8000	63
59427	8800	5700	R.C.	F-MED. GR., D. GREY DOLOMITIC L/S WITH RARE QTZ-CARB. VUGHS, RELECT FOSSIL GHOSTS IN WHITE CARB.	LIMESTONE						5	10	20	x	1.75%	47
59428	8780	5700	R.C.	F. GR., D. GREY MUDDY DOLOMITIC L/S.	LIMESTONE						10	35	25	x	1.75%	157
59429	8760	5700	R.C.	MED. GR., GREY DOLOMITIC L/S, SANDY WITH RARE WHITE CARB. PATCHES.	LIMESTONE						5	10	20	x	6450	103
59430	8760	5700	R.C.	D. GREY DOLOMITIC L/S WITH MED. GR. MINOR PATCHES, WHITE CARB. VEINS + PATCHES OCCUR IN BEDDED BLOTURB. L/S - POSSIBLY DOLOMITIZED ALONG FAULT ZONE (~5M WIDE)	LIMESTONE						5	15	20	x	9.05%	118
59431	8720	5700	R.C.	MED. GR., PATCHY D. GREY AND FE-STAINED DOLOMITIC LIMESTONE	LIMESTONE						5	30	25	x	1.40%	92
59432	8700	5700	R.C.	GREY DOLOMITIC L/S WITH SOME QTZ-CARB VUGHS	LIMESTONE						10	55	110	x	1.60%	253
59433	8680	5700	R.C.	MED. GR., PATCHY D. GREY DOLOMITIC LIMESTONE WITH WHITE CARB. WISPS.	LIMESTONE						5	70	75	x	1.25%	180
59434	8660	5700	R.C.	F-MED. GR., D. GREY DOLOMITIC LIMESTONE WITH SPARSE PYRITE GRAINS + SOME WHITE CARB. WISPS	LIMESTONE						5	60	25	x	8500	58
59435	8640	5700	R.C.	BROWN → GREY SILTY LIMESTONE	LIMESTONE						15	50	60	x	2.20%	544
59436	8600	5700	R.C.	D. GREY DOLOMITIC L/S WITH CARB. VEINS	LIMESTONE						5	10	35	x	5350	42

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023

ROCK SAMPLE LEDGER

Sample Number	A.M.G. Co-ordinates CURS HILL GRID CO-ORD.		Sample Type	Geological Description	Rock-type (Macroscopic)	T or P	Thin or Polished Section			Metal Content (p.p.m. unless specified)							
	N	E					By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Ag	Fe	Ba	Mn	
				+ PATCHES													
59437	8580	5700	R.C.	E.G.R., PATCHY D. GREY DOLOMITIC LIMESTONE.	LIMESTONE						5	10	25	x	2.35%	42	
59438	8540	5700	R.C.	V.F. GR., D. GREY DOLOMITIC LIMESTONE WITH WHITE CARB. WISPS.	LIMESTONE						10	15	20	x	2.40%	272	
59439	8520	5700	R.C.	GREY QTZ-MICA SCHIST WITH QTZ BOUNDING.	SCHIST						5	5	10	x	8550	633	15
59440	8500	5700	R.C.	GREY QTZ-MICA SCHIST.	SCHIST.						15	20	10	x	1.50%	725	5

Smith Print. No. 41122

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: [REDACTED] L. [REDACTED] H14
COLLECTED BY: L. MARTIN
DATE: 17/1/84

Sample Number	A.M.G. Co-ordinates BURR. HILL GRID (10-0000)		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	Pb	Zn	Ag	Fe	Ba	
59378	9120	5600E	R.C.	F.G.R. MED. L. GRAY L/S WITH MINOR LAMINATED BANDS + MINOR BURROWED BANDS.	LIMESTONE						5	15	20	x	3800	56
59377	9100	5600E	R.C.	F.G.R. DOLOMITE "SUGARY" WITH MINOR CARB- SIDERITE VEINS.	DOLOMITE						5	85	20	x	4000	17
59376	9080N	5600E	R.C.	F.G.R. L/S WITH BANDS OF QTZ GRAINS (UP TO 4CM SIZE), GRADING TO A SANDY LIMESTONE.	LIMESTONE						5	15	20	x	1250	19
59375	9060	5600E	R.C.	F.G.R. L/S WITH MINOR RECYST. PATCHES.	LIMESTONE						5	20	20	x	1450	7
59374	9040	5600E	R.C.	M.G.R. DOLOMITE WITH MINOR RECYST. VEINS / VEINLETS AND MINOR QTZ-CARB. VUGHS.	DOLOMITE						x	10	15	x	1450	2.6
59373	9020	5600E	R.C.	M.G.R. DOLOMITE WITH MINOR QTZ CARB VUGHS + MINOR RECYST. VEINS / VEINLETS.	DOLOMITE						x	10	20	x	1200	18
59372	8980N	5600E	R.C.	M.G.R. DOLOMITE WITH IER. WHITE CRYSTALLINE PATCHES WITH PYRITE CUBES.	DOLOMITE						5	10	20	x	1550	35
59371	8960N	5600E	R.C.	M.G.R. MASSIVE "SUGARY" DOLOMITE	DOLOMITE						5	10	15	x	3600	111
59370	8940N	5600E	R.C.	M.G.R. "SUGARY" DOLOMITE WITH SPARSE PATCHES + FILMS OF WHITISH PYRITE	DOLOMITE						5	15	20	x	2350	114
59369	8920N	5600E	R.C.	F.G.R. DOLOMITIC L/S WITH BURROWED BANDS	LIMESTONE						5	20	35	x	2300	47
59368	8900N	5600E	R.C.	F.G.R. DOLOMITIC L/S WITH COMMON FINE CORAL FRAGS.	LIMESTONE						5	10	20	x	2050	18
59367	8880	5600E	R.C.	F.G.R. L/S WITH COARSE DOLOMITIC L/S INFILLING BURROWS.	LIMESTONE						10	10	30	x	1200	30
59366	8860	5600E	R.C.	M.G.R. DOLOMITE "SUGARY" WITH MINOR BURROWED L/S BANDS NEARBY SAMPLE POINT	DOLOMITE						5	20	20	x	7300	92
59365	8840	5600E	R.C.	F-MED GR. DOLOMITE WITH IER. CS. PATCHES	DOLOMITE						5	20	25	x	6750	10

369026

025

Electrolytic Zinc Co. of Austral Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: [REDACTED] 1576 [REDACTED] TY: [REDACTED] 11111
COLLECTED BY: L. MARTIN DATE: 19/1/84

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	Pb	Zn	Ag	Fe	Ba	Mn
59364	8820	5600	R.C.	F+MED. GR., BANDED DOLOMITE	DOLOMITE					5	15	20	x	3200	x	
59363	8780	5600	R.C.	F+MED. GR. DOLOMITE, MASSIVE TO SLIGHTLY BANDED WITH LS. GR. QTZ-CARB. VUGS AND MINOR VEINLETS WITH SPARSE PYRITE CUBES.	DOLOMITE					5	20	25	x	1450	60	
59362	8760	5600	R.C.	F.G. GRAY, BANDED TO MASSIVE DOLOMITE	DOLOMITE					x	10	15	x	1550	10	
59361	8740	5600	R.C.	MED. GR., GRAY DOLOMITE WITH CARB. WISPS (AT THIS SAMPLE POINT - ALSO 59451)	DOLOMITE			SAMPLED TWICE. 59451		x	10	15	x	3850	14	
										5	x	15	x	2400	28	230
59450	8720	5600	R.C.	M. GR., L. GRAY DOLOMITIC L/S WITH WHITE CARB. WISPS	LIMESTONE					5	5	20	x	1.15%	94	895
59449	8700	5600	R.C.	WELL BEDDED (?) MUDDY L/S WITH SPARSE F.G.R. SST. BANDS (30-50UM)	LIMESTONE					10	15	20	x	1.10%	165	505
59448	8680	5600	R.C.	D. GRAY L/S WITH DOLOMITIC PATCHES	LIMESTONE					10	20	20	x	3300	89	305
59447	8660	5600	R.C.	MED. GR. DOLOMITE WITH THIN BANDS OF MICRITIC L/S HAVING DOLOMITIC PATCHES + BURROWS.	DOLOMITE					10	5	20	y	8800	35	565
59446	8640	5600	R.C.	F.G.R., D. GRAY DOLOMITE WITH CARB. VEINS + WHITE CARB. WISPS.	DOLOMITE					10	10	25	x	1.25%	60	2450
59445	8620	5600	R.C.	F+MED. GR. GRAY SANDY RECRYST. L/S WITH CHERTY SILICA SEGREGATIONS CARB. VEINLETS WITH MINOR PYRITE + (?) Sphaerite / Siderite	LIMESTONE					5	20	20	x	4350	24	540
59444	8600	5600	R.C.	THIN BEDDED MICRITIC L/S AND DOLOMITIC L/S WITH DOLOMITIC 'BURROWS'	LIMESTONE					5	5	20	x	3450	x	245
59443	8580	5600	R.C.	F+MED. GR., PATCHY D. GRAY L/S WITH DOLOMITIC PATCHES	LIMESTONE					5	x	20	x	5250	25	280
59442	8570	5600	R.C.	BLACK MICRITIC L/S	LIMESTONE					5	x	15	x	2300	23	420
59441	8540	5600	R.C.	GREEN-GRAY QTZITE	QUARTZITE					5	20	20	x	3450	146	20

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026

ROCK SAMPLE LEDGER

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	Pb	Zn	Ag	Fe	Ba		
59360	8660	5500C	R.C.	M.G.R. DOLOMITIC L/S, WELL BURROWED WITH V.F. GR. INFILLINGS	LIMESTONE							5	15	20	x	4550	31
59359	8760	5500E	R.C.	V.F. GR., D. GRAY L/S, FINELY BURROWED WITH RECRYSTALLIZED PATCHES.	LIMESTONE							5	30	55	x	1000	31
59358	8780N	5500E	R.C.	F.F.M. GR. Banded DOLOMITE, V. SPARSE BURROWINGS, MINOR PATCH OF FE-OXIDE (?) OR GARNET (?)	DOLOMITE							5	10	15	x	1750	13
59357	8800N	5500E	R.C.	F.G.R., M. GRAY, Banded DOLOMITE	DOLOMITE							5	15	30	x	1750	9
59356	8840N	5500E	R.C.	F-MED. GR. DOLOMITE, BURROWED	DOLOMITE							5	15	15	x	2600	15
59355	8860N	5500E	R.C.	V.F. GR., M. GRAY L/S WITH MINOR RECRYST. PATCHES + GRAINS	LIMESTONE							5	10	25	x	2150	22
59354	8880	5500E	R.C.	F.G.R. DOLOMITE WITH FOSSIL FRAGS, WITH MINOR RECRYST. IRR. PATCHES.	DOLOMITE							5	15	20	x	2450	17
59349	8900	5500E	R.C.	V.F. GR. L/S WITH SPARSE IRR. SANDY L/S PATCHES + "BURROWS"	LIMESTONE							10	20	20	x	3200	20
59350	8920	5500E	R.C.	V.F. GR. L/S WITH MINOR CS. GR. RECRYST. CARB. STRINGERS	LIMESTONE							5	15	20	x	2550	12
59351	8940	5500	R.C.	F-MED. GR. L/S WITH MINOR QTZ-CARB. VUGS + STRINGERS	LIMESTONE							5	10	15	x	1850	12
59352	8960	5500	R.C.	F.G.R. LIMESTONE WITH MINOR QTZ SAND → GRIT, SOME CS. GR. CARB. V.FINE WITH PYRITE SUBS.	LIMESTONE							5	15	15	x	7500	5
59353	8980	5500	R.C.	F-MED. GR. SANDY LIMESTONE WITH MINOR V. FINE GR. PATCHES.	LIMESTONE							10	15	20	x	3200	23
59384	9020	5500	R.C.	F.G.R. DOLOMITIC L/S WITH COMMON FINE BURROWS.	LIMESTONE							5	20	30	x	3400	38
59383	9040	5500	R.C.	MED. → C. GR. DOLOMITIC L/S. WITH COMMON FOSSIL FRAGS + CLASTS NOW RECRYSTALLIZED.	LIMESTONE							5	20	20	x	3400	25
59382	9060	5500	R.C.	F.G.R. DOLOMITIC LIMESTONE WITH BURROWS.	LIMESTONE							10	15	25	x	3550	27

ROCK SAMPLE LEDGER

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				By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Ag	Fe	Ba
59301	5,336,840N	398,680E	R.C.	MED. GR., D. GREY CRYSTALLINE DOLOMITE.	DOLOMITE				10	15	35	X	1.05%	235
59302	5,336,840N	398,630E	R.C.	MED. GR., D. GREY CRYSTALLINE DOLOMITE WITH MINOR 1-2 CM WIDE, L. GRAY, CS. GRAINED CRYSTALLINE CARBONATE VEINS.	DOLOMITE				10	10	25	X	1.30%	156
59303	5,336,840N	398,580E	R.C.	D. GRAY CRYSTALLINE DOLOMITE (?) WITH MINOR BLACK SHALEY LAMINAE.	DOLOMITE				10	10	25	X	8150	226
59304	5,336,840N	398,540E	R.C.	GRAY CARBONATE WITH COMMON FOSSILIFEROUS BANDS, WITH COMMON CRYSTALLINE WHITE CARBONATE STRINGERS AND PATCHES.	LIMESTONE				5	10	20	X	5100	80
59305	5,336,930N	398,360E	R.C.	D. GRAY, FINE GRAINED CARBONATE WITH MINOR RECRYSTALLIZED L. GRAY STRINGERS OF CARBONATE.	LIMESTONE				10	15	20	X	2.55%	147
59306	5,336,960N	398,330E	R.C.	MED. GR., D. GRAY CRYSTALLINE DOLOMITE WITH SPARSE RECRYSTALLIZED VEINLETS OF CS. GR. CARBONATE. MINOR QTZ GRIT AND SAND (LIT. ROCK) WITH SPARSE PYRITE CUBES IN MINOR ZONES.	DOLOMITE				10	30	515	X	2.00%	112
59307	5,337,020N	398,260E	R.C.	D. GRAY CRYSTALLINE DOLOMITE WITH IRREG. PATCHES OF L. GRAY CRYSTALLINE CARBONATE. SPARSE CS. GR. QTZ-CARBONATE FILLED VIBRAS.	DOLOMITE				5	5	70	X	5450	42
59308	5,337,190N	398,250E	R.C.	V.F. GR., GRAY CARBONATE WITH MINOR IRREG. BLENDS AND STRINGERS OF RECRYSTALLIZED CS. GR. CARBONATE. MINOR IRREG. SANDY PATCHES.	LIMESTONE				10	15	20	X	2500	13

Electrolytic Zinc Co. of A'asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: *MINERAL INVESTIGATION*

LOCALITY: *ROSEBERY*

COLLECTED BY: *L. MARTIN*

DATE: *23-24/11/1983*

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	Pb	Zn	Ag	Fe	Ba		
59309	5337,550 _N	396,280 _E	R.C.	V.F. GR CARBONATE WITH MINOR CS. GR. DOLOMITIC (?) IRREG. THIN BANDS THROUGHOUT.	LIMESTONE							5	15	25	x	3700	43
59310	5,337,570 _N	396,330 _E	R.C.	F. GR. DOLOMITIC (?) CARBONATE. WELL BEDDED WITH COMMON FOSSIL FRAGS. OF GASTROPODS AND CORALS (OFTEN SPARRY). MINOR COARSER BANDS, BURROWED.	LIMESTONE							5	10	20	y	5600	18
59311	5,337,740 _N	396,500 _E	R.C.	F. GR., HARD, BROWN TO WHITE BEDDED QTZITE	QTZITE							5	x	85	x	5.00%	50
59312	5,337,580 _N	396,870 _E	R.C.	F. GR., D. GREY LIMESTONE WITH MINOR RECRYSTALLIZED PATCHES AND VEINS OF L. GREY, CS. GR. CARBONATE.	LIMESTONE							10	15	30	x	1.43%	433
59313	5337,570 _N	396,850 _E	R.C.	F. GR., GREY CRYSTALLINE DOLOMITE WITH IRREG. PATCHES AND VEINS OF RECRYSTALLIZED CARBONATE.	DOLOMITE							10	15	30	x	1.25%	1910
59314	5,337,550 _N	396,910 _E	R.C.	F. GR., D. GREY CRYSTALLINE DOLOMITE WITH IRREG. PATCHES AND ZONES OF CS. GR. RECRYSTALLIZED CARBONATE. FE-OXIDE STAINED PATCHES	DOLOMITE							10	10	2.5	x	7650	3130
59315	5337,540 _N	396,990 _E	R.C.	F. GR., L. GREY (ALTERED?) CARBONATE. ROCK BREAKS UP EASILY INTO ANGULAR FRAGS.	DOLOMITE							10	10	20	x	9200	445
59316	5337,500 _N	396,170 _E	R.C.	F → MOD. GR., D. GREY CRYSTALLINE DOLOMITE WITH IRREG. PATCHES AND VEINS OF RECRYSTALLIZED CS. GR. CARBONATE.	DOLOMITE							10	15	30	x	2.65%	134
59317	5337,560 _N	396,450 _E	R.C.	V.F. GR., D. GREY LIMESTONE WITH SPARSE SMALL RECRYSTALLIZED PATCHES.	LIMESTONE							5	10	20	x	2250	18

Smith Form No. 41122

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030

Electrolytic Zinc Co. of Austral Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: IRON ESTD: 1950 LG: B. HILL 501D
COLLECTED BY: L. MARTIN DATE: 2/12/1983

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				By	Reference	Rock-type (Microscopic)	Cu	Pb	Zn	Ag	Fe	Po			
59318	8940N	4800E.	R.C.	F.G.R., WHITE → CREAM QTZITE WITH COMMON WHITE MICA (ALMOST SCHISTOSE TEXTURE). PRE-CAMBRIAN METAMORPHICS.	QTZITE												
59320	9020N	5400	R.C.	F.G.R., D. GREY LIMESTONE WITH COARSER SANDY LIMESTONE INFILLING BURROWS.	LIMESTONE												
59321	9040N	5400	R.C.	F.G.R. SANDY LIMESTONE WITH COMMON BURROWS AND STYLOLITES(?) OF CLAY/BROWN HAEMATITE (?) SUB-PARALLEL TO BEDDING.	LIMESTONE				10	15	25	x	4750	31			
59322	9060	5400	R.C.	F.G.R., D. GREY CARBONATE WITH CS.GR., L. GREY CARBONATE VEINS	LIMESTONE				10	10	30	x	2850	25			
59323	9080	5400	R.C.	F.G.R., D. GREY LIMESTONE WITH SPARSE THIN "BURROWS" FILLED WITH COARSER MATERIAL.	LIMESTONE				5	5	20	x	2350	16			
59324	8980N	5400	R.C.	F.G.R., L. GREY → PINK, WELL BANDED LIMESTONE	LIMESTONE				10	10	30	0.5	6300	53			
59325	8960N	5400	R.C.	F.G.R., D. GREY BEDDED LIMESTONE. "BURROWED" WITH MINOR FOSSILIFEROUS BANDS. MINOR CS. GR. RECRYSTALLIZED PATCHES.	LIMESTONE				5	5	20	0.5	2400	x			
59326	8940N	5400	R.C.	F.G.R., GREY, MASSIVE LIMESTONE	LIMESTONE				5	10	25	x	1800	11			
59327	8920N	5400	R.C.	F.G.R., D. GREY MASSIVE LIMESTONE WITH MINOR TO SPARSE CS. GR. LIMESTONE INFILLED BURROWS.	LIMESTONE				5	10	25	x	1650	x			
59328	8900	5400	R.C.	F.G.R. LIMESTONE WITH MINOR QTZ GRIT/SAND AND WITH MINOR PIRITE	LIMESTONE				10	5	20	x	4300	x			

Smith Print No. 21122

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031

Electrolytic Zinc Co. of Asia Ltd.
Rosebery, Tas.

ROCK SAMPLE LEDGER

PROJECT: GORDON BRICKSTONE LOCALITY: B HIG

COLLECTED BY: L. MARTIN

DATE: 2-6/12/1983

Sample Number	A.M.G. Coordinates EUB. HILL GRID SP. DOTS		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	Pb	Zn	Ag	Fe	Ba		
				CRYSTALS, COMMON RECRYSTALLIZED GRAINS THROUGHOUT.													
59329	8820N	5400	R.C.	F.G.R. LIMESTONE WITH MINOR QTZ GRIT/SAND, COMMON RECRYSTALLIZED GRAINS THROUGHOUT.	LIMESTONE							5	5	25	x	1000	y
59330	8860N	5400	R.C.	F.G.R., D. GREY, LIMESTONE WITH LESSER CS. SANDY LAYERS, THOROUGHLY "BURROWED".	LIMESTONE							5	10	25	x	3050	16
59331	8840	5400	R.C.	F.G.R., D. GREY, LIMESTONE WITH V. CS. GR. CARBONATE VEIN.	LIMESTONE							5	5	25	0.5	1.10%	11
59332	8820N	5400	R.C.	F.G.R., D. GREY, LIMESTONE WITH ABUNDANT "BURROWS" FILLED WITH COARSER MATERIAL.	LIMESTONE							5	15	30	0.5	5150	11
59333	8800	5400	R.C.	V. CS. GR. CRYSTALLINE WHITE → PINK CARBONATE, WITH BANDING IN CRYSTALS RESEMBLING THAT IN STALACTITES.	CARBONATE							5	5	25	0.5	150	x
59334	8780	5400	R.C.	F.G.R. GREY LIMESTONE WITH MINOR SANDY LIMESTONE BANDS.	LIMESTONE							5	5	20	0.5	2350	x
59335	8740	5400	R.C.	F → MED. GR., D. GREY LIMESTONE WITH MED. GR. SANDY BANDS, THOROUGHLY "BURROWED".	LIMESTONE							5	10	35	0.5	3350	17

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Central Mineralogical Services

USE	FROM	DATE	CMS	
DATE	17 FEB 1984		39 Beulah Road Norwood, S.A. 5067 Telephone 42 5659	
BY	ENG	GRD	INDUST	

The Manager
 Attn. Chief Geologist
 Electrolytic Zinc Co. of
 Australasia Ltd.
 West Coast Mines
 P.O. Box 21
 ROSEBERY / TAS. 7470

15th February, 1984

REPORT CMS 84/1/15

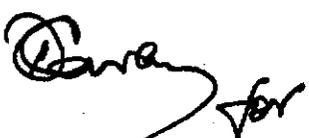
YOUR REFERENCE: Order No. 900480
 Order No. 900479

DATE RECEIVED: 16th January, 1984

SAMPLE NOS.: 13 Samples

SUBMITTED BY: I.J. Mathison

WORK REQUESTED: Petrology


H.W. Fander, M. Sc.

REPORT CMS 84/1/15

Thirteen rock samples of Gordon Limestone, in two groups (Bubb's Hill and Zeehan), were received for petrological examination. Representative thin-sections were prepared, examined in transmitted light and, together with respective offcuts, in oblique incident light. Attached brief tabulated petrological descriptions incorporate microscopic data, results of carbonate staining tests, and include interpretative comments.

Summary

With minor exceptions, this suite comprises variably dolomitised limestones with relict characteristics typical of the Gordon Limestone.

The Bubb's Hill suite comprises weakly laminated non- or incipiently fossiliferous limestones, typically impure (weakly argillaceous, pyritic, carbonaceous) and variously massive (59403, 59417) to annelid-burrowed (59418) or slumped (59419). This group includes a single dolomitised limestone breccia or clastic limestone (59413) and, overall, reflects a relatively distal quiet water facies and an inferred intermediate depth sedimentary environment. Fossils are represented only by minor fragmented bryozoan and bivalve components in 59418.

In contrast, the Zeehan suite is characterised by a variety of clastic limestones with laminated impure types, analogous to those at Bubb's Hill represented only by samples 59006 and 59022. The breccias include strongly (tabulate coralline, bryozoan, bivalve) fossiliferous (59009), oolitic (59031), and coarser, lithic, calciruditic types (59020, 59030, 59032 and 59033 in part). These rocks reflect a relatively shallow marginal biohermal to bank-type, medium to high energy depositional environment.

Sample 59033 is an altered (silicified) polymict conglomerate, notably quartzose and with an uncertain limestone clast component due to alteration effects. This rock is of uncertain affinities stratigraphically, but may correlate with calcirudites (coralline in part) developed in some of the North West Coast Gordon Limestone sequence.

Both suites exhibit analogous alteration patterns characterised by dolomitisation. This is marked, initially by varying degrees of replacement of the primary microcrystalline (micritic) calcite by fine-grained sparry dolomite (strictly dolomite-ankerite). Several rocks exhibit subsequent development of coarser-grained dolomite, or elsewhere similarly textured, weakly ferroan calcite, as vug-fillings, veins and marginally corrosive to replacive aggregates, and this phase is locally accompanied by pale sphalerite. Isolated examples of temporally late calcite veins are related, at least in part, to a weak and non-penetrative stress event locally reflected in incipient slaty cleavage development in impure (argillaceous) limestones. Some rocks, notably fault-proximal types, exhibit marked and pervasive silicification with minor associated clays (kaolin) and traces of colourless tourmaline.

The following sequence of alteration phenomena may be defined by consideration of the total suite of rocks:

1. Initial partial to complete replacement of micritic calcite by fine sparry ferroan dolomite. Where replacive (the norm), this phase is grey in hand specimen due to "inherited" carbonaceous stainings..
2. Development of medium-grained ferroan dolomite in veins, vugs, replacements. This phase is similarly grey where replacive, but is clear (white in hand specimen) in vugs, veins, etc.

Individual rocks exhibit calcite vein development as a variant of, and apparently contemporaneous with, the second generation of dolomite. Minor quartz may be associated; similarly, disseminations of pale sphalerite.

3. Stylolite development.
4. Weak stress effects with minor associated calcite veins (crosscutting stylolites).
5. Fault-related silicification.

Phase 2 dolomite (or calcite-quartz) assemblages appear dependant on Phase 1 dolomitisation in that Phase 2 assemblages tend to occur as cavity- or fracture-fillings, suggesting the potential volume reduction accompanying dolomitisation as a probable spatial control. The pre-stylolite nature of Phases 1 and 2 defines these as diagenetic in terms of temporal relationships. General features may be compared with alteration patterns for example in broadly Mississippi Valley-type Pb-Zn occurrences on the Lennard Shelf (W.A.) and in the Gippsland area (Victoria) and contrasted with the Zeehan-type Pb-Ag(-Zn) vein mineralisation.

D. Cowan, B. Sc.

Sample No.	Classification - Composition	Fabric	Accessories	Comments
59403 (T.S. 48760)	"Dolomite". Sparry dolomite-ankerite with minor intergranular and included clay. Sporadic veinlets, small vugs of coarser-grained carbonate with minor associated quartz, late films of calcite.	Faintly laminated (relict bedding), with concordant veins, vugs. Even-grained (mean 100 μ).	Traces of ultrafine carbonaceous matter, minor clots, bedding-related disseminations partly oxidised very fine.	Dolomitised impure (weakly carbonaceous, argillaceous, pyritic) limestone. Whitish veins, vugs are infilled solution cavities. Non-fossiliferous.
59413	Mineralised Breccia. Clasts of weakly (oxidised) pyritic carbonaceous dolomite (similar to 59403), cemented with medium-grained dolomite-ankerite and coarse sparry carbonate with associated coarse semi-massive	Clasts analogous to 59403, similarly carbonate-veined/vugged. Coarsely crystalline matrix.	Minor patches, films of cloudy secondary sphalerite-replacive smithsonite.	Relatively medium-grained, dolomite-veined carbonate (dolomitised impure limestone) rock, brecciated, carbonate-sphalerite-healed.
59417	"Dolomite". Sparry pale sphalerite. dolomite-ankerite with minor intergrown quartz, thinly disseminated fine to ultrafine pyrite, minor carbonaceous matter, sparse dolomite-quartz veinlets.	Even-grained (mean 60 μ to 70 μ) with mildly deformed relict bedding laminations, weakly stylolitic.	Traces clay, intergranular and included in dolomite. Minor fine-scale carbonate vugs. Rare detrital zircon.	Close affinities with 59403. Slightly relatively carbonaceous and pyritic. Quartz is partly corroded and of authigenic character.
59418	Dolomitic Limestone. Semi-porcellanous, slightly argillaceous limestone with irregular to ovoid zones of sparry dolomite. Sporadic dolomite veinlets, disseminated carbonaceous, argillaceous stylolites.	Weakly laminated, weakly bivalve-bryozoan-fossiliferous limestone with dolomitised argillaceous zones.	Traces fine pyrite in dolomitised zones, ultrafine pyrite in host limestone. Minor late (post-stylolite) calcite veinlets.	Dolomitised zones relatively argillaceous, apparently represent annelid burrows, partly segmented by stylolitisation and weak subsequent shearing.
59419	Dolomitic Limestone. Semi-porcellanous, massive to weakly quartzose-silty limestone with irregular zones of slightly coarser-grained limestone, extensively replaced by sparry dolomite; marginally disseminated	Mildly sheared. Slump breccia-like (?bioturbated) with rafts of silty limestone in massive limestone matrix.	Pervasive traces carbonaceous matter, minor traces fine to ultrafine pyrite, minor dolomite veinlets.	Affinities with 59418. In contrast, selective dolomitisation appears related to (rafted) relatively slightly coarser-grained interbeds rather than burrows. Non-fossiliferous.
59006	Siderite Rock. Microcrystalline to semi-porcellanous sideritic carbonate with minor vugs, veinlets of coarser-grained carbonate; minor carbonaceous matter.	Essentially massive, homogeneous. Relict contorted to brecciated bedding laminations defined by carbonaceous matter.	Rare carbonaceous stylolites.	Interpreted as sideritised impure limestone or limestone breccia; "secondary" characteristics. Siderite (confirmed by XRD) may include a smithsonite component.
59009	Dolomitic Limestone. Microcrystalline to semi-porcellanous calcite with sporadic irregular zones, films of fine sparry dolomite. Frequent vugs, minor crosscutting veinlets of medium-grained calcite.	Strongly fossiliferous, massive to breccia-like with cavity-filling to replacive dolomite, marginally corroded by calcite.	Sporadic carbonaceous stylolites, minor silt-sized clastic quartz. Minor secondary quartz; traces pyrite.	Tabulate coralline limestone/limestone breccia with interclast and replacive dolomite predating calcite (+ quartz) segregations; stylolites and late crosscutting calcite veins.
59020	Silicified Breccia. Fine to microcrystalline quartz with minor included and intergrown kaolin. Sporadic small vugs, late veinlets of coarser quartz with recrystallized chalcedonic selvages.	Relict breccia textures with silicified millimetric clasts, vuggy matrix. Rare zones of pseudomorphed fine sparry carbonate.	Minor traces colourless tourmaline, partly bleached carbonaceous matter, carbonaceous stylolites.	Thoroughly silicified impure limestone breccia. Relict features consistent with partial dolomitisation, stylolite development postdating brecciation.

Sample No.	Classification - Composition	Fabric	Accessories	CENTRAL MINERALOGICAL SERVICES Comments
59022	<u>Impure Limestone</u> . Microcrystalline calcite with minor closely intergrown sericite. Frequent boudinaged diagenetic calcite veinlets. Minor clots of fine sparry dolomite. Sparse bivalve shell fragments. Pervasive carbonaceous matter.	Schistose on a micro-scale with minor boudinaged bedding in relatively calcite-veined areas.	Minor traces of fine to ultrafine pyrite.	Argillaceous, carbonaceous, weakly pyritic impure limestone. Incipiently fossiliferous. Diagenetic calcite veining predates incipient dolomitisation. Relatively sheared.
59030	<u>Dolomitic Breccia</u> . Clasts of sparry dolomite-ankerite rock (dolomitised limestone) with a partly dolomitised microcrystalline impure limestone matrix. Disseminated small-scale vugs of clear sparry dolomite.	Random angular breccia with semi-selectively dolomitised clasts. Weakly (sericitic) stylolitic.	Traces corroded detrital quartz and muscovite flakes in clasts and matrix. Rare microscopic blebs of pale sphalerite.	Intraformational limestone breccia with relatively dolomitised clasts. Sphalerite associated with late vugs of relatively clear dolomite and with sericitic stylolites.
59031	<u>Dolomitised Calcarenite</u> . Relict framework of lithic clasts, oolites, oolite fragments pseudomorphed by fine sparry dolomite-ankerite. Corrosive matrix of medium-grained, granular to sparry ankeritic dolomite.	Loose, weakly bedded, medium-coarse sandy framework, homogeneous matrix.	Traces carbonaceous matter; minor traces oxidised fine-grained pyrite.	Pervasively dolomitised, moderately to well-sorted oolitic calcarenite with marginal bank "clastic limestone" characteristics.
59032	<u>Silicified Limestone Breccia</u> . Fine to microcrystalline quartz with varying proportions closely intergrown kaolin; variously pseudomorphous after silt- to pebble-sized, angular to rounded lithic clasts and featureless matrix.	Variable, from coarse, poorly sorted clastic to laminated; pseudomorphed by slightly vuggy quartz.	Disseminated cavities after carbonate rhombs. Traces relict detrital schorl, apatite, secondary colourless tourmaline.	Close affinities with 59020. Relict features consistent with a weakly dolomitised semi-bedded limestone breccia/clastic limestone with accessory detrital components.
59033 (T.S. 48772)	<u>Silicified "Breccia"</u> . Fine to microcrystalline quartz with minor closely intergrown kaolin. Relict framework of sand- to pebble-sized quartz grains, composites, silicified pelite and psammopelite clasts. Minor discontinuous quartz veins, vugs.	Relict sand-supported, coarsely bedded, conglomeratic.	Minor traces detrital schorl, zircon, rutile, minor cavities after carbonate rhombs.	Thoroughly silicified polymict conglomerate with an ill-defined (silicified) limestone clast component. Conspicuous relict detrital quartz, psammopelitic clasts in contrast to 59032.

APPENDIX B.

Soil Sample Data Sheets.

E Z Co of A'Asia Ltd
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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE F.L. 3/83 Material : SOIL SAMPLE Size Fraction Analysed :
 Locality : BUBS HILL, E. OF R. TOWN. Sample Method : HAND AUGER Analysed By : Anala
 Grid Name : BUBS HILL GRID. Sampled By : B. MOYLE Method : A.A.S.
 Nominal Grid Azimuth : Date : 7/12/1983

SAMPLE NUMBER	Sample Location Data				Sample Composition Data				Geology	METAL CONTENT (ppm. unless specified)									
	Grid	AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ba
	NOORTHING	EASTING	EASTING																
52876	9120	53	3	1.10	BLGY	35	15	50								8350		100	
77	9100	53	3	4.5	GRBR	50	40	10			30	55	55	0.5		1120		85	
78	9080	53	3	5.0	GR	20	80				15	50	50	X		1155		85	
79	9060	53	3	7.5	BLGY	75	20	0.5			X	10	10	X		5850		60	
52880	9040	53	3	9.5	GNOR	60	15	25			S	20	X	X		1195		105	
81	9020	53	3	4.5	BRGR	15	15	60			15	20	S	X		1160		85	
82	9000	53	3	6.0	GRBR	65	30	0.5			20	115	10	X		1125		90	
83	8980	53	3		LTBR	80	15	0.5			10	20	X	X		3400		100	
84	8960	53	3	8.0	BLGY	85	10	0.5			10	10	X	X		5050		110	
85	8940	53	3	3.0	BR	60	15	15	10		25	20	S	0.5		1175		115	
86	8920	53	3	9.0	BRBLGY	90	0.5	0.5			10	15	10	X		4400		145	
87	8900	53	3	1.45	CRBR	60	40				10	S	S	X		3700		115	
88	8880	53	3	8.8	LTBR	90	0.5	0.5			S	10	S	X		3000		110	
89	8860	53	3	1.45	LTBR	80	20				15	S	10	X		2650		90	
52890	8840	53	3	5.0	LTBR	70	30				10	10	20	0.5		2950		75	
91	8820	53	3	1.20	GYCR	80	20				10	10	15	X		5300		65	
92	8800	53	3	1.35	GRGY	60	30	10			60	15	35	X		1150		75	

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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE E.L. 32/83 Material : SOIL SAMPLE Size Fraction Analysed :
 Locality : BURS HILL, E. OF QUEENSTOWN Sample Method : HAND. ANALY. Analysed By : ANALAB
 Grid Name : BURS HILL GRID Sampled By : B. MOYLE Method : A.A.S.
 Nominal Grid Azimuth : Date : 6/12/1983

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm unless specified)									
	Grid Line No		AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam	Cu	Pb	Zn	Ag	Au	Fe	Mn	Ba
	Grid	NORTHING	EASTING																	
S2830	9080	53	3	35	BR	65	15	15	05			10	15	X	X		3750		135	
31	9060	53	3	25	BR	35	60	05				5	X	X	X		2900		15	
32	9040	53	3	18	BR	35	60	05				10	X	X	X		2250		25	
33	9020	53	3	40	DIR BR	55	40	05				10	X	X	X		3050		15	
34	9000	53	3	14	BR WH	45	40	05	10			10	S	S	0.5		4400		10	
25	8980	53	3	80	CR	0	199					X	X	S	X		970		5	
36	8960	53	3	60	CR	0	199					X	X	X	0.5		890		10	
37	8940	53	3	85	WH	0	199					X	X	X	X		1350		10	
38	8920	53	3	45	CR	99	01					S	X	X	0.5		2450		25	
39	8900	53	3	25	BR	60	30	05	05			10	S	15	0.5		1200		20	
S2840	8880	53	3	30	CR LT BR	20	80					S	X	15	X		1200		30	
41	8860	53	3	23	CR		95	05				S	S	15	0.5		1650		25	
42	8840	53	3		BR	30	65	05				25	40	10	0.5		1750		95	
43	8820	53	3	30		30	60	05	05			10	15	20	X		2400		125	
44	8800	53	3	46	OR	80	10	10				25	S	20	0.5		3.40		175	
45	8780	53	3	16	OR	80	05	10	05			40	15	30	0.5		4.20		155	
46	8760	53	3	45	LT BR OR	80	10	10				55	10	10	X		3.60		90	
47	8740	53	3	30	BR	75	15	10				S	X	25	0.5		8650		100	
48	8720	53	3	22	BR	70	20	10				10	15	10	X		2600		70	
49	8700	53	3	18	CR	10	85	05				X	X	15	X		3100		55	
S2850	8680	53	3	20	CR	0	199					S	X	S	0.5		3350		35	
51	8660	53	3	10	CR GY	80	20					10	X	S	0.5		1400		25	

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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE E.L. 32/83 Material : SOIL SAMPLE
 Locality : BUBS HILL, E. OF ROSEBERRY Sample Method : HAND AUGER
 Grid Name : BUBS HILL GRID Sampled By : J. MAYLE
 Nominal Grid Azimuth : Date : 5/12/1983
 Size Fraction Analysed :
 Analysed By :
 Method : A.A.S.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm unless specified)									
	Grnd Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	SAND	Rock Frag.		Organic	Contam	Cu	Pb	Zn	Ag	Au	Fe	Mn	Ba
	4800	NORTHING	EASTING	3																
52810	9110053		3	85	DKGN	60	20	15	05	✓	10	45	80	X		1195		135		
11	908053		3	15	BRWH	40	15	30	15		30	45	15	X		1115		20		
12	906053		3	30	DKBRWH	50	10	30	10		X	X	5	X		1700		30		
13	904053		3	15	DKBR	60	10	20	10	✓	35	70	30	X		2450		20		
14	902053		3	10	BR	60	15	15	10	✓	25	45	10	X		2800		15		
15	900053		3	10	BR LT BR	80	10		10		35	70	30	X		2700		10		
16	898053		3	15	DK BR CR	60	10	15	15	✓	15	20	15	X		1250		20		
17	896053		3	15	LT BR WH	70	10	15	05	✓	20	80	10	X		3000		35		
18	894053		3	15	GY BR	80	10	05	05	✓	25	140	50	X		1300		25		
19	892053		3	30	CR	30	65	05			10	5	5	X		2150		60		
52820	890053		3	15	LT BR	30	65	05			10	20	10	X		1400		20		
21	888053		3	12	LT BR	40	60				10	15	10	X		4350		45		
22	886053		3	20	BR CR	20	30	20	10		20	55	15	X		1900		45		
23	884053		3		LT PK	15	85				X	10	15	X		1400		20		
24	882053		3	10	BR	60	30	10			10	15	25	X		1750		15		
25	880053		3	12		45	40	10			20	10	20	X		7050		20		
26	878053		3	20	LT BR	20	80				10	5	5	X		1750		15		
27	876053		3	12	LT BR CR	30	60	05	05		15	15	20	X		2200		15		
28	874053		3	12	GY	20	70	05	05		40	65	20	X		2800		25		
29	872053		3	06	LT BR	25	70	05			50	65	10	X		2300		20		
	870053		3																	
	868053		3																	
	866053		3																	
	864053		3																	
	862053		3																	
	860053		3																	
	53		3																	
	53		3																	
	53		3																	
	53		3																	
	53		3																	

369046

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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE E.L. 32/82 **Material** : SOIL SAMPLE
Locality : BURS HILL E. OF QUEENSTOWN **Sample Method** : HAND PICKED
Grid Name : BURS HILL GRID **Sampled By** : G. BEESTON & D. BATTEN
Nominal Grid Azimuth : **Date** : 5/6/12/83
Size Fraction Analysed :
Analysed By : **Method** : A.A.S.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					METAL CONTENT (ppm unless specified)										
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	SAND	Rock Frag.	Organic	Contam.	Geology	Cu	Pb	Zn	As	Au	Fe	Mn	Ba
	Grid	NORTHING	EASTING																	
52701	9240	53		3	40	GYWH	20	30	50				10	X	10	X		2700		70
2	9220	53		3	30	GYWH	20	20	60				5	X	10	X		1800		60
3	9200	53		3	11.15	ORBR	85	05	10				50	70	240	X		1700		80
4	9180	53		3	30	GYWH	20	20	60				10	S	10	X		3300		35
5	9160	53		3	40	GYWH	10	30	60				10	X	10	X		2250		30
6	9140	53		3	95	GY	50	45	05				20	15	20	X		3950		105
7	9120	53		3	70	GYBR	30	20	50				15	15	35	X		2550		95
8	9100	53		3	35	BR	20	20	60				5	X	20	X		7050		55
9	9080	53		3	65	BR	40	10	50				20	S	20	X		5600		40
52710	9060	53		3	11.19	GNBR	60	25	15				75	30	105	X		2900		55
11	9040	53		3	60	ORBR	50	10	40				80	40	100	X		6400		90
12	9020	53		3	40	ORBR	90	05	05				65	45	130	X		6450		65
13	9000	53		3	30	BR LT BR	25	25	50				20	15	15	X		2200		45
14	8980	53		3	30	GYCR	05	20	75				20	S	10	X		3600		40
15	8960	53		3	25	CR	20	40	40				10	15	10	X		4950		35
16	8940	53		3	25	CR LT BR	10	60	30				25	X	5	X		2650		30
17	8920	53		3	25	CR LT BR	30	40	40				25	S	5	X		4000		35
18	8900	53		3	20	BR CR	10	25	60	0.5			10	X	5	X		1700		25
19	8880	53		3	25	CR LT BR	10	30	60				20	X	5	X		1050		10
52720	8860	53		3	40	DK BR CR	20	20	60				10	X	5	X		1300		40
21	8840	53		3	45	CR BR	20	30	50				20	X	5	X		2300		10
22	8820	53		3	52	CR	10	70	20				15	X	5	X		1000		10
23	8800	53		3	25	CR BR	10	40	50				X	X	5	X		1750		5
24	8780	53		3	35	LT BR	20	10	60	10			10	15	5	X		2300		50
25	8760	53		3	25	GY CR	20	30	50				15	10	10	X		4300		40
26	8740	53		3	70	LT GY	40	30	30				10	15	5	X		2600		55
27	8720	53		3	65	BR	60	30	10				10	10	5	X		1000		40
28	8700	53		3	35	CR	20	30	50				10	X	10	X		1600		50
29	8680	53		3	70	BR WH	20	20	60				10	X	5	X		2850		200
52730	8660	53		3	35	BR	15	25	60				10	S	15	X		1200		45

369047

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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE EL 22/83 Material : SOIL SAMPLE Site Fraction Analysed :
 Locality : BURS. HILL, E. OF QUEENSTOWN Sample Method : HAND PICKED Analysed By : Anlake
 Grid Name : BURS. HILL, SRD Sampled By : G. BERESFORD Method : A.A.S.
 Nominal Grid Azimuth : Date : 6/12/83

SAMPLE NUMBER	Sample Location Data				Sample Composition Data						Geology	METAL CONTENT (ppm unless specified)								
	Grid Line No		AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.	Organic		Contam	Cu	Pb	Zn	As	Au	Fe	Mn	Ba
	GTM	NORTHING	EASTING																	
52732	9160	53	3	25	DKBR	60	20	10	10		25	50	40	X		2700		25		
38	9140	53	3	30	DKBR	75	10	05	10		20	70	55	X		2950		35		
37	9120	53	3	35	BLBRGY	40	10	40	10		15	25	15	X		2750		70		
52740	9100	53	3	20	BR	30	25	40	05		15	55	15	X		4300		75		
41	9080	53	3	20	BR CR	10	25	60	05		20	50	15	X		1750		35		
42	9060	53	3	20	BR CR	20	30	45	05		20	40	20	X		2850		25		
43	9040	53	3	30	CR LT BR	40	50	10			5	5	10	X		2350		70		
44	9020	53	3	25	CR LT BR	30	30	40			5	20	10	X		3250		110		
45	9000	53	3	20	CR DK BR	30	20	50			20	20	10	X		2400		140		
44	8980	53	3	40	BR	20	20	50	10	✓	25	75	15	X		2350		165		
47	8960	53	3	30	BR	20	30	50			5	X	5	X		2200		40		
48	8940	53	3	20	GN LT BR	10	25	60	05		10	25	5	X		1950		75		
49	8920	53	3	20	CR BR	15	30	50	05		10	10	10	X		2000		25		
50	8900	53	3	20	CR BR	10	30	60			5	X	5	X		685		15		
51	8880	53	3	30	GY BR	10	25	60	05		10	30	10	X		2250		60		
52	8860	53	3	20	CR BK	25	20	50	05		5	40	10	X		3050		95		
53	8840	53	3	20	LT BR	50	40	10			15	40	15	X		1800		85		
54	8820	53	3	20	DK BR	45	25	25	05		30	115	10	X		2100		65		
55	8800	53	3	35	CR BR	30	20	50			X	X	10	X		2150		110		
56	8780	53	3	20	CR LT BR	25	25	50			X	5	5	X		1750		85		
57	8760	53	3	25	LT BR CR	20	30	50			X	X	5	X		1700		95		
58	8740	53	3	25	BR WH	40	20	40			5	15	10	X		1650		65		
59	8720	53	3	25	CR LT BR	30	40	30			X	X	5	X		1150		35		
60	8700	53	3	30	BR CR	25	25	50			X	X	10	X		1850		30		
61	8680	53	3	20	BR CR	15	30	00	05		X	5	10	X		1550		40		
62	8660	53	3	20	BR WH	25	25	50			X	5	10	X		1400		25		
63	8640	53	3	20	CR	20	40	40			X	X	5	X		1200		60		
64	8620	53	3	20	CR	10	60	30			X	10	10	X		830		20		
65	8600	53	3	40	WH CR	20	60	20			X	X	10	X		1750		150		
66	8580	53	3	90	WH	10	85	05			X	X	10	X		875		25		

369049

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GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE E.L. 32/83 Material : SOIL SAMPLE
 Locality : BUBS HILL, E. OF QUEENSTOWN. Sample Method : HAND AUGER
 Grid Name : BUBS HILL GRID. Sampled By : B. HAYLE, G. BEEBEER, J. BATTEN
 Nominal Grid Azimuth : Date : 7/12/83
 Size Fraction Analysed :
 Analysed By :
 Method : A.A.S.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No	AMG CO-ORDINATES			DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ba
	Grid Easting	NORTHING	EASTING	Grid Easting																
52893	3400	53	3	70	BL	80	10	10				555	X	15	X		1100		30	
94	3420	53	3	36	WHDKBR	45	40	100	5			X	X	10	X		1050		15	
95	3440	53	3	65	DKBR	60	25	15				60	X	25	X		2150		25	
96	3460	53	3	45	LTBR	50	40	10				X	X	10	0.5		1350		30	
97	3480	53	3	90	DKBR	90	10					45	10	20	X		3550		60	
98	3500	53	3	125	CROR	65	30	05				30	10	20	X		9000		60	
99	3520	53	3	75	BL	70	20	10				10	20	30	X		3400		60	
52900	3540	53	3	63	BL	70	10	10	10			X	X	25	0.5		1850		50	
57349	3560	53	3	55	BK	50	40	05	05			25	X	210	X		1650		45	
48	3580	53	3	60	BKBR	CR	15	15	70			20	10	10	X		2700		65	
57347	3620	53	3	78	BR	60	25	100	5			25	25	20	X		2400		80	
46	3640	53	3	40	BR	35	40	20	05			20	15	25	0.5		2300		70	
45	3660	53	3	20	BR	50	30	20				15	20	30	X		1050		85	
44	3680	53	3	80	BRGY	70	15	15				10	15	25	0.5		2000		155	
43	3700	53	3		BRLTBR	50	10	35	05			5	5	20	X		1100		80	
42	3720	53	3	40	DKBRWH	10	70	15	05			5	15	30	X		2700		40	
41	3740	53	3	45	DKBR	60	15	20	05			X	10	15	X		950		35	
40	3760	53	3	70	BR	10	70	10	10			X	X	5	X		1300		30	
39	3780	53	3	18	DKBR	45	15	30	10			5	10	20	X		1600		95	
38	3800	53	3	40	BR	CR	20	20	50	10		5	5	15	X		1300		80	
37	3820	53	3	55	LTGR	25	60	15				5	5	15	X		3300		180	
36	3840	53	3	55	BRBK	30	50	10	10			10	30	25	X		5700		80	
35	3860	53	3	90	GY	50	40	10				X	5	25	X		1450		85	
34	3880	53	3	65	BR	40	40	10	10			10	X	15	X		1050		50	
33	3900	53	3	35	BR	45	15	35	05			15	15	10	X		3550		45	
32	3920	53	3	35	CRGY	10	30	60				15	X	25	X		1000		60	
31	3940	53	3	45	LTBR	60	30	10				20	5	20	0.5		1050		50	
30	3960	53	3	60	BR	CR	20	60	20			25	10	15	X		1500		55	
29	3980	53	3	55	BR	LTBR	50	25	25			10	X	10	X		2250		55	

EZ Co of Asia Ltd
Rosebery Tas.

GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON LIMESTONE E. 432/83 Material : SOIL SAMPLE
 Locality : BUBS HILL, E. OF QUEANSTOWN Sample Method : HAND AUGER
 Grid Name : BUBS HILL GRID Sampled By : G. BEESFORD, D. BATTEN
 Nominal Grid Azimuth : Date : 17/12/1984
 Size Fraction Analysed :
 Analysed By : Anala
 Method : A.A.S.

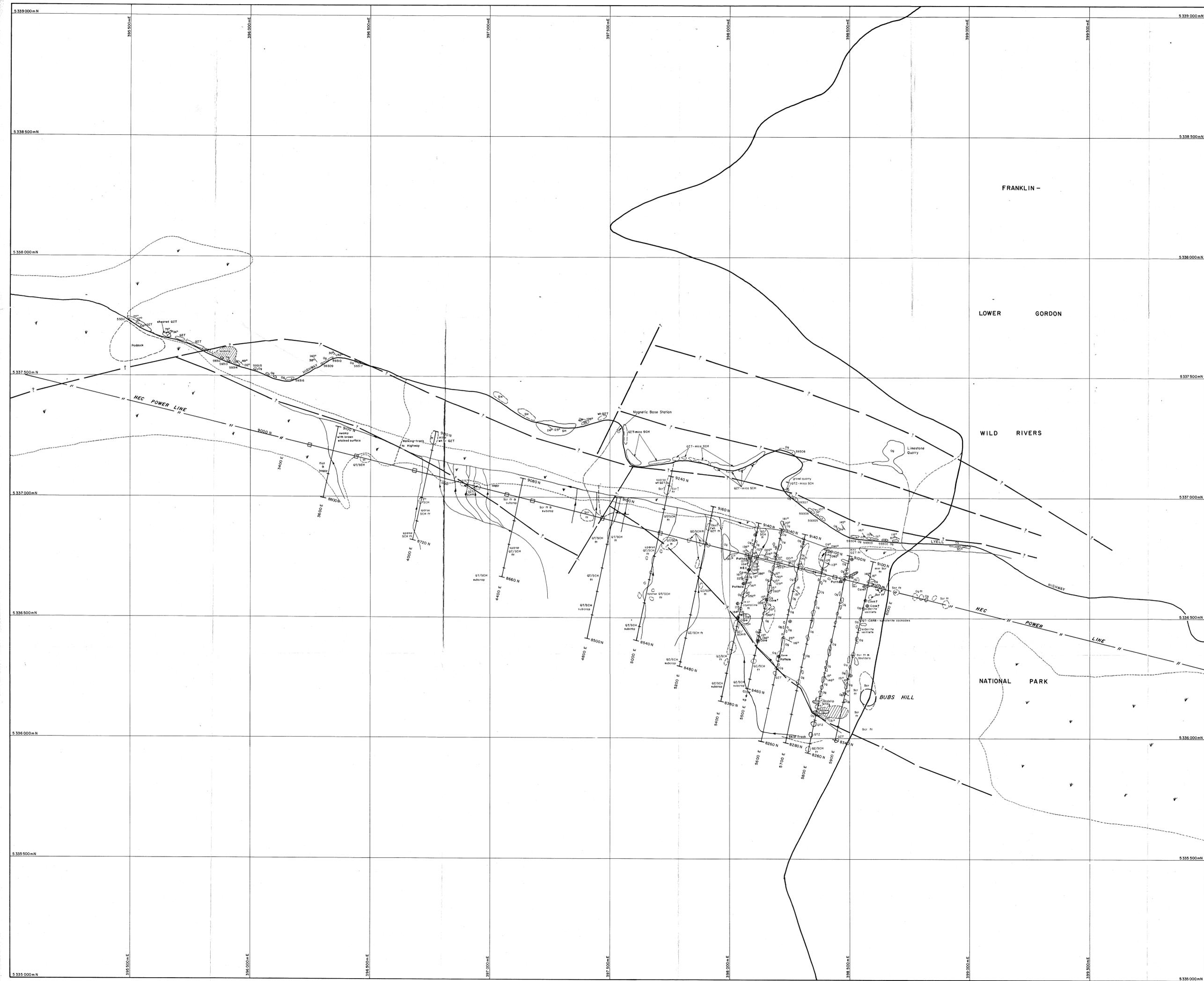
SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No		AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Sand	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	As	Au	Fe	Mn	Ba
	Grid Easting	NORTHING	EASTING																	
57328	4020	53	3	40	CR BR	05	35	60				X	S	10	X		1400		70	
27	4040	53	3	40	BR	15	80	05				X	S	20	X		1150		70	
24	4060	53	3	1.30	CR	01	99					X	S	20	X		2450		80	
25	4080	53	3	20	BR	05	35	60			10	S	15	0.5			1250		65	
24	4100	53	3	1.00	BR	70	20	10			10	S	20	X			2250		75	
23	4120	53	3	20	BR	20	20	60			10	10	15	X			1950		45	
22	4140	53	3	80	DK BR	60	30	10			X	X	15	X			1850		70	
21	4160	53	3	20	BR CR	20	25	50	05		X	S	10	X			850		75	
57320	4180	53	3	35	BR WH	05	25	70			S	X	10	X			1.35		65	
19	4200	53	3	20	GY BR	10	40	50			X	S	20	X			900		35	
18	4220	53	3	20	GY BR WH	10	25	60	05		X	10	20	X			1050		55	
17	4240	53	3	15	DK BR	45	10	40	05		X	15	25	X			1250		25	
16	4260	53	3	20	BR	20	25	50	05		10	15	20	X			4150		20	
15	4280	53	3	20	BR	15	30	50	05		X	X	10	X			1150		20	
14	4300	53	3	15	CR	10	40	50			10	10	15	X			1250		25	
13	4320	53	3	20	DK BR	60	15	20	05		X	S	25	X			1350		25	
12	4340	53	3	35	LT BR	10	30	60			X	X	5	X			650		55	
11	4360	53	3	20	GY BR	25	40	30	05		10	X	10	X			2100		20	
57310	4380	53	3	85	CR	05	75	20			X	X	10	X			750		25	
09	4420	53	3	35	BR WH	15	30	50	05		S	X	20	X			1650		15	
08	4440	53	3	20	GY BR	20	50	30			X	X	20	X			1150		10	
07	4460	53	3	20	BR	10	40	50			X	X	30	X			2950		20	
06	4480	53	3	1.20	RD BR	30	20	50			25	20	40	X			1.95		100	
05	4500	53	3	30	OR	70	25	05			X	20	35	0.5			2.70		45	
04	4520	53	3	40	GY BR	20	40	40			S	X	30	0.5			2050		30	
03	4540	53	3	40	DK BR	50	40	10			X	S	25	X			1750		10	
02	4560	53	3	45	GY BR	10	80	10			15	10	30	X			3150		25	
57301	4580	53	3	20	CR BR BK	20	25	50	05		25	15	30	0.5			1500		25	

EZ Co of Asia Ltd
Rosebery Tas.

GEOCHEMICAL SAMPLE DATA SHEET

Project : GORDON Limestone E.L. 22/83 Material : SOIL SAMPLE
 Locality : BUBS HILL, E. OF QUEENSTOWN Sample Method : HAND AUSSER
 Grid Name : BUBS HILL GRID Sampled By : G. BERESFORD, D. BATTEN
 Nominal Grid Azimuth : Date : 7/12/1983
 Size Fraction Analysed :
 Analysed By : Analabs
 Method : A.A.S.

SAMPLE NUMBER	Sample Location Data				Sample Composition Data					Geology	METAL CONTENT (ppm. unless specified)									
	Grid Line No		AMG CO-ORDINATES		DEPTH	COLOUR	Clay	Silt	Rock Frag.		Organic	Contam.	Cu	Pb	Zn	Ag	Au	Fe	Mn	Ba
	Grid Easting	NORTHING	EASTING																	
52800	4600	53	3	20	CRDKBR	20	25	50	05			10	X	15	X		1250		15	
52799	4620	53	3	20	GYBR	35	20	40	05			10		10	X		2650		30	
98	4640	53	3	1.20	ORBR	95		05		✓		15		65	50	X	10.0		80	
97	4660	53	3	1.00	GYBR	85	05	05	05			5		25	20	X	9200		90	
96	4680	53	3	90	ORBR	70	20	10		✓		30		80	60	X	3.85		440	
95	4700	53	3	60	BR	40	50	10				X		15	10	X	3450		250	
94	4720	53	3	35	DKBR	30	30	40				X		X	5	X	2250		15	
93	4740	53	3	20	DKBRWH	30	50	20				X		X	X	X	1050		15	
92	4760	53	3	20	CRDKBR	30	30	40				5		X	10	X	1600		10	
91	4780	53	3	25	BRCR	10	30	60				X		X	X	X	705		15	
52790	4820	53	3	20	CRBR	20	40	40				X		5	5	X	1350		15	
89	4840	53	3	35	BRWH		25	70	05	✓		X		5	X	X	1050		35	
88	4860	53	3	35	CRBR	10	40	50				5		X	X	X	930		15	
87	4880	53	3	40	LTBR	30	20	50				X		X	X	X	2200		15	
86	4900	53	3	20	BRWH	40	10	50				1150								
85	4920	53	3	40	BR	30	20	50				X		X	X	X	1050		20	
84	4940	53	3	30	BR	20	20	60				5		5	5	X	2250		40	
83	4960	53	3	45	BR	05	30	60	05			5		10	5	X	2350		50	
82	4980	53	3	40	ORBR	50	20	30				5		15	20	X	2.55		45	
52781	5020	53	3	35	ORBR	40	10	50				25		25	45	X	6.15		60	
80	5040	53	3	60	BR	30	35	30	05			5		10	10	X	2450		35	
79	5060	53	3	20	BRBRKCR	15	15	60	10			25		90	15	X	1850		30	
78	5080	53	3	25	CRBR	10	20	70				5		X	10	X	1150		35	
77	5100	53	3	30	CRBR	10	30	60				X		X	5	X	1750		15	
76	5120	53	3	45	BR	20	20	60				X		X	10	X	1100		65	
75	5140	53	3	25	BR	15	25	60				X		X	15	X	1050		20	
74	5160	53	3	30	LTBR	30	20	50				X		X	10	X	1800		35	
52773	5180	53	3		LTBR	40	20	30	10			5		X	10	X	1100		25	



LEGEND

COLOUR
 pk - pink
 br - brown
 bl - blue
 gy - grey
 rd - red
 cr - cream
 lt - light

TEXTURE
 fg - fine grained
 mg - medium grained
 cg - coarse grained
 btd - brecciated
 clvd - cleaved
 shd - shivered
 calc - calcareous
 carb - carbonaceous
 lam - laminated
 xbd - cross bedded
 rtd - thin bedded
 ftd - thick bedded

ROCK TYPE
 SST - sandstone
 LST - limestone
 SH - shale
 SH - shale
 QZT - quartzite
 GRI - gneiss
 PUG - pug

MINERALOGY or ALTERATION
 qz - quartz
 gn - garnet
 lim - limonite
 cb - carbonated

ORDER
 Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils
 *g
 dk gy mg foss SST. or gy calc SH py or py LST s/d

TOPOGRAPHICAL
 cut grid lines
 roads
 tracks
 tramways
 power lines
 rivers, creeks
 swampy area

GEOLGY
 QZT, SCH, GRI, PUG
 PRECAMBRIAN
 Qz
 ORDVICIAN
 Ser
 SILURIAN
 DB, DF
 DEVONIAN
 Qz
 QU
 Alluvium

COLOUR
 wh - white
 bk - black
 gr - green
 yl - yellow
 or - orange
 pl - pale
 dk - dark

TEXTURE
 foss - fossiliferous
 sil - siliceous
 mic - micaceous
 fer - ferruginous
 int - intense
 wk - weak
 v - vary
 pb - pebble
 cb - cobble
 fr - trace
 intbd - inter bedded

ROCK TYPE
 SLT - siltstone
 DLT - dolomite
 CDL - conglomerate
 BSH - black shale
 LIM - limestone
 CLAY - clay

MINERALOGY or ALTERATION
 py - pyrite
 sp - sphalerite
 cp - chalcopyrite
 s/d - silicified

TOPOGRAPHICAL
 joint
 joint - vertical
 overturned
 bedding
 bedding - vertical
 quarries
 shear
 outcrop
 floor

Scale: 1:5000
Survey: I. MAT.
Reference: H.E.C.
Date: 28-3-'84
Drawn: R.J.R.
Checked:

Revised:
Ref. No.
AO-531-0001

369055

5m

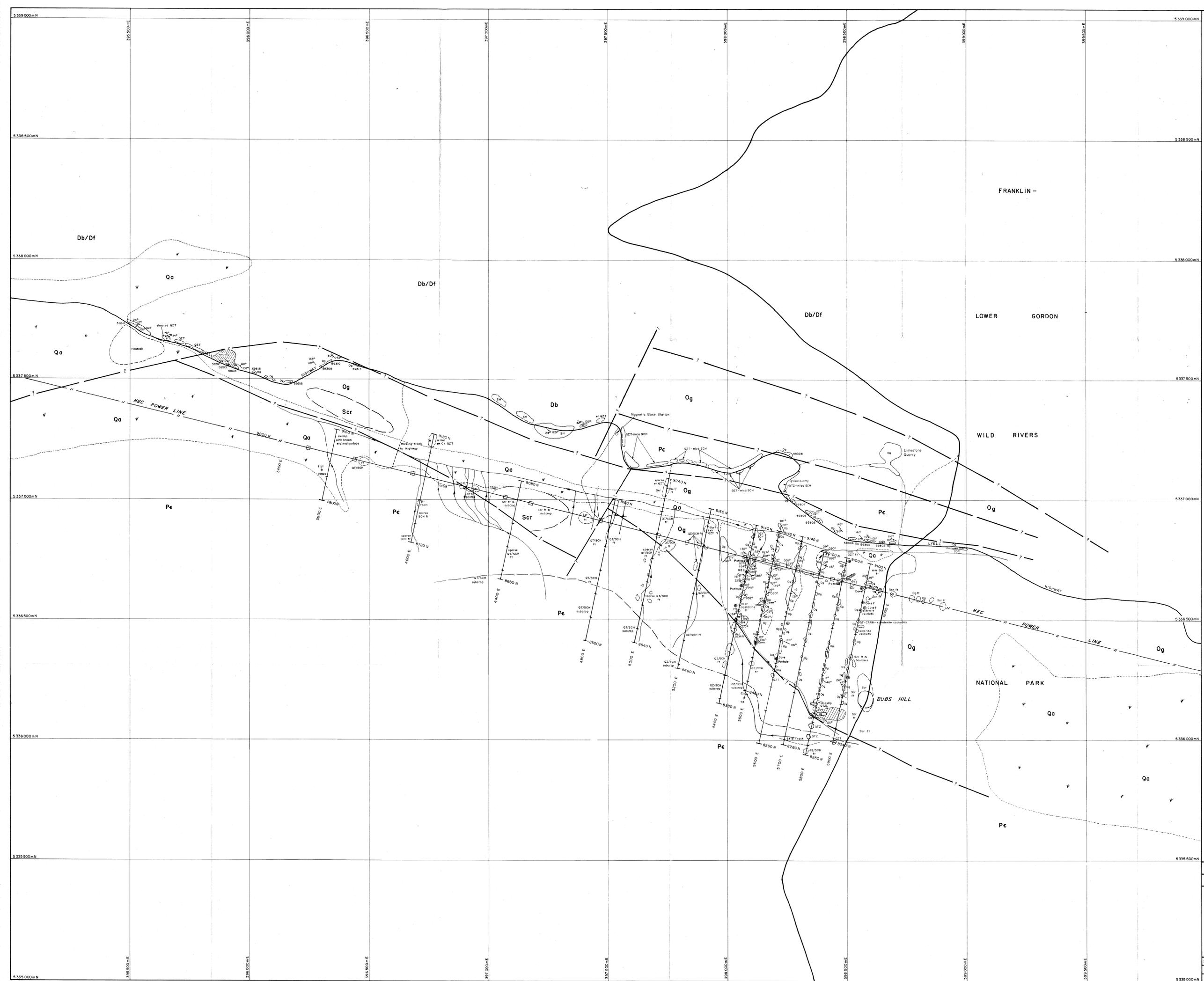
Fig. BH I

ELECTROLYTIC ZINC CO. OF ASIA LTD.
PROJECT: BUBS HILL EL. 32/83 TAS.

GEOLGY 054

(FACT)

84-21-00



LEGEND

COLOUR	wh - white
br - brown	bl - black
bl - blue	gr - green
gy - grey	yl - yellow
rd - red	or - orange
cr - cream	pl - pale
lt - light	dk - dark

TEXTURE

fg - fine grained	foss - fossiliferous
mg - medium grained	sil - siliceous
cg - coarse grained	mic - micaceous
brk - brecciated	far - ferruginous
clvd - cleaved	int - intense
shrd - sharded	wk - weak
colc - calcareous	v - very
carb - carbonaceous	pb - pebbly
lm - laminated	cb - cobble
abd - cross bedded	tr - trace
thbd - thin bedded	inbd - inter bedded
thbd - thick bedded	

ROCK TYPE

SST - sandstone	SLT - siltstone
LST - limestone	DLT - dolomite
BX - breccia	CGL - conglomerate
SH - shale	BSh - black shale
QZT - quartzite	LIM - limestone
GRIT - grit	CLAY - clay
PUG - pug	

MINERALOGY or ALTERATION

qt - quartz	py - pyrite
op - opal	sp - spariferous
lim - limonite	cp - chlorite
cbd - carbonated	sls - silicified

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils

eg
dk gy mg foss SST or gy colc SH py or pl gy LST s'ld

TOPOGRAPHICAL

cut grid lines	joint
roads	joint - vertical
tracks	overturned
footways	bedding
power lines	bedding - vertical
rivers, creeks	quarries
swampy area	shear
	outcrop
	float

GEOLOGY

Qa	QUATERNARY	Quartzites
Og	ORDOVICIAN	Quartzites and Quartz-mica Schists
Og	ORDOVICIAN	Gordon Limestones and Dolomites
Scr	SILURIAN	Crofty Quartzite
Db/Df	DEVONIAN	Bell Shale / Florence Quartzite
Qa	QUATERNARY	Alluvium

369056
5 cm

Fig. BH 2

ELECTROLYTIC ZINC CO. OF ASIA LTD.
PROJECT: BUBS HILL EL. 32/83 ,TAS.

GEOLOGY 055
(INTERP)

Scale: 1:5000 Survey: I. MAT. Revised:
Reference: H.E.C. Date: 30-3-'84 Ref. No.
Drawn: R. J. R. Checked: AO-531-0006



LEGEND

COLOUR

pk - pink	wh - white
br - brown	bk - black
bl - blue	gr - green
gy - grey	yl - yellow
rd - red	or - orange
cr - cream	pl - pale
lt - light	dk - dark

TEXTURE

fg - fine grained	foss - fossiliferous
mg - medium grained	sil - siliceous
cg - coarse grained	mic - micaceous
brd - brecciated	fer - ferruginous
clvd - cleaved	int - intense
shrd - sheared	wk - weak
colc - calcareous	v - very
carb - carbonaceous	pb - pebble
lum - laminated	cb - cobble
abd - cross bedded	tr - trace
fn bd - thin bedded	in bd - inter bedded
tk bd - thick bedded	

ROCK TYPE

SST - sandstone	SLT - siltstone
LST - limestone	GLST - dolomite
BX - breccia	CGL - conglomerate
SH - shale	BSH - block shale
QZT - quartzite	LIM - ironstone
GRT - gneiss	CLAY - clay
PUG - pug	

MINERALOGY or ALTERATION

qt - quartz	py - pyrite
gn - galena	sp - sphalerite
lim - limonite	cp - chalcopyrite
cbd - carbonated	sil - silicified

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils
 e.g.
 dk gy mg foss SST or gy colc SH py or pl gy LST sil

TOPOGRAPHICAL

cut grid lines	joint
roads	joint - vertical
tracks	overturned
tramways	bedding
power lines	bedding - vertical
rivers, creeks	quarries
swampy area	

X = below 5 ppm
 Note - All results are ppm

369057

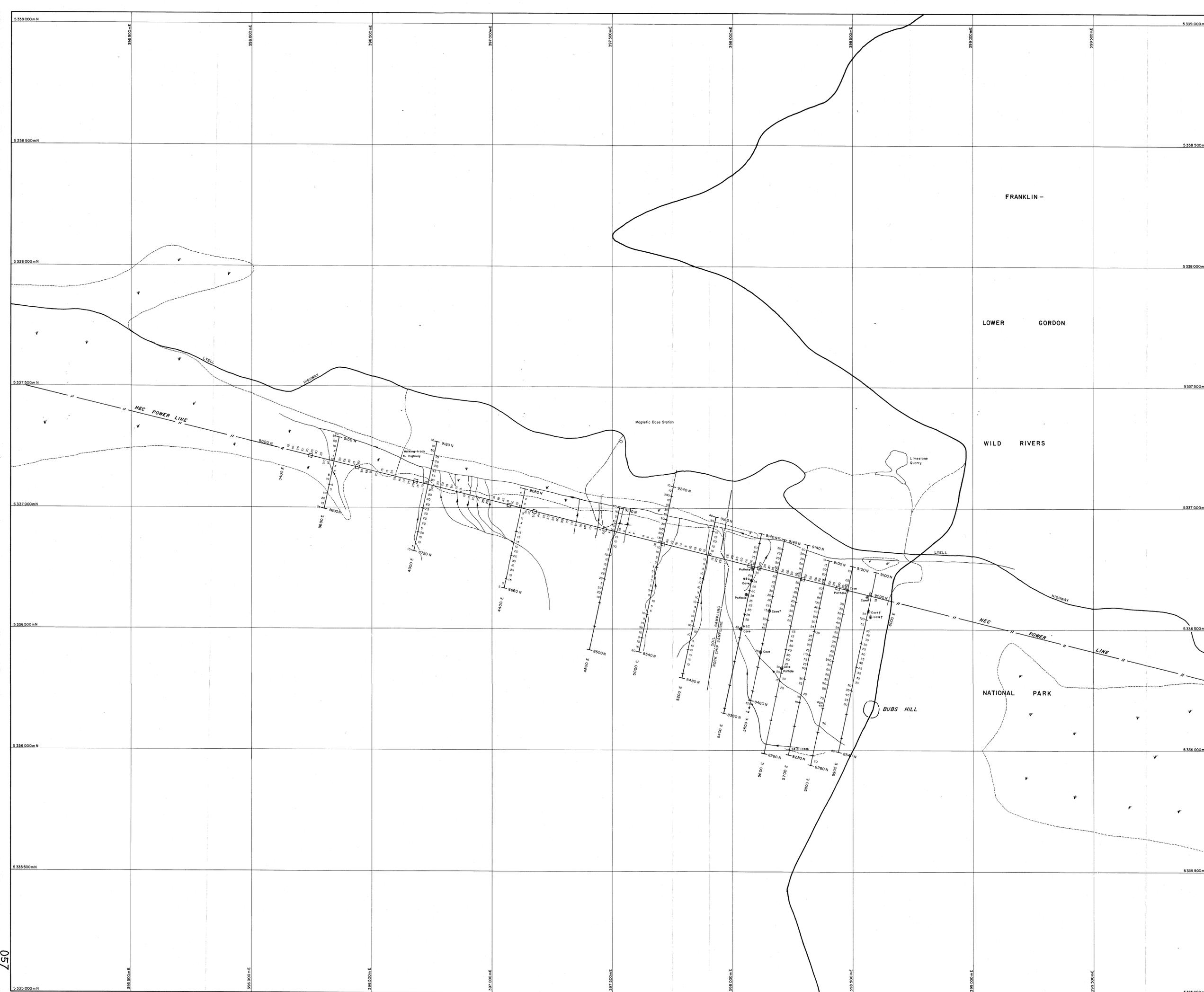
Fig. BH 3

ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: BUBS HILL EL. 32/83 ,TAS.

GEOCHEMISTRY 056

Pb

Scale: 1:5000	Survey: I. MAT.	Revised:
Reference: H.E.C.	Date: 28-3-'84	Ref. No.
Drawn: R. J. R.	Checked: L. W.	AO-531-0004



LEGEND

COLOUR	wh - white
pk - pink	bk - black
bl - blue	gr - green
gy - grey	yl - yellow
rd - red	or - orange
cr - cream	pl - pale
lt - light	dk - dark

TEXTURE	foss - fossiliferous
fg - fine grained	sil - siliceous
mg - medium grained	mic - micaceous
cg - coarse grained	fer - ferruginous
bxd - brecciated	int - intense
clvd - cleaved	sk - weak
shd - sheared	v - very
calc - calcareous	pb - pebble
carb - carbonaceous	cb - cobble
lam - laminated	tr - trace
tbl - thin bedded	mbd - inter bedded
tkbd - thick bedded	

ROCK TYPE	SLT - siltstone
SST - sandstone	DLS - dolomite
LST - limestone	COL - conglomerate
Bx - breccia	BSH - black shale
SH - shale	LIM - limestone
QZT - quartzite	CLAY - clay
GRT - grit	
PUG - pug	

MINERALOGY or ALTERATION	py - pyrite
qt - quartz	sp - spalterite
gn - galena	cp - chalcopyrite
lim - limonite	sls - silicified
carb - carbonated	

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils

1 2

dk gy mg foss SST or gy calc SH py or pl gy LST sil

TOPOGRAPHICAL

cut grid lines	joint
roads	joint - vertical
tracks	overturned
tramways	bedding
power lines	bedding - vertical
rivers, creeks	quarries
swampy area	

X = below 5 ppm

Note - All results are ppm

369058

5m

Fig. BH 4

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: BUBS HILL EL. 32/83, TAS.

GEOCHEMISTRY 057

Zn

Scale: 1:5000	Survey: I.M.A.T.	Revised:
Reference: H.E.C.	Date: 28-3-'84	Ref. No.
Drawn: R.J.R.	Checked: L.W.	A0-531-0003

057



LEGEND

COLOUR	wh - white
pk - pink	bk - black
br - brown	gr - green
bl - blue	yl - yellow
gy - grey	or - orange
rd - red	pl - pale
cr - cream	dk - dark
lt - light	

TEXTURE	fgs - fossiliferous
fg - fine grained	slt - siliceous
mg - medium grained	mlt - micaceous
cg - coarse grained	fer - ferrous
brd - brecciated	int - intense
clvd - cleaved	wk - weak
shrd - sheared	v - very
colc - calcareous	pb - pebble
carb - carbonaceous	cb - cobble
lam - laminated	fr - trace
abd - cross bedded	in bd - inter bedded
tn bd - thin bedded	
rk bd - thick bedded	

ROCK TYPE	SLT - siltstone
SST - sandstone	DLST - dolomite
LST - limestone	CGL - conglomerate
BX - breccia	BSH - black shale
SH - shale	LIM - limestone
QZT - quartzite	CLAY - clay
GRIT - grit	
PUG - pug	

MINERALOGY or ALTERATION

qt - quartz	gy - gyrite
gn - garnet	sp - sphalerite
lm - limonite	ep - chloropyrite
cbd - carbonated	slc - silicified

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils
 * 0
 dk gy mg foss SST or gy calc SH py or play LST slc

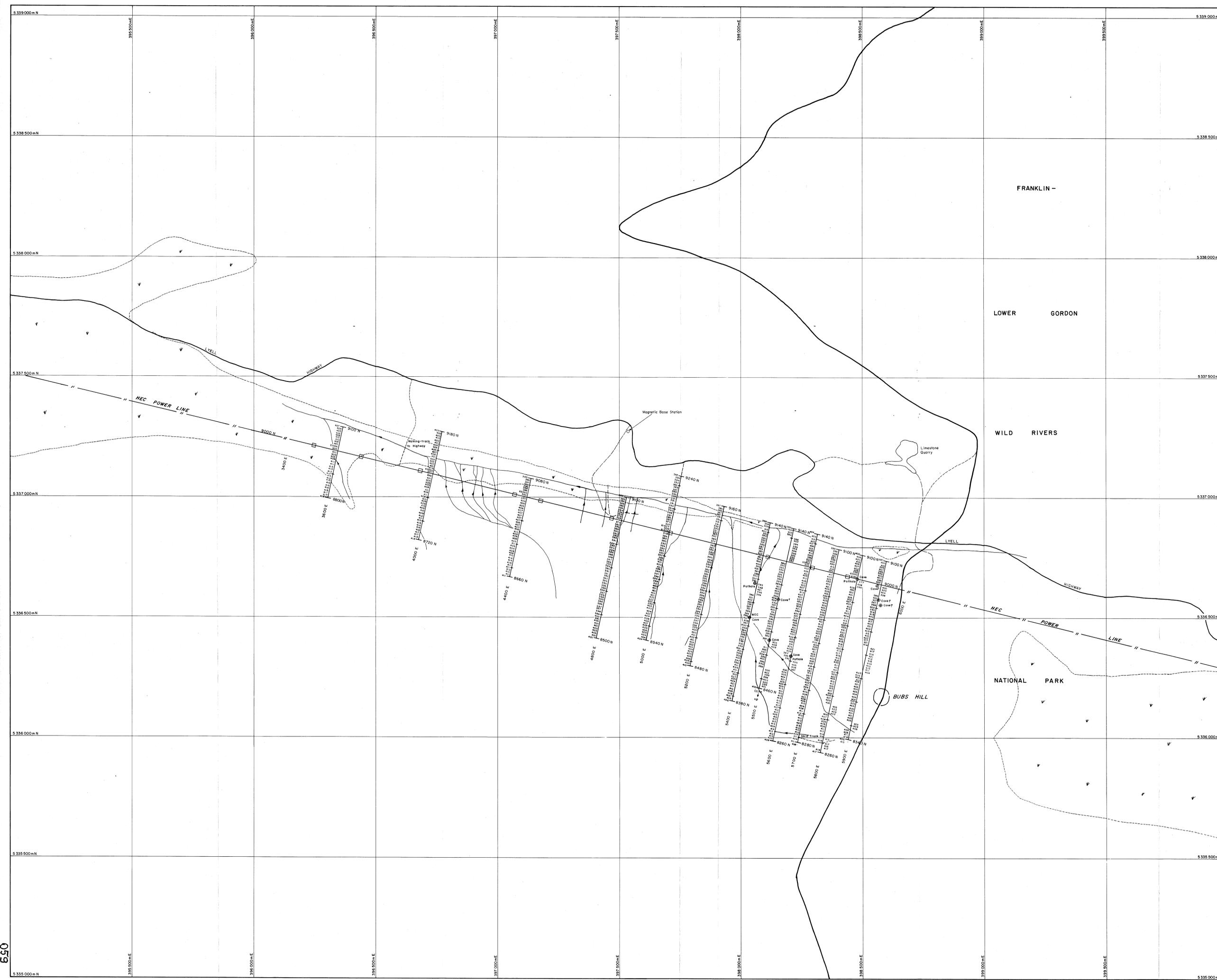
TOPOGRAPHICAL

cut grid lines	joint
roads	joint - vertical
tracks	overturned
frameways	bedding
power lines	bedding - vertical
or	quarries
rivers, creeks	
swampy area	

X = below 5 ppm
 Note - All results are ppm

369059
 5 cm
 Fig. BH 5
ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: BUBS HILL EL. 32/83, TAS.
GEOCHEMISTRY 058
 Ba
 Scale: 1:5000 Survey: I. MAT. Revised:
 Reference: H.E.C. Date: 28-3-'84 Ref. No.
 Drawn: R. J. R. Checked: L. W. AO-531-0005

050



LEGEND

COLOUR	pk - pink	wh - white
br - brown	bk - black	gr - green
bl - blue	gr - gray	yl - yellow
rd - red	or - orange	or - orange
cr - cream	pl - pale	pl - pale
lt - light	dk - dark	dk - dark

TEXTURE	fg - fine grained	foss - fossiliferous
mg - medium grained	slt - siliceous	slt - siliceous
cg - coarse grained	mic - micaceous	mic - micaceous
bd - brecciated	fer - ferruginous	fer - ferruginous
clvd - cleaved	int - intense	int - intense
shrf - sheared	vk - weak	vk - weak
calc - calcareous	v - very	v - very
carb - carbonaceous	pb - pebble	pb - pebble
lam - laminated	cb - cobble	cb - cobble
abd - cross bedded	tr - trace	tr - trace
tl - thin bedded	inbd - inter bedded	inbd - inter bedded
tk - thick bedded		

ROCK TYPE	SST - sandstone	SLT - siltstone
LST - limestone	DLST - dolomite	DLST - dolomite
BR - breccia	CGL - conglomerate	CGL - conglomerate
SH - shale	BSH - black shale	BSH - black shale
QZT - quartzite	LIM - limestone	LIM - limestone
GRIT - grit	CLAY - clay	CLAY - clay
PUG - pug		

MINERALOGY or ALTERATION

qt - quartz	py - pyrite
gn - galena	sp - sphalerite
lim - limonite	cp - chalcopyrite
carb - carbonated	sl - silicified

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils

e.g. dk gy mg foss SST_ or gy calc SH py or pl gy LST sl

TOPOGRAPHICAL

cut grid lines	joint
roads	joint - vertical
tracks	overturned
tramways	bedding
power lines	bedding - vertical
rivers, creeks	quarries
swampy area	

BASE = 62,000 n.T. unless shown otherwise.

369060

Fig. BH 6

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: BUBS HILL EL. 32/83 ,TAS.

GEOPHYSICS 059

GROUND MAGNETICS

Scale: 1 : 5000 Survey: I. MAT. Revised: 2-190

Reference: H.E.C. Date: 28-3-'84 Ref. No.

Drawn: R. J. R. Checked: AO-531-0002

059