

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED

Mineral Resources Division

EXPLORATION LICENCE NO. 4/78 - ZEEHAN

Progress Report on Exploration Activity

14th June, 1983 to 14th January, 1984.

E.Z. Report No. T177

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February, 1984

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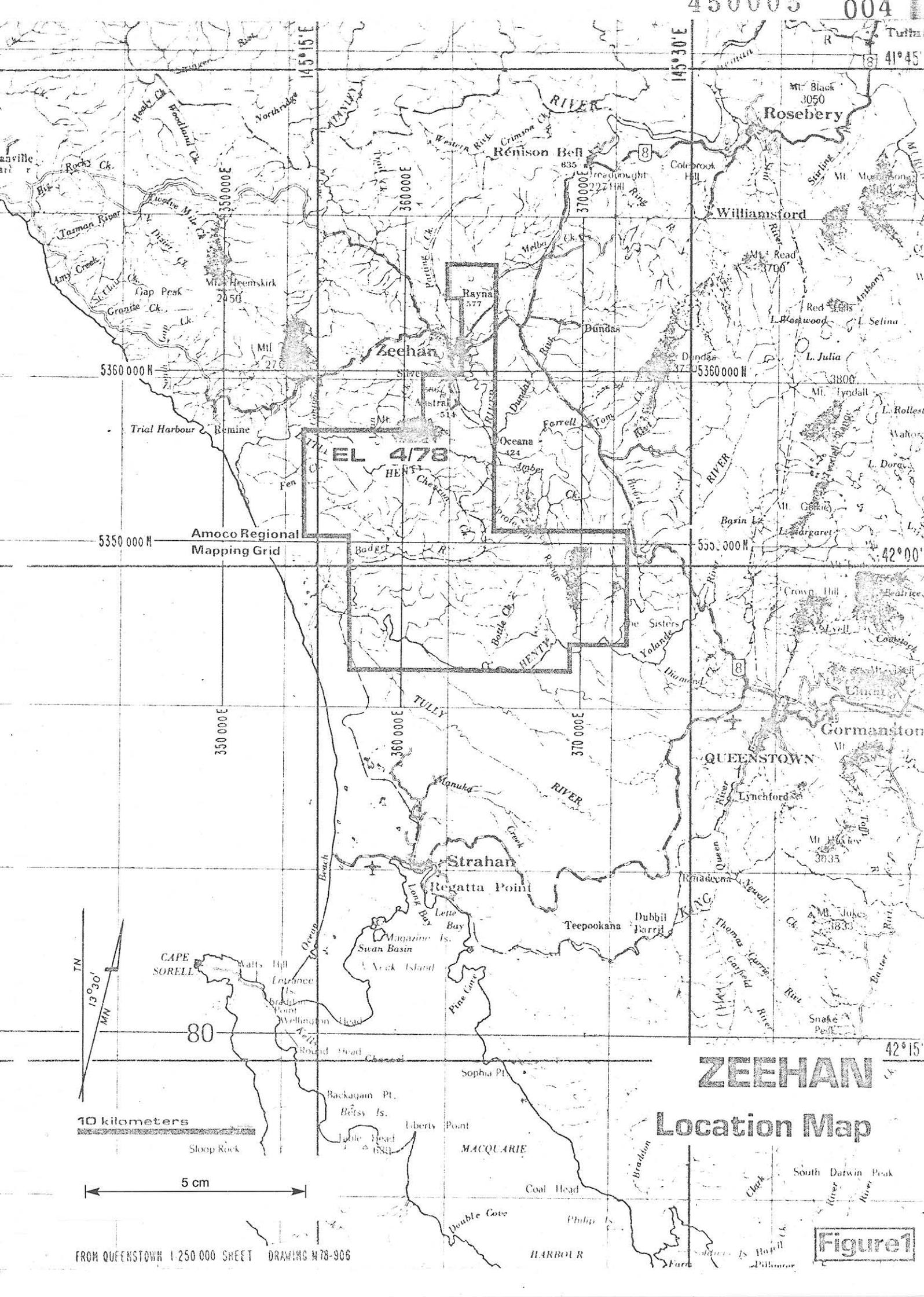
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ZEEHAN

Location Map

Figure 1

1. INTRODUCTION

E.L. 4/78 (Zeehan) of 208km² was granted to Amoco Minerals on 14th June, 1978. E.Z. and Amoco negotiated a joint venture to explore E.L. 4/78, with E.Z. as manager. E.Z. exploration in E.L. 4/78 commenced in October, 1983.

The area covered by the joint venture agreement includes all of E.L. 4/78 excepting exclusion zones around the Oceana and Austral Flux Quarry Mine workings.

2. PREVIOUS EXPLORATION

2.1. Early Exploration and Mining

Most of the major mines in the Zeehan area were operational prior to 1890. The Spray Mine, which was discovered in 1898, is the only notable exception.

There is a direct relationship between the life of each mine and its silver content. The carbonate hosted mines within E.L. 4/78 were relatively poor in silver compared to the deposits in basement rocks, resulting in lower production. A table listing the silver-lead production is enclosed (Table 1).

Prior to the granting of E.L. 4/78, exploration was conducted by Zeehan Explorations (North Broken Hill & Broken Hill South joint venture) between 1946 and 1951. This included geophysical surveys (conducted by the Bureau of Mineral Resources at the Oceana Mine) and diamond drilling. Data examined to date are restricted to a summary of Zeehan Exploration's program and are outlined in Table 2. On the basis of this exploration, the Oceana Mine was re-opened in 1954. Average recovered grades were 11.63% lead and 136 g/t silver. A further sub-economic zone grading 5.5% lead and having a width of approximately 11 metres was outlined north of the mine. The mine was closed in 1960 due to falling metal prices and water inflow (11 million litres/day pumped from the mine).

**TABLE 1 - LEAD-SILVER PRODUCTION FROM MINES WITHIN
AND ADJACENT TO E.L. 4/78**

MINE	AGE	LEAD (Tonnes)	SILVER (Tonnes) ^{0.3?}
SPRAY NUBEENA	Precambrian to Cambrian	450	1,850
MAXIM MONTAGUE WATT & McAULIFFES AUSTRAL	Upper Cambrian to Lower Ordovician	60 117 254 812 +52 zinc	283 42 1,417 935
OCEANA ZEEHAN BELL SOUTH KING	Upper Ordovician to Devonian	15,382 610 5,080 +4 Copper	17,433 780 9,922

TABLE 2 - PREVIOUS EXPLORATION

MINE	YEAR	RESULTS
ZEEHAN BELL	1947	6 inclined holes 100-157 metres in length. Best intersections being 13% Pb, 12.9% Zn, 130 g/t Ag over one metre. No other information.
SOUTH KING	1947	Four boreholes. The best intersection being 0.5 metres 47.5% Pb, 5% Zn and 530 g/t Ag.
AUSTRAL VALLEY	1947 - 1950	3 vertical and inclined holes near the flux quarry. Best assay being 5 metres of 13% Pb in limestone.
OCEANA	1947 - 1950 1954 - 1960	Diamond drilling conducted - data currently under evaluation 128,000 tons ore produced (11% Pb cut-off used) - zone of 5.5% Pb outlined by further diamond drilling. Mine closed due to water inflow and falling lead prices.

A very limited helicopter borne electromagnetic survey (Turair) was conducted by Tenneco about 1970. This was followed-up by reconnaissance I.P. surveys, SP surveys and limited soil sampling.

2.2. Amoco Exploration

Amoco's exploration since 1978 has concentrated on evaluating the Oceana mine area and on regional assessment of Gordon Limestone within E.L. 4/78. A major stream sediment sampling programme in 1982-83 covered most of the E.L. A compilation of all geophysical surveys prior to 1978 is contained in Amoco Report No. 353.

Work undertaken by Amoco is documented in the following reports:-

<u>Report No.</u>	<u>Title</u>	<u>Authors</u>
151	Progress Report June, 1978 to June, 1979 Zeehan Project E.L. 4/78, Tasmania.	P. Jones
179	Progress Report June, 1979 to June, 1980 Zeehan Project E.L. 4/78	B. Roxburgh, P. Jones
249	Progress Report June, 1980 to June, 1981 Zeehan Project E.L. 4/78	P.A. Jones
279	Progress Report July, 1981 to January, 1982 Zeehan E.L. 4/78, Tasmania	P.A. Jones
309	Progress Report January, 1981 to July, 1982 Zeehan E.L. 4/78, Tasmania.	P.A. Jones
347	Progress Report July to December, 1982 Zeehan E.L. 4/78, Tasmania.	P.A. Jones
353	Progress Report January to July, 1983 Zeehan E.L. 4/78, Tasmania.	P.A. Jones

3. PROSPECT LOCATIONS

Figure 2 shows grid and prospect locations within E.L. 4/78 There are eight major grids - six covering areas of Ordovician Limestone and two over Cambrian sediments.

4. EXPLORATION PHILOSOPHY

The primary objective of the Joint Venture has been to explore for large carbonate hosted Pb-Zn deposits within the Ordovician Gordon Limestone. Exploration targets are modelled on the Irish style carbonate hosted deposits. Tin and base metal mineralisation within the Cambrian basement shales and carbonates are secondary exploration targets.

5. EXPLORATION UNDERTAKEN 14TH JUNE, 1983 TO 14TH JANUARY, 1984

5.1. Pyramid

5.1.1. Work Completed

Gridding:

The entire grid has been recut and tagging is in progress. Original pegged lines were heavily overgrown and peg labels were faded.

Bedrock Geochemistry - Jacro Auger:

A total of 56 samples over 5 lines were taken. At all sample locations an attempt was made to reach bedrock. All samples were analysed for Cu, Pb, Zn, Ag and Fe by A.A.S. at Analabs, Burnie. All results, plus results from lines sampled by Amoco but not previously reported, were transferred to data sheets and plotted onto 1:2,500 base plans.

5.1.2. Results Received

Bedrock Geochemistry (See Appendix A - Data Sheets & Figures 3 and 4):

Background values from the Pyramid Grid are normal for the Gordon Limestone. Anomalous results were obtained around the old Pyramid workings (to 2800 ppm Pb and 2100 ppm Zn) and further anomalous values (to 675 ppm Pb and 3450 ppm Zn) are associated with a northwest trending faulted contact between Gordon Limestone and Amber Slate. Calculated means and anomalous values (E.Z. sampling only) are:-

Pb	\bar{M}	~100 ppm; anomalous values	600-2800 ppm
Zn	\bar{M}	~210 ppm; anomalous values	800-3450 ppm

Anomalous values near old tram lines may be due to dump material used as track ballast.

5.1.3. Discussions and Conclusions

Thickening of the limestone to the east of the old Pyramid workings indicates a deepening of the basin. A major N.W. fault, with minor N.E. offsetting faults, may represent a potential feeder system for mineralised fluids into the basin. Continuation of bedrock sampling combined with a costeaning program should provide a number of drill targets.

Anomalous values immediately to the east of the old Pyramid workings may represent a continuation of known Pb/Zn/Siderite veining. Elevated values near the faulted contact between Ordovician Gordon Limestone and Silurian Amber Slate may be from mineralisation within the limestone or veining in the fault.

A gravity anomaly east of the old Pyramid workings will be tested by the costean program.

5.1.4. Recommendations

A continued program of bedrock sampling will better define the extent of anomalous zones. Re-contouring of the ground magnetic data or possible re-surveying of the grid may provide additional sampling targets. Costeaning of major geochemical anomalies will be carried out during the next period. A decision on drill targets will be made following completion of the costean program.

5.2. Myrtle to Rose Valley (Myrtle, Grieves, Baura & Rose Valley Grids)

5.2.1. Work Completed

Existing grids were re-cut and re-tagged. Geological mapping at a scale of 1:5,000 and a ground magnetometer survey were completed. Infill bedrock and rock chip samples were taken and sent in for analysis.

Geology:

Detailed mapping of all grids was completed. Factual data have been plotted on 1:5,000 scale base plans. An interpreted geology has subsequently been produced based on factual data and air-photo interpretation.

Geochemistry - Jacro Auger:

180 bedrock samples were taken and analysed for Cu, Pb, Zn, Ag and Fe by A.A.S. at Analabs, Burnie. All results were transferred to data sheets and plotted onto 1:5,000 base plans.

Geochemistry - Rock:

33 rock chips were taken and analysed for Cu, Pb, Zn, Ag, Fe, Mn by A.A.S. and Ag, As, Ba, Ca, Cu, Mg, Mn, Zn, Sb, S by I.C.P. at Analabs, Burnie.

Sample numbers have been transferred to data sheets and plotted onto the "Geology Fact" 1:5,000 base plans.

Geophysics - Magnetics:

56km of grid lines were surveyed at 25m intervals by the Freeman brothers. Five magnetometers were used, four surveying the grid and the fifth used as a base station. Base station readings were taken every two minutes unless excessive drift indicated a smaller interval was warranted. Data was reduced by the contractor and then transferred to data sheets, plotted onto 1:5,000 base plans, and contoured by E.Z. staff. Detailed interpretations will be attempted during the next period.

Petrology:

Eight rock samples collected during field mapping were submitted to Central Mineralogical Services, Adelaide, for thin section examination and identification.

Gridding:

Existing grid lines were recut, repegged where necessary and retagged.

5km of grid extensions were cut, pegged at 50m slope corrected intervals, and tagged.

5.2.2. Results Received

Geology: (see Figures 5, 6, 7, 8, 9, 10, 11, 12, 25, 26, 27 and 28)

The Myrtle to Rose Valley Grids provide coverage at 100-200m line spacings over a strike length of nearly 9km of the prospective Gordon River Limestone. The grids are designed to cover both the footwall Moina Sandstone and hangingwall Crotty Quartzite contacts. Old workings at Grieves Mine and exploration pits (assaying 410 ppm Pb, 1.15% Zn, 1 ppm Ag) on the Myrtle Grid indicate minor occurrences of Pb/Zn within the limestone. Potential exists for the discovery of major Pb/Zn mineralisation within structurally favourable zones in the limestone.

Stratigraphy:

Ordovician

The geological sequence through all 4 grids is very similar. Footwall to the Gordon Limestone is the Moina Sandstone, a series of orthoquartzites, quartz arenites, grits and quartz pebble conglomerates. The base of the Moina Sandstone is a sequence of light grey to white quartz cobble conglomerates, transitional to the Mt. Zeehan conglomerate, which grade up into light grey quartz pebble conglomerate and grits. Overlying these are a sequence of massive pink and white quartz sandstones characterised by abundant "tubicolar" horizons. The upper Moina sandstone is a series of banded fine white quartzites and pale green micaceous sandstones with minor "tubicolar" beds.

possibly
Moving south from the Myrtle to the Rose Valley Grid, outcropping Moina Sandstone immediately footwall to the Gordon Limestone changes from white quartzite and tubicolar sandstone to quartz conglomerate, indicating an unconformity between Moina Sandstone and Gordon Limestone. Quartz conglomerate in the Rose Valley is overturned, dipping 40-80°E. Facings from graded bedding indicates "stratigraphic up" is to the west as in all other grids.

The Gordon Limestone in the area is a sequence of dark grey to black fine grained variably carbonaceous limestone, silty limestone and minor dolomite with widespread argillaceous and arenaceous beds. Outcrop is very restricted, as the limestone is easily weathered and tends to form low swamp covered valleys. Recent road construction by the D.M.R. has provided most outcrops with additional information coming from logged auger samples. A greeny-grey siltstone and sandstone horizon forms a small ridge centrally

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located in the limestone. Associated algal mats and coral or shell rich horizons indicate shallow water deposition. The ridge is continuous from the Baura Grid to half way through the Myrtle Grid, terminated in the north and south by faults, with possible deepening of the basin across the faults. Oolitic and coral rich limestone at Grieves Mine plus bioturbated limestone/dolomite at Rose Valley are further evidence for a general shallow water environment for the Gordon Limestone, with deeper fault associated sub-basins. Dips of the limestone vary from 50-80°W, mainly at 70°W.

The limestone thickens to the south. It is approximately 600m thick at Myrtle, 600-750m at Grieves and 900m at Baura. The complete thickness at Rose Valley is unknown as the limestone is faulted against Permian sediments to the south. Silicification of the limestone occurs at several locations on the grids but is most concentrated near the locus of 2 major faults in the Rose Valley.

Silurian

Hangingwall to the Gordon Limestone is the Crotty Quartzite. It is a sequence of grey porous coarse quartz sandstone, grits and white quartzite with minor tubicolar horizons. The grit horizons are often rich in brachiopod casts and moulds. Crotty Quartzite occurs on all grids except Rose Valley where it has been faulted off.

Permian

The Professor Plateau at the eastern end of the grids is a Permian peneplain surface. All Permian sediments in the gridded area have been eroded except at Rose Valley. Here down throw to the south of a north west trending fault has preserved dark grey micaceous siltstones belonging to the lower Permian.

Recent

Thick sequences of quartzite and quartz gravels occur as alluvial fans covering much of the footwall Gordon Limestone. The D.M.R. has established gravel quarries on these fans, using the material for construction of the Zeehan to Strahan road. Near line 50,200N on the Myrtle Grid a road cut has exposed a pyritic till unit containing fragments of Owen (Mt. Zeehan) conglomerate, Permian micaceous sandstones, black siltstones and minor brown coal. The till occurs in a small valley on the faulted contact between Moina Sandstone and Crotty Quartzite.

Structure

The alternating resistive-recessive nature of units in the area makes structural interpretation from air photograph quite reliable. Major folding about N.W./S.E. trending axial planes has produced N.W. plunging synclinal and anticlinal structures. Major faulting, also trending N.W./S.E. has produced sinistral offset of up to 900m with moderate silicification and brecciation. Several small scale faults which fan around the major folds show only minor offset of units. The most structurally complex areas, offering potential for development of sub-basins and associated Pb/Zn mineralisation are at the Rose Valley - Baura Grid junctions, the northern half of the Myrtle Grid and near the old Grieves workings.

Geochemistry - Jacro Auger (See Appendix A - Sample Data Sheets and Figures 13, 14, 15, 16, 17, 18, 19 and 20)

Results of bedrock auger sampling are plotted at 1:5,000 scale on Figures 13 to 20. Logging of samples indicates a number of auger holes did not reach bedrock. These non-representative samples have been omitted from the plans. Results previously obtained by Amoco are included.

Lead

Initial interpretation of lead results indicates a lead background of 90 ppm. Anomalous values range from 500-5,000 ppm.

Zinc

Initial interpretation of zinc results indicates a background of 150 ppm. Anomalous values range from 1000 ppm - 2.03%. Significant anomalies will be sampled by costeaning during the next period.

Copper, Silver, Iron

Assay results for these elements are listed in Appendix A. These results have not yet been transferred to plans.

Geochemistry - Rocks (See Appendix B - Rock Sample Data Sheets)

A.A.S. results show 3 of the 33 rock chips have anomalous Pb/Zn values. All three are from the Grieves Grid. Sample No. 59006 (100 ppm Pb, 2.78% Zn) is a green finely crystalline siliceous unit occurring as subcrop near the contact between Moina Sandstone and Gordon Limestone. Samples 59030 and 59031 are from the Grieves workings area. 59030 (4200 ppm Pb, 2.15% Zn) is a limestone breccia with moderate vugs lined with sphalerite. 59031 (220 ppm Pb, 1300 Zn) is a oolitic and coralline limestone with minor sphalerite lined vugs.

Two ironstones from the Myrtle Grid returned extremely low values. They are probably "bog" pisolitic iron formation.

A complete list of assays is enclosed as Appendix B. I.C.P. results are not yet to hand.

Geophysics - Ground Magnetics (See Figures 21, 22, 23 and 24)

Data was contoured at 5nT intervals. A number of magnetic highs (5-20nT above local background) correlate with previously defined geochemical and gravity anomalies. Definite magnetic gradient changes occur across major cross-cutting faults. Anomalous stations obviously related to cultured effects (culverts, auger rods, machinery, etc.) have been noted on the plans and ignored when contouring. Detailed interpretation of results will be presented in the next periods report.

Petrology

Thin section descriptions will be included as an appendix of the next period's report.

5.2.3. Discussions and Conclusions

Encouraging geochemical results have been obtained on all four grids. At this stage, there are four major anomalies to be followed up:

Anomaly 1: Myrtle Grid L 50,600N - 50,400N, 60,300-60,600E.

This anomaly covers an area of approximately 300m² assaying up to 6000 ppm Zn and 1.45% Pb. It occurs on and adjacent to a major N.W. fault. There is an associated 4-5nT magnetic anomaly and 0.5mg gravity anomaly. There is no local outcrop. Geological information will be obtained from the costeaning program.

Anomaly 2: Grieves Grid L 48,100N - 47,800N, 61,100-61,300E

This anomaly covers the old Grieves workings. Bedrock assayed up to 9800 ppm Zn and 940 ppm Pb. Rock chips assayed up to 2.15% Zn and 4200 ppm Pb. Mineralised sedimentary breccias occur as float near the workings. Mineralisation occurs immediately to the west of a major W.N.W. fault. There is no obvious associated gravity or magnetic anomaly. Three costeans are planned to further test the area.

Anomaly 3: Baura Grid L 45,200N-45,400N, 60,900-61,100E

This anomaly covers approximately 200m² assaying up to 4700 ppm Zn and 3.4% Pb. It occurs 200-300m west of a major N.W. fault. There is no obvious magnetic or gravity association. Costeans are planned to provide geological information and delineate the extent of the anomalous geochemistry.

Anomaly 4: Rose Valley Grid Baseline L 44,400N-43,800N

This anomaly covers a large area (approximately 600 x 250m). Pb assays are generally low (100-700 ppm), with Zn assaying up to 3000 ppm. This anomaly occurs near the intersection of two major faults, the Firewood Siding and the Eden Fault. It is flanked to the west and north by intense silicification. There is an associated 0.3-0.5mg gravity high and a weak 1-2nT magnetic ridge. This area will be tested by costeaning and/or drilling.

Results from the ground magnetic survey indicates it is a useful tool in exploring for siderite associated mineralisation provided strict drift control and "tie in" techniques are maintained.

The Jacroauger rig is a very useful reconnaissance sampling tool. Overburden in this area is often more than 3m deep, making hand and power augering very difficult. The general low flat nature of the limestone subcrop allows a high degree of access for the Bombardier mounted Jacro.

Petrographical reports will be received during the next period and should better define the geological environment of breccias and silicified zones which occur in several locations.

The planned Department of Mines stratigraphic hole through the complete Gordon Limestone sequence near L 48,700N on the Myrtle Grid will provide valuable information on the local depositional environment.

5.2.4. Recommendations

Where possible, anomalous geochemical zones should be tested with costeans. As limestone outcrop is very limited on all grids, costeaning will help prove the significance of zones with elevated Pb/Zn geochemistry. Completion of bedrock sampling on L 44,800N and L 45,200N west of the baseline will provide adequate coverage of a large untested area on the Baura Grid. An attempt should be made to test the effectiveness of costeaning on areas where the Jacro has been unable to reach bedrock. Drill hole targets will be established following completion of the costean program.

Ground magnetics and gravity should be completed on L 50,700, 50,800 and 50,900N on the Myrtle Grid.

5.3 North Austral Grid

5.3.1. Work Completed

Work during the period involved drillhole testing of mineralised limestone reported from the old Montague workings. An I.P. survey was completed over several lines near the Montague workings. 500m of tracks were constructed to provide access to the drill sites.

Geophysics - Induced Polarisation

4 lines, totalling 3.0km, were covered by an E.I.P. survey. A dipole-dipole configuration, with a dipole spacing of 50m was read to n=6. The survey was conducted by Scintrex Pty. Ltd.

Drilling

3 holes were proposed to test Pb/Zn mineralisation in limestone reported in the lower levels of the old Montague workings, and the source of an E.M. anomaly within Cambrian sediments adjacent to the Balstrup Fault.

Hole No. 1 - 2800N/1720E

A 140m hole to test mineralised limestone under the old Montague workings and determine the attitude and extent of the limestone.

Hole No. 2 - 2810N/1670E

A 160m hole to test mineralised limestone under the old Montague workings and test an E.M. 37 anomaly just south of the Balstrup Fault.

Hole No. 3 - 2290N/1680E

A 170m hole to test an E.M. 37 anomaly in Cambrian sediments adjacent to the Balstrup Fault.

Proposed Holes 1 and 2 were covered by DDH ZMG 249/249A and Hole 3 was not drilled. DDH ZMG 252 was drilled to test the limestone immediately south of the old Montague workings (2700N/1700E).

Drill Hole Summary:

Hole No.	Azimuth	Dip	Final Depth	Target	Target Depth
ZMG 249	192°	-60°	214m	Mineralised Limestone under Montague workings.	80-140m
ZMG 249A	Wedge from 97.0m of ZMG 249		289m	E.M. 37 anomaly west of Balstrup Fault.	230-280m
ZMG 252	193°	-55°	157m	Mineralised limestone immediately south of Montague workings.	70-120m

Detailed geological logging has been completed on all three holes. Mineralised sections are being split and have been sent in for analysis. Holes 249/249A have been cased with PVC pipe to their total depth. ZMG 252 has been cased to within 38m of the hole bottom.

5.3.2. Results Received

Geophysics - Induced Polarisation

Results are included as Appendix C. A detailed interpretation will be attempted during the next period.

Drilling (See Appendix D for detailed Drill Logs)

ZMG 249 - Summary Drill Log

0	- 9.1m	Non core drilling
9.1	-104.6m	<u>Crotty Quartzite</u> - interbedded grey to green siltstones and quartz rich sandstones to grits. Minor fossil content. Minor quartz veins.
104.6	-158.9m	<u>Gordon Limestone equivalent</u> - series of variably slumped siltstones and minor quartzite beds. Very siliceous, may represent silicified limestone, minor to moderate siderite/dolomite veining up to 1.5m wide with minor to 10% galena + sphalerite.
158.9	-160.3m	<u>Balstrup Fault Zone</u> - Brecciated grey siltstone cut by large quartz-carbonate veins.
160.3	-214.3m	<u>Crimson Creek Formation</u> - Interbedded grey finely laminated siltstones/mudstones and pale green wacke. Moderate fine soft sediment slumping.

Hole stopped at 214.3m due to NQ rod string breaking in hole.

Hole was cemented to 74m and re-drilled. A run-off started at 97m resulting in Hole ZMG 249A.

ZMG 249A - Summary Drill Log

0	- 97.0m	No core, Hole ZMG 249.
97.0	-104.3	<u>Crotty Quartzite</u> - as ZMG 249 9.1-104.6m.
104.3	-156.8m	<u>Gordon Limestone equivalent</u> - as ZMG 249 104.6-158.9m
156.8		Balstrup Fault Zone
156.8	-287.0m	<u>Crimson Creek Formation</u>
	156.8-249.8	interbedded grey finely laminated siltstones to mudstones and pale green to grey wackes. Moderate soft sediment slumping. Minor quartz-carbonate veining.
	249.8-262.3	black graphitic shales, variably sheared. Minor galena and sphalerite in quartz-carbonate veining.
	262.3-287.0	grey very finely laminated to tuffaceous siltstones. Minor quartz carbonate veining.

ZMG 252 - Summary Drill Log

- 0 - 52.1m No core, HW casing advancer used.
- 52.1 - 93.7m Crotty Quartzite - interbedded pale green to pink sandstones/
quartzites/grits and green grey slightly calcareous siltstones.
Minor quartz carbonate veining.
- 93.7 - 157.0m Gordon Limestone
- 93.7-107.3 grey micrite to light grey fine grained limestone.
Moderate thin black carbonaceous beds. Minor oolitic and bio-
turbated zones. Minor calcite veining.
- 107.3-113.3 limestone breccia - possible Balstrup Fault Zone - grey finely
crystalline, slightly carbonaceous limestone, minor coral fragments,
cut by intense siderite, dolomite, quartz veining. Very dense
5-15% finely disseminated sphalerite. Completely dolomitised/
silicified.
- 113.3-143.5 finely interbedded brown micritic limestone and grey finely
crystalline limestone. Abundant fine black carbonaceous laminae,
minor stylolites. 120.6-126.0 grey quartzite.
- 143.5-153.8 interbedded grey finely bedded siltstones, quartz sandstones and
fine tuffaceous wackes. Minor soft sediment micro-faulting
and slumping.
- 153.8-157.0 dark grey to black, variably carbonaceous to graphitic shales.
Minor galena and sphalerite in quartz-siderite veins.

5.3.3. Discussion and Conclusions

DDH ZMG 249/249A failed to intersect significant Pb/Zn mineralisation under the old Montague workings. Texturally the unit described as "Gordon Limestone equivalent" is the same as Gordon Limestone intersected in other drill holes in E.L. 4/78. Complete silicification of an original limestone may explain the non-calcareous nature of the beds. A number of samples will be sent in for petrographical description. Mineralisation intersected in ZMG 252 is finely disseminated within a brecciated, silicified and dolomitised limestone unit. A section of Hole ZMG 252 indicates the mineralised zone may represent the Balstrup Fault Zone. The projection of the Balstrup Fault from surface, based on attitudes from the ZMG 249/249A profile, indicates ZMG 252 would intersect the fault between 110 and 120m. Samples will be sent in for thin section description.

5.3.4. Recommendations

Additional drilling stepped back from ZMG 252 to test the extent and attitude of mineralisation away from an adjacent N.E. fault and N.W. Balstrup Fault.

No further work is recommended on the E.M. 37 anomaly south of the Balstrup Fault. Graphitic shales intersected in ZMG 249A appear to be the source of the anomaly. This will be tested by a down hole E.M. technique. Petrographical descriptions of several samples from ZMG 249/249A and ZMG 252 will improve the understanding of the geological environment encountered.

No further surface geophysical work is recommended.

5.4. Oceana Data

Recent drill logs of Oceana drill holes by Amoco personnel are included as Appendix E.

6. PROPOSED PROGRAMME 14TH JANUARY - 14TH JUNE, 1984

- * Bedrock Geochemistry - Jacro Auger:
Jacro auger sampling of parts of the Myrtle and Rose Valley Grids will continue, to give more complete coverage.
- * Bedrock Geochemistry - Costeaning:
Significant geochemical and geophysical anomalies will be tested by deep trenching.
- * Geophysics - Ground Magnetics:
Line extensions in the Myrtle to Rose Valley Grids will be covered by ground magnetic surveys. Existing data from the Pyramid Grid will be checked, screened and contoured.
- * Geophysics - Down-Hole E.M.:
Drill holes ZMG 249A and 252 will be surveyed by a down-hole E.M. technique.
- * Drilling:
Drill targets will be proposed after results from the costeaning programme are received.

APPENDIX A. - Jacro Auger Samples - Data Sheets

Z Co of A'Asia Ltd
Rosebery Tas

GEOCHEMICAL SAMPLE DATA SHEET

450024

Project :
 Locality : Zeeham
 Grid Name : Myrtle
 Nominal Grid Azimuth :
 Material :
 Sample Method :
 Sampled By :
 Date :
 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	Sand	Rock Frag.		Organic	Content	Cu	Pb	Zn	As	Au	Fe	Mn
	Grid Easting	NORTHING	EASTING															
57091	53	3	1	20	20	0.5	0.5				15	20	25			20	0	
57092	53	3	1	50	20	1.0	0.5				15	15	50			20	0	
57093	53	3	2	20	20	1.0	0.5				10	15	20			20	0	
57094	53	3	2	10	20	0.5	0.5				10	30	25			20	0	
57095	53	3	2	20	20	1.5	0.5				10	15	20			20	0	
57096	53	3	2	60	20	1.0	0.5				20	60	55			20	0	
57097	53	3	3	20	20	2.5	0.5				15	30	100			10	0	
57098	53	3	6	30	20	0.5	1.0				20	40	25			10	0	
57099	53	3	7	20	20	2.5	0.5				10	30	25			10	0	
57100	53	3	3	40	20	2.0	1.0				15	20	20			10	0	
57101	53	3	5	60	20	0.5	2.0				30	10	25			10	0	
57102	53	3	4	30	20	1.0					15	20	55	0		10	0	
57103	53	3	6	20	20	0.5	2.0				15	25	200	0		20	0	
57104	53	3	6	20	20	1.0					20	30	110			10	0	
57105	53	3	6	30	20	0.5					20	30	110			10	0	
57106	53	3	6	30	20	0.5					20	30	110			10	0	
57107	53	3	6	30	20	0.5					20	30	110			10	0	
57108	53	3	6	30	20	0.5					20	30	110			10	0	
57109	53	3	6	30	20	0.5					20	30	110			10	0	
57110	53	3	6	30	20	0.5					20	30	110			10	0	
57111	53	3	6	30	20	0.5					20	30	110			10	0	
57112	53	3	6	30	20	0.5					20	30	110			10	0	
57113	53	3	6	30	20	0.5					20	30	110			10	0	
57114	53	3	6	30	20	0.5					20	30	110			10	0	
57115	53	3	6	30	20	0.5					20	30	110			10	0	
57116	53	3	6	30	20	0.5					20	30	110			10	0	
57117	53	3	6	30	20	0.5					20	30	110			10	0	
57118	53	3	6	30	20	0.5					20	30	110			10	0	
57119	53	3	6	30	20	0.5					20	30	110			10	0	
57120	53	3	6	30	20	0.5					20	30	110			10	0	
57121	53	3	6	30	20	0.5					20	30	110			10	0	
57122	53	3	6	30	20	0.5					20	30	110			10	0	
57123	53	3	6	30	20	0.5					20	30	110			10	0	
57124	53	3	6	30	20	0.5					20	30	110			10	0	
57125	53	3	6	30	20	0.5					20	30	110			10	0	
57126	53	3	6	30	20	0.5					20	30	110			10	0	
57127	53	3	6	30	20	0.5					20	30	110			10	0	
57128	53	3	6	30	20	0.5					20	30	110			10	0	
57129	53	3	6	30	20	0.5					20	30	110			10	0	
57130	53	3	6	30	20	0.5					20	30	110			10	0	
57131	53	3	6	30	20	0.5					20	30	110			10	0	
57132	53	3	6	30	20	0.5					20	30	110			10	0	
57133	53	3	6	30	20	0.5					20	30	110			10	0	
57134	53	3	6	30	20	0.5					20	30	110			10	0	
57135	53	3	6	30	20	0.5					20	30	110			10	0	
57136	53	3	6	30	20	0.5					20	30	110			10	0	
57137	53	3	6	30	20	0.5					20	30	110			10	0	
57138	53	3	6	30	20	0.5					20	30	110			10	0	
57139	53	3	6	30	20	0.5					20	30	110			10	0	
57140	53	3	6	30	20	0.5					20	30	110			10	0	
57141	53	3	6	30	20	0.5					20	30	110			10	0	
57142	53	3	6	30	20	0.5					20	30	110			10	0	
57143	53	3	6	30	20	0.5					20	30	110			10	0	
57144	53	3	6	30	20	0.5					20	30	110			10	0	
57145	53	3	6	30	20	0.5					20	30	110			10	0	
57146	53	3	6	30	20	0.5					20	30	110			10	0	
57147	53	3	6	30	20	0.5					20	30	110			10	0	
57148	53	3	6	30	20	0.5					20	30	110			10	0	
57149	53	3	6	30	20	0.5					20	30	110			10	0	
57150	53	3	6	30	20	0.5					20	30	110			10	0	
57151	53	3	6	30	20	0.5					20	30	110			10	0	
57152	53	3	6	30	20	0.5					20	30	110			10	0	
57153	53	3	6	30	20	0.5					20	30	110			10	0	
57154	53	3	6	30	20	0.5					20	30	110			10	0	
57155	53	3	6	30	20	0.5					20	30	110			10	0	
57156	53	3	6	30	20	0.5					20	30	110			10	0	
57157	53	3	6	30	20	0.5					20	30	110			10	0	
57158	53	3	6	30	20	0.5					20	30	110			10	0	
57159	53	3	6	30	20	0.5					20	30	110			10	0	
57160	53	3	6	30	20	0.5					20	30	110			10	0	
57161	53	3	6	30	20	0.5					20	30	110			10	0	
57162	53	3	6	30	20	0.5					20	30	110			10	0	
57163	53	3	6	30	20	0.5					20	30	110			10	0	
57164	53	3	6	30	20	0.5					20	30	110			10	0	
57165	53	3	6	30	20	0.5					20	30	110			10	0	
57166	53	3	6	30	20	0.5					20	30	110			10	0	
57167	53	3	6	30	20	0.5					20	30	110			10	0	
57168	53	3	6	30	20	0.5					20	30	110			10	0	
57169	53	3	6	30	20	0.5					20	30	110			10	0	
57170	53	3	6	30	20	0.5					20	30	110			10	0	
57171	53	3	6	30	20	0.5					20	30	110			10	0	
57172	53	3	6	30	20	0.5					20	30	110			10	0	
57173	53	3	6	30	20	0.5					20	30	110			10	0	
57174	53	3	6	30	20	0.5					20	30	110			10	0	
57175	53	3	6	30	20	0.5					20	30	110			10	0	
57176	53	3	6	30	20	0.5					20	30	110			10	0	
57177	53	3	6	30	20	0.5					20	30	110			10	0	
57178	53	3	6	30	20	0.5					20	30	110			10	0	
57179	53	3	6	30	20	0.5					20	30	110			10	0	
57180	53	3	6	30	20	0.5					20	30	110			10	0	
57181	53	3	6	30	20	0.5					20	30	110			10	0	
57182	53	3	6	30	20	0.5					20	30	110			10	0	
57183	53	3	6	30	20	0.5					20	30	110			10	0	
57184	53	3	6	30	20	0.5					20	30	110			10	0	
57185	53	3	6	30	20	0.5					20	30	110			10	0	
57186	53	3	6	30	20	0.5					20	30	110			10	0	
57187	53	3	6	30	20	0.5					20	30	110			10	0	
57188	53	3	6	30	20	0.5					20	30	110			10	0	
57189	53	3	6	30	20	0.5					20	30	110			10	0	
57190	53	3	6	30	20	0.5					20	30	110			10	0	
57191	53	3	6	30	20	0.5					20	30	110			10	0	
57192	53	3	6	30	20	0.5					20	30	110</					

EZ Co of A Asia Ltd
Rosebery Tas

GEOCHEMICAL SAMPLE DATA SHEET

450025

Project : Zeehan EL 4/78 Material :
 Locality : Zeehan Sample Method : Jaura Auger
 Grid Name : Myrtle Sampled By :
 Nominal Grid Azimuth : Date : Oct 83
 Size Fraction Analysed :
 Analysed By : Amalabs
 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	Cu	Pb	Rock Frag.	Organic	Contam		Cu	Pb	Zn	As	Au	Fe	Mn
	Grid Easting	NORTHING	EASTING															
	53		3															
	53		3															
	53		3															
	53		3															
	53		3															
57018	53		3	3.25	GRY BK	100					10	x	20	x		3850		
19	53		3	4.35	GRY BK	90.20					10	80	250	x		2100		
20	53		3	6.35	GRY BK	90.10					15	15	240	x		1.95		
21	53		3	2.15	GRY BK	100					10	40	65	x		5450		
22	53		3	1.15	BRN BK						15	240	120	x		1.70		
23	53		3	5.65	GRY BK	96.05					20	50	125	x		1.50		
24	53		3	3.35	GRY BK	90.10					20	165	120	x		1.35		
25	53		3	4.75	LT GRY BK	95.05					60	95	1500	x		1.10		
26	53		3	4.85	GRY BK	90.05.05					x	x	15	x		2250		
27	53		3	6.55	GRY BK	76.05					5	5	35	x		3850		
28	53		3	1.45	GRY BK	75.05					5	5	15	x		3700		
29	53		3	1.25	GRY BK	90.10					5	x	25	x		3500		
30	53		3	2.25	GRY BK	95.05					10	10	25	x		1.20		
31	53		3	1.75	GRY BK	90.05.05					20	50	110	x		1.20		
32	53		3															
33	53		3	4.95	GRY BK	50					5	20	75	x		4050		
34	53		3	2.35	GRY BK	100					15	25	155	x		2.40		
35	53		3	4.75	GRY BK	100					5	25	100	x		6800		
36	53		3	1.85	GRY BK	95.05					10	10	80	x		2350		
37	53		3	1.05	GRY BK	4.25.05					5	15	105	x		1250		
38	53		3	1.45	GRY BK	96.05.05					20	50	100	x		2.15		
39	53		3	6.35	GRY BK	100					15	30	100	x		2.20		
40	53		3	2.45	LT GRY BK	95.10.10					20	130	1300	x		1.40		

EZ Co of Asia Ltd
Rosebery Tas

GEOCHEMICAL SAMPLE DATA SHEET

450031

Project : EL 4/79
 Locality : Zeehan
 Grid Name : Bayra
 Nominal Grid Azimuth :

Material :
 Sample Method : Juice Puger
 Sampled By :
 Date : Nov 1982

Size Fraction Analysed :
 Analysed By : Amalab
 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 Frags		Organic	Contam	Cu	Pb	Zn	As	Au	Fe	Mn	Sn
	Grid Easting	NORTHING	EASTING																
1	53	3	00	00	DK	100						22	60	21				44	
2	53	3	00	00	DK	100						75	200	21				6	
3	53	3	00	00	DK	100						75	440	21				6	
4	53	3	70	00	DK	100	10					30	50	21				6	
5	53	3	00	00	DK	100						10	120	21				6	
6	53	3	00	00	DK	100	20	20				10	32	21				4	
7	53	3	00	00	DK	100						16	420	17.50				44	
8	53	3	00	00	PL	100	10					30	100	55				44	
9	53	3	00	00	PL	100						22	140	44				4	

EZ Co of Asia Ltd
Rosebery Tas

GEOCHEMICAL SAMPLE DATA SHEET

450034

Project : EL 4178
 Locality : Zeehan
 Grid Name : Baura
 Nominal Grid Azimuth :
 Material :
 Sample Method : Lava Auger
 Sampled By :
 Date : Nov 1982
 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	Ag	Au	Fe	Mn	Sn
	Grid Easting	NORTHING	EASTING																
1	3			1.50			100				10	4	12	1				24	
2	3			2.00 WH			100				10	24	6	21				24	
3	3			2.00 PLGY							12	22	85	1				24	
4	3			1.50			50	50			8	9	6	21				24	
5	3			5.00 DK			50	50			14	270	1000	21				10	
6	3			1.40 WH			80	20			8	6	12	1				24	
7	3			5.00 GY			100				10	65	1000	1				24	
8	3			1.40 BR			80	20			6	8	26	21				24	
9	3			3.80							8	12	24	21				24	
10	3			3.50 GY			90	10			6	65	100	21				24	
11	3			2.00 GY			90	10			8	28	100	21				24	
12	3			2.00 PLGY			90	10			6	10	4	21				24	
13	3										4	4	2	21				4	

Z Co of Asia Ltd
Rosebery Tas

GEOCHEMICAL SAMPLE DATA SHEET

450045

Project : EL 4/78
 Locality : ZEEHAN
 Grid Name : PYRAMID
 Nominal Grid Azimuth :
 Material :
 Sample Method : JACO AUGER
 Sampled By :
 Date : Nov 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	P&K	Rock Frag.	Organic		Contam	Cu	Pb	Zn	As	Au	Fe	Mn
	7000N	NORTHING	EASTING															
		53	3															
		53	3															
		53	3															
		53	3															
	900	53	3															
		53	3															
		53	3															
		53	3															
	1000	53	3															
		53	3															
		53	3															
		53	3															
		53	3															
	1100	53	3															
		53	3															
		53	3															
		53	3															
	1200	53	3															
		53	3															
		53	3															
57209	1275	53	3	6.50	PLPR	94	100				20	115	300	1.0		1.20		
07	1300	53	3	6.30	PLBR	75	25				45	85	370	1.0		4.70		
04	1325	53	3	6.30	G4RK	95	05				20	45	205	0.5		5.15		
		53	3															
05	1375	53	3	6.30	G4RK	80	20				25	85	490	0.5		3.25		
04	1400	53	3	6.20	G4RK	80	20				10	10	55	1.0		1.80		
05	1425	53	3	6.30	G4RK	90	10				15	40	45	0.5		0.90		
		53	3															
02	1425	53	3	6.30	G4RK	60					20	25	65	1.0		0.95		
2011	1450	53	3	6.30	G4B RK	90	10				20	175	705	0.5		2.00		
57200	1475	53	3	6.10	G4	60					10	110	1050	1.0		2.90		

APPENDIX B. - Rock Samples - Data Sheets

450051

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas. **ROCK SAMPLE LEDGER** PROJECT: E.L. 4178 ZINCHEM LOCALITY: MYRTLE - ROSE VALLEY GRIDS COLLECTED BY: G. KARY DATE: OCT/NOV. 83

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)	Pb	Zn	Ag	Cu	Fe	Mn	Ba	Mg		
59001	50500N	60890E	R/C	Grey, fine grained, well bedded	SILTSTONE							80	490	<0.5	10	5.25%	1.50%	400	2800
59002	50400N	60830E	R/C	Ferrous concretions, minor pisolites	IRONSTONE							35	95	<0.5	10	3.95%	2100	270	2000
59003	50000N	60225E	R/C	Pisolitic, abundant quartz / quartzite pebbles cemented into pisolitic matrix. Quite dense	IRONSTONE							5	40	0.5	5	33.0%	1250	40	300
59004	50225N	60800E	R/C	Brown/Grey clay, up to 5% PY. Minor quartz, cluster Slickensides at 100°/65° S	CLAY							160	35	<0.5	30	2.15%	35	120	2700
59005	49100N	60396E	R/C	Black sandy clay, 1% PY, minor calcite veining	SANDY CLAY							90	205	<0.5	10	3.900	80	310	1100
59006	48500N	61100E	R/C	Limonite envelopes around siliceous grey to green finely crystalline cores. Possible exotic material	?							100	2.75%	1.0	15	41.5%	1.70%	60	500
59007	45600N	60825E	R/C	Pisolitic near small pits	IRONSTONE							5	145	0.5	5	43.0%	780	140	500
59008	45435N	60725E	R/C	Black, silty, minor shell fossils	CLAY							20	825	<0.5	25	1.45%	105	280	8500
59009	43300N	60950E	R/C	Grey, brown deformed, bedded turbations, minor brown deformed horizons	LIMESTONE							15	75	<0.5	5	73.50	195	220	370%
59010	44500N	60825E	R/C	Grey, fine grained, intense calcite veining	LIMESTONE							15	125	<0.5	5	3100	135	300	9200

051

450052

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

ROCK SAMPLE LEDGER

PROJECT: E.L. 4178 ZEEHAN LOCALITY: MYRTLE - ROBE VALLEY
COLLECTED BY: G. KARY
GRID
DATE: NOV. 83

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)	Pb	Zn	Ag	Cu	Fe	Mn	Ba	Mg
59011	44830N	60700E	R/C	Black/Dark Grey, minor PY	CLAY (ARG)				95	40	<0.5	15	1.45%	30	160	3100
59012	45730N	60820E	R/C	Grey, fine grained, ferruginous, minor fossils	SANDSTONE				20	25	<0.5	5	8450	25	210	4400
59013	46125N	60760E	R/C	Black, massive, carbonaceous	CLAY				280	250	1.0	50	1.25%	110	140	3900
59014	47400N	60790E	R/C	Dark green, laminated, up to 80% fossils.	SILTSTONE				40	50	<0.5	30	7600	20	210	4200
59015	45520N	60760E	R/C	Black, massive, minor quartz crystals	CLAY				345	90	<0.5	20	1.65%	20	180	3600
59016	45520N	60755E	R/C	Light grey, finely laminated, minor concretions	SANDSTONE				105	15	<0.5	<5	2400	10	220	4200
59017	49000N	60690E	R/C	Dark grey, fine grained, minor calcite trace PY	LIMESTONE				15	45	<0.5	<5	3900	120	240	5.10%
59018	49180N	60360E	R/C	Dark grey, massive, minor calcite veins	SILTY LIMESTONE				20	55	<0.5	5	3.25%	440	200	6.20%
59019	49230N	60350E	R/C	Grey, fine grained, dense, calcite veins. Minor dark grey dolomite	LIMESTONE				110	95	<0.5	5	3300	55	190	1.60%
59020	49530N	60275E	R/C	Grey, silicified, minor breccia, minor algal mats	LIMESTONE				5	15	<0.5	5	4100	85	40	500
59021	49530N	60275E	R/C	Dark grey, black, fine grained, minor Dolomite 1% PY	LIMESTONE				15	30	<0.5	10	8400	200	280	2.70%

450053

Electrolytic Zinc Co. of A'asia Ltd. Rosebery, Tas.			ROCK SAMPLE LEDGER				PROJECT: E.L. 4178 ZEEHAW		LOCALITY: MYRTLE - ROSE VALLEY									
							COLLECTED BY: G. KARY		GRID DATE: NOVEMBER 83									
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)	Pb	Zn	Ag	Cu	Fe	Mn	Ba	Hg	
59022	49770N	60240E	R/C	Black, very fine grained, minor fossils, calcite veined, 1% PY	LIMESTONE	T					15	25	<0.5	5	3050	75	330	150%
59023	49775N	60275E	R/C	Black, slightly fissile	CLAY						105	20	<0.5	25	320%	10	240	7500
59024	50020N	60230E	R/C	Black, grey,	CLAY						50	50	0.5	40	4100	<5	220	3800
59025	50255N	60300E	R/C	Light grey, intensely cleaved, minor sericite, micaceous ferruginous quartz, veined	SILTSTONE						50	20	<0.5	20	1.25%	40	220	1300
59026	49630N	60250E	R/C	Black, minor grey fine sandstone. Highly fractured, minor silicification, minor quartz veining	SILTSTONE						5	20	<0.5	5	1150	20	50	1200
59027	50230N	60900E	R/C	Black sandy framework, up to 20% PY, conglomerate and micaceous boulders. Minor brown coal	TILL/BRECCIA						285	130	1.0	25	1.60%	15	90	1000
59028	50225N	60950E	R/C	As #59027							145	40	1.0	20	4.75%	30	70	1100
59029	50210N	61040E	R/C	Black, minor sandy lenses.	CLAY						40	15	<0.5	25	9150	10	120	1800
59030	43920N	61320E	R/C	Mass flow, cream/mud matrix. Recrystallized limestone and dolomite fragments. Minor SL filling open spaces	BRECCIA						4700	2.15%	3.5	15	2.45%	1100	190	9.70%
59031	43920N	61340E	R/C	Black, calcitic, minor coral fragments. Minor GN/SL filling open spaces	LIMESTONE						220	1300	0.5	<5	3500	280	170	12.0%

APPENDIX C. - Induced Polarisation - Pseudo-Sections



SCINTREX PTY. LTD.

INDUCED POLARIZATION AND RESISTIVITY SURVEY
DIPOLE - DIPOLE ARRAY

DATE 8 - 12 - 83

PLOTTED BY P. LIST

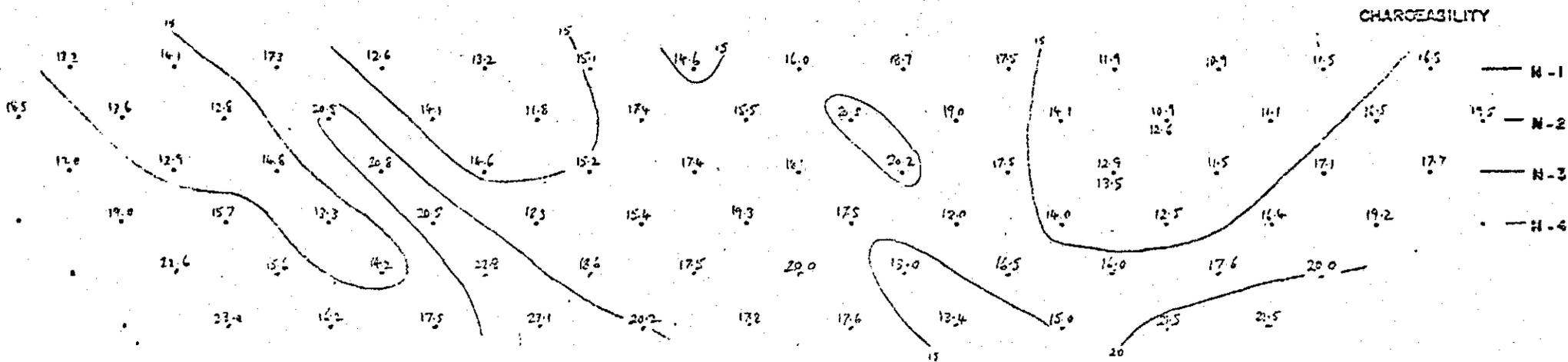
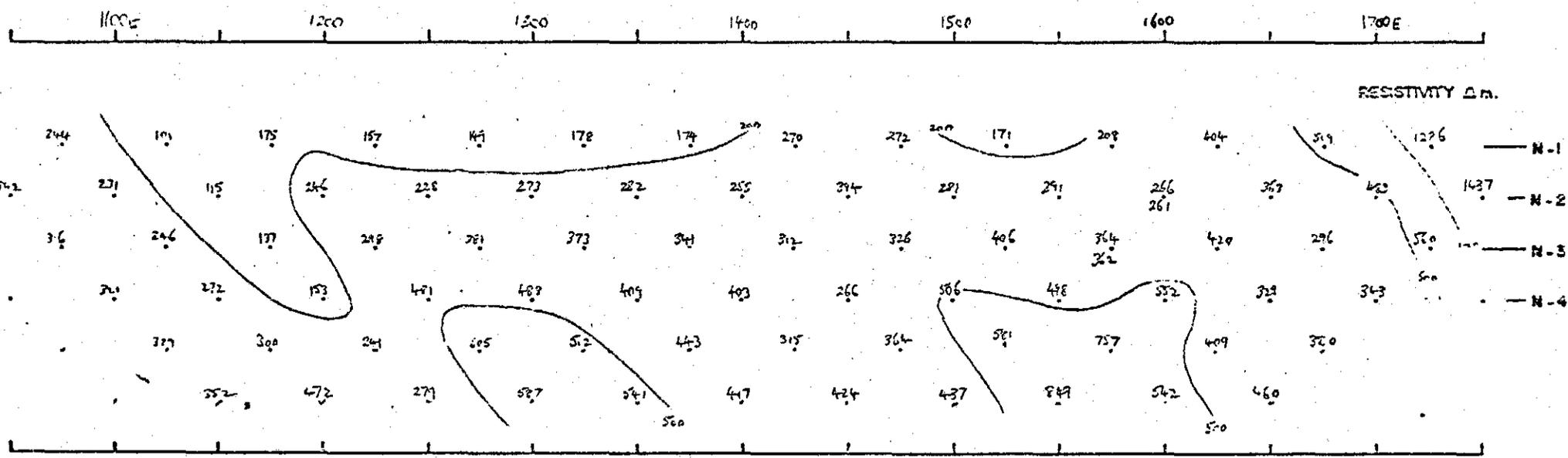
PULSE 2 sec Rx. 304126

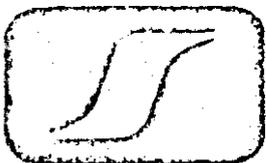
DIPOLE SPACING 50m

LINE No. 2600N

PROSPECT NORTH AUSTRAL

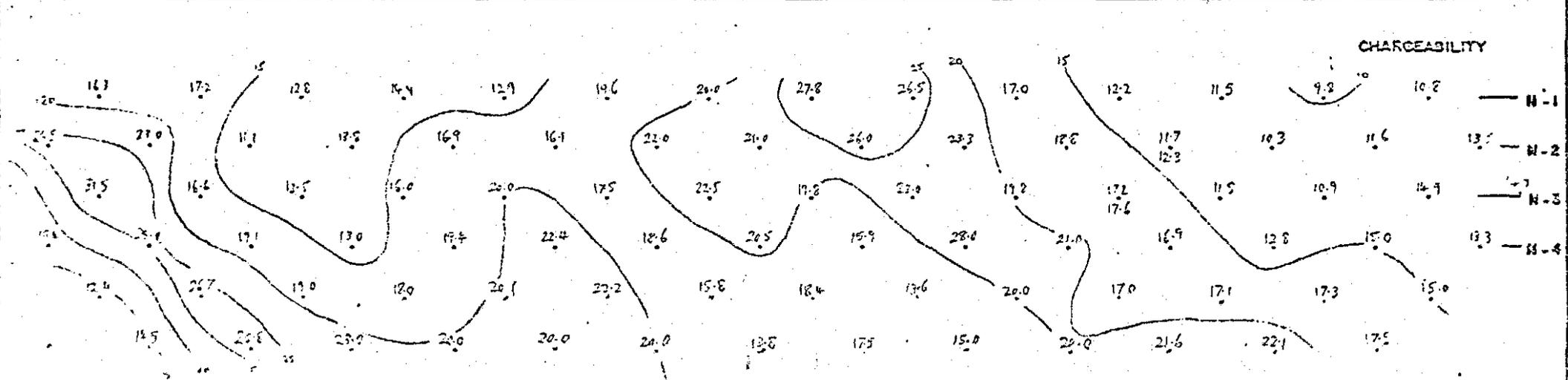
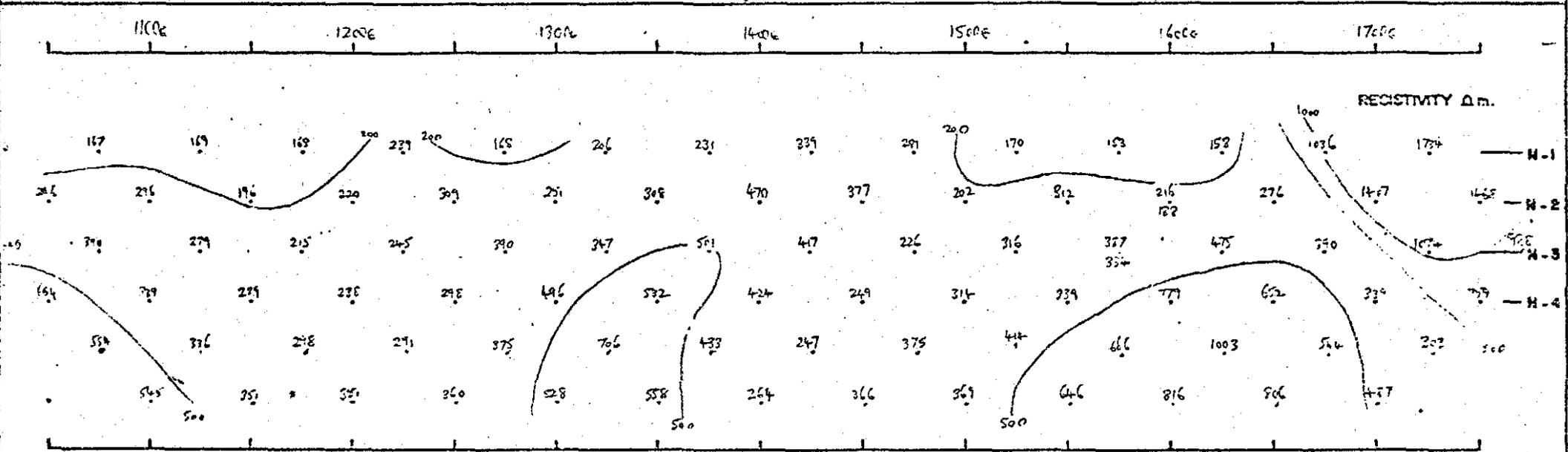
JOB No. TAS 114

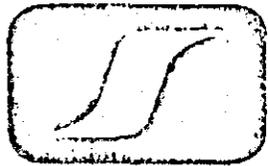




SCINTREX PTY. LTD.
 INDUCED POLARIZATION AND RESISTIVITY SURVEY
 DIPOLE - DIPOLE ARRAY

DATE 9-12-'83		LINE No. 2700N
PLOTTED BY P. LIST		PROSPECT NORTH AUSTRAL
PULSE 2500	Rx. 304126	
DIPOLE SPACING 50M		JOB No. TAC 114





SCINTREX PTY. LTD.
 INDUCED POLARIZATION AND RESISTIVITY SURVEY
 DIPOLE - DIPOLE ARRAY

DATE 10-12-73

LINE No. 2800N

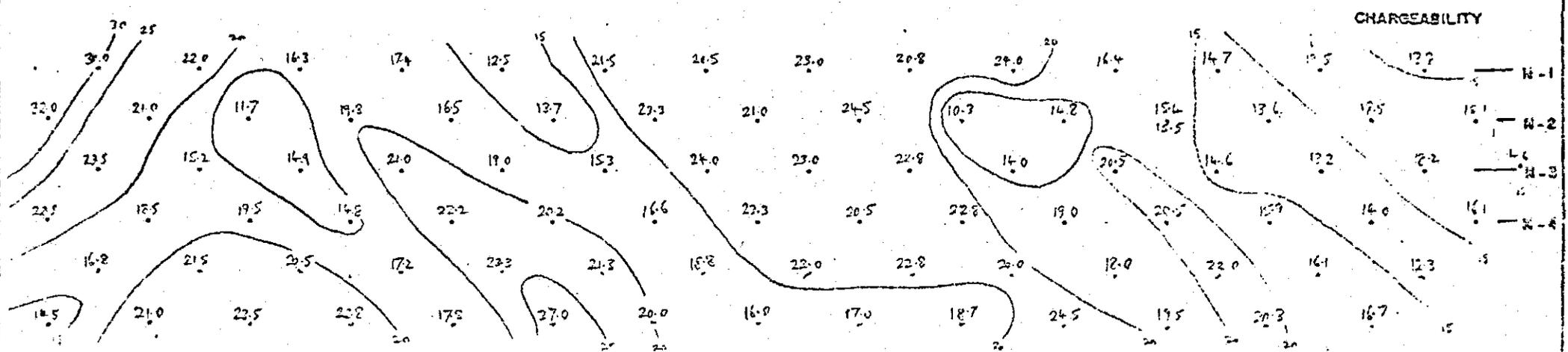
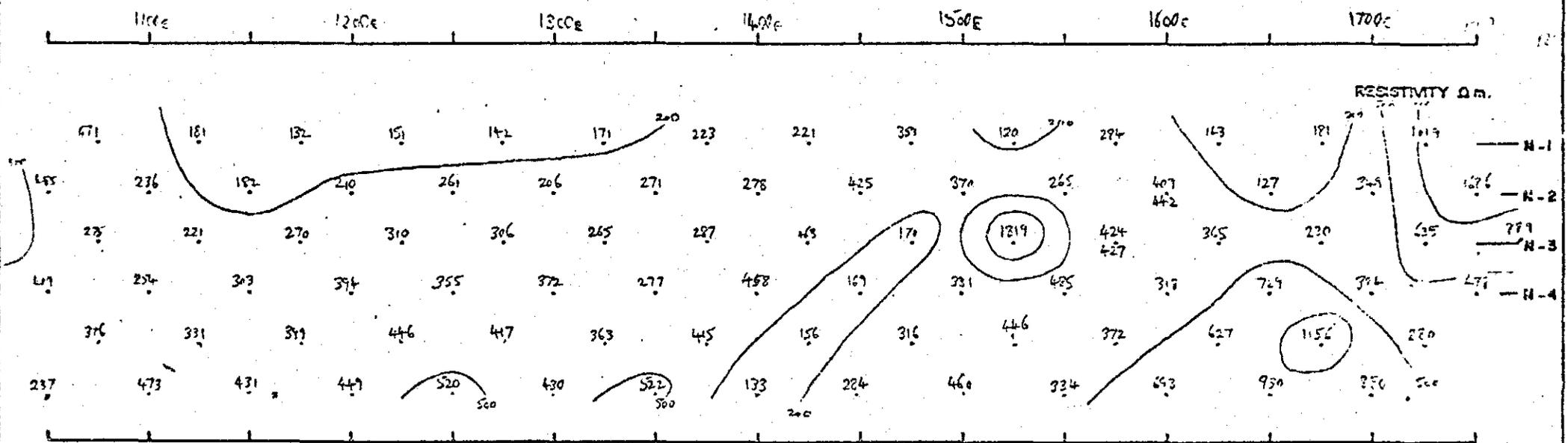
PLOTTED BY P. LIST

PROSPECT NORTH AUSTRAL

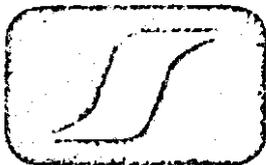
PULSE 2 sec RX. 306106

JOB No. TFS 114

DIPOLE SPACING 50m

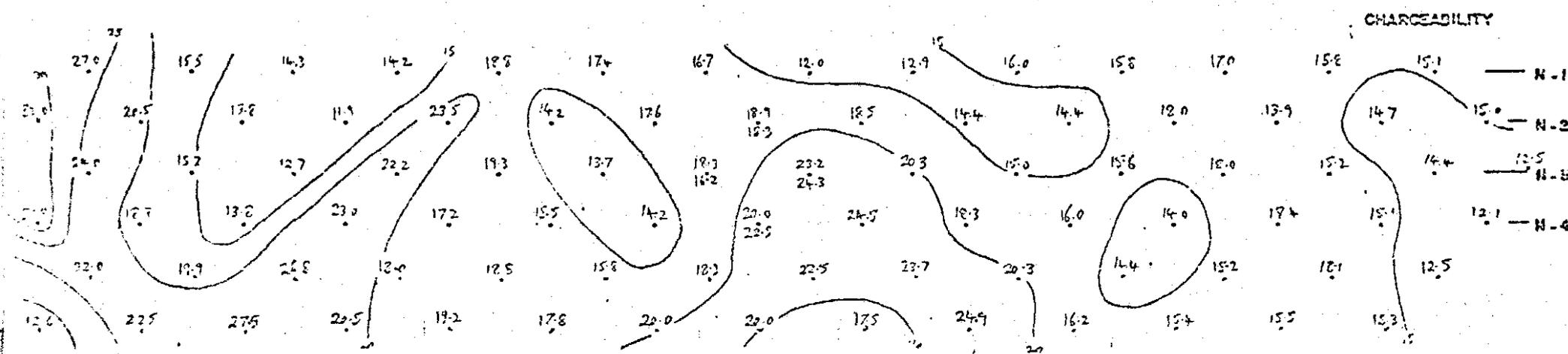
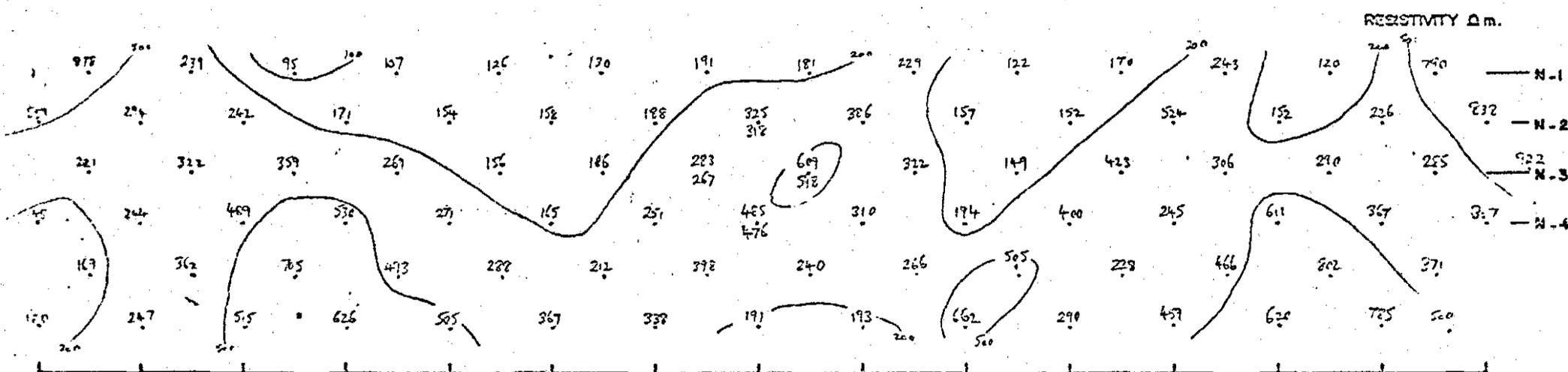
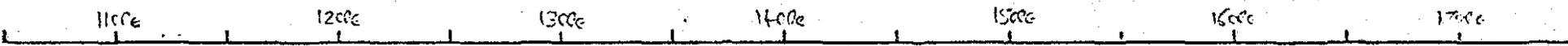


450055



SCINTREX PTY. LTD.
 INDUCED POLARIZATION AND RESISTIVITY SURVEY
 DIPOLE - DIPOLE ARRAY

DATE	11-12-83	LINE No.	2900N
PLOTTED BY	P. LIST	PROSPECT	NORTH AUSTRAL
PULSE	2 sec	Rx.	304126
DIPOLE SPACING	50M	JOB No.	TAS 114



APPENDIX D. - ZMG 249, 249A, 252 - Drill Logs

LOCATION	E.L. 4/78 ZEEHAN - North Austral Grid L2,800N; 1,720E	TOTAL DEPTH	214.3m	03			02			
OBJECTIVE	- To test mineralisation in limestone under old Montague Workings. - To explain source of E.M. anomaly at 1,590E	MOLE SIZE	HQ 9-74m; NQ 74-214.3m	8-12 Footage	13-16 Direction	17-18-21 Dip	8-12 Footage	13-16 Direction	17-18-21 Dip	ORE DIP. (18 31)
RESULT	MINOR Pb/Zn in Siderite veins in sandstones under old workings. hole was lost at 214.3m and did not test E.M. anomaly.	COMMENCED	29.10.83	70m	189° Mag	-60.5°				COLLAR DIP. (12 15) -60°
		COMPLETED	29.11.83	118m	188° "	-60°				DIRECTION (16 19) 192° Mag
		LOGGED BY	G. Kary	151m	191° "	-60°				R.L. (20 23) 213m
				190m	189.5°	-59.5°				CO ORDS L2,800N/1,720E North Austr
										LOCATION ZEEHAN 3.V. E.L. 4/78

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	04										CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag - g/t	44-49 Au - g/t	50-55 Fe%	RUN
0	186	CROTTY QUARTZITE													
0	9.1	No core (reaming)													
9.1	24.7	Clay - pale orange, fine grained minor creamy green siltstone fragments													
24.7	34.4	Siltstone grey, fine grained, poorly intensely cleaved													
34.4	37.2	Sandstone - light brown to grey quartz rich, very porous, minor grey/green lithic fragments. Minor grit beds. Bedding at 40° to c.a. Porosity may be due to a weathered out calcareous matrix													
37.2	40.6	Quartzite Green/grey, fine grained													
40.6	43.4	Sandstone Pale brown, quartz rich very porous. Porosity may be due to a weathered out calcareous matrix													
43.4	51.4	Siltstone Grey to greeny-grey, highly cleaved													
51.4	51.8	Sand grey, fine quartz sand													
51.8	63.8	Sandstone pale green, quartz rich, minor pink bands. Minor grit, slightly porous. Minor quartz veining Bedding at 45° to c.a.													
63.8	69.9	Sandstone Banded grey and olive green, fine grained. Minor quartz veins. Bedding at 40° to c.a.													

450061

060

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Ba g/t	RUN	SHORT
69.9	75.9	Quartzite - light grey, fine grained minor black shale fragments with trace of Py. Minor quartz-siderite veins. Bedding at 40° to c.a.															
75.9	80.4	Quartzite - grey, banded with olive green siltstone. Slightly brecciated. Minor quartz veining. Bedding at 35° to c.a.															
80.4	83.5	Siltstone - band grey and green, finely bedded. Minor quartz veining. Bedding at 50-70° to c.a.															
83.5	84	Quartzite - grey, fine grained.															
84	86.6	Breccia - sedimentary, grey quartz sandstone fragments in a dark grey silty matrix.															
86.6	94.3	Laminated Quartzite/Siltstone - grey quartzite, dark grey siltstone. Highly contorted (slumped) bedding minor breccia. 88.9-89.4 Quartz-Dolomite vein															
94.3	96.6	Siltstone - grey/green, well bedded, abundant coral fossils															
96.6	99.9	Sandstone - mottled light and dark green, fine grained 1% Py															
99.9	104.6	Siltstone - Banded grey and dark grey, fine grained slumped. Bedding at 10-50° to c.a.															
104	158.9	GORDON LIMESTONE EQUIVALENT															
104.6	107	Siltstone - grey, fine grained, abundant 10mm x 2mm 'cigar' shaped trace fossils															
107	107.7	Quartzite - grey fine grained, minor quartz-carbonate veins.															
107.7	108.5	Carbonate Vein - Creamy white, non reactive to warm or cold dilute HCL. Does not tarnish after exposure to air. Very dense 10% Gn/Si	107.7-108.5 - 10% Gn/Si in carbonate vein. Sl is a chocolate brown to amber brown colour. Gn/Si occur as smaller stringers within vein	59034	107.7	108.7		1m									

450062

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Es g/t	RUN	SHORT
108.5	112.3	Siltstone - mottled grey, moderately bedded, very siliceous. Minor GN/SL in small cross-cutting quartz carbonate veins. Bedding at 45° to c.a.	108.5-110.8 Minor GN/SL as selvages in small (<3mm) quartz-carbonate veins.	59035 59036	108.7 109.7	109.7 110.8		1m 1.1m									
112.3	129.4	Banded sandstone-siltstone - light grey fine grained quartz rich sandstone and dark grey fine grained siltstone. Moderately to intensely slumped. Minor black shale fragments in sandstone beds. Moderate carbonate veins in sandstone beds. Minor Py throughout. Bedding at 5-45° to c.a.															
129.4	131.3	Grit - light grey to pink. Mainly quartz, moderate black shale fragments. Minor carbonate veining. Bedding at 45° to c.a.															
131.3	134.6	Banded Sandstone - Siltstone - as 112.3-129.4m Moderate quartz-carbonate veining. Trace GN	131.3-134.6 Trace GN is quartz-carbonate veins														
134.6	137.4	Carbonate Vein - creamy white, non reactive to HCL, minor quartz, moderately banded. 1% GN/SL Banding at 20° to c.a.	134.6-137.4 - 1% GN/SL as fine bands in carbonate veins	59037 59038 59039	134.6 135.6 136.6	35.6 36.6 37.6		1m 1m 1m									
137.4	143.2	Quartzite - grey fine grained minor black shale fragments. Minor carbonate veining. Trace SL	137.4-143.2 Trace SL in carbonate veins														
143.2	145.9	Siltstone - light grey, moderately banded very siliceous, slightly brecciated - light grey siliceous fragments in a dark grey matrix. Trace Py															
145.9	153.5	Banded Sandstone-Siltstone - light grey, fine grained siliceous sandstone and dark grey siltstone. Variably slumped. Bedding at 10-50° to c.a.															
153.5	154.9	Carbonate Vein - creamy white, non reactive to HCL. Moderate quartz content, minor quartz crystal lined vugs. Minor SL	153.5-154.9 Minor known SL at stringers in carbonate veins														
154.9	158.9	Brecciated Sandstone-Siltstone - as 145.9-153m, moderately brecciated. Minor carbonate veining.															

450063

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA								CORE REC'D	
FROM	TO							Sample Length	20.25 Pb%	26.31 Zn%	32.37 Cu%	38.43 Ag g/t	44.49 Au g/t	50.55 Fe%	56 g/t	RUN	SHORT
158.9	160.3	Fault Zone Brecciated grey siltstone cut by large quartz carbonate veins at 5-10° to c.a.															
160.3	214.3	CRIMSON CREEK FORMATION															
160.3	163.9	Siltstone - grey, fine grained, well bedded 160.6-161.8 Quartz-carbonate vein at 5-10° to c.a. trace SL. Bedding at 50° to c.a.	160.6-161.8 trace SL in quartz-carbonate vein														
163.9	169.8	Banded Siltstone-Wacke - grey fine wacke and dark grey well laminated siltstone. Minor siltstone ripped up into wacke beds. Minor slumping. Minor quartz and calcite veining. Bedding at 45° to c.a.	167.4-167.7 green lattice of Py and calcite veins 169.7-169.8 1% SL, pink to brown fine bands at 60° to c.a.	59040 59041	167.4 169.6	167.7 169.8		0.3m 0.2m									
169.8	173.5	Banded Mudstone-Wacke - cream, fine grained, well laminated mudstone and green wacke. Minor quartz carbonate veining. Minor slumping. Bedding at 55° to c.a.															
173.5	179.5	Banded Siltstone-Wacke - greeny grey siltstone and green wacke. Moderate slumping. Minor quartz veining. Bedding at 45° to c.a.															
179.5	195.0	Banded Siltstone-Wacke - dark grey, finely laminated siltstone and grey lithic wacke. Minor slumping. Bedding at 50° to c.a.	179.5-195 1% Py in siltstone beds														
193.0	199.0	Silicified Bed - mottled dark grey, very fine grained, very siliceous.		59042	199.35	199.55		0.2m									
199.0	202.9	Banded Siltstone-Shale - dark grey siltstone and black shale. Intensely slumped, moderately brecciated. Minor carbonate veining. Minor green wacke beds.	199.4-199.5 2% GN, minor SL in carbonate vein														
202.9	210.8	Wacke - green, minor green well laminated siltstone beds.															
210.8	212.1	Banded Siltstone-Shale - greeny grey siltstone and black sheared graphitic shale. Minor quartz carbonate veining.															

450064

ELECTROLYTIC ZINC CO OF A'ASIA LTD
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

HOLE No. ZG 249 Sheet 5

A 11241

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	RUN
212.1	214.3	Wacke - green, minor green well laminated, slurred siltstone beds. <u>END OF HOLE</u> HQ rods broken off in hole, hole cemented upto 7m. Redrilling in attempt to run off and start new hole.													

450065

064

LOCATION E.L. 4/78 ZEEHWN North Austral Grid L2,800N/1,720E
OBJECTIVE To test E.M. anomaly at 1,590E. ZMG 249A is a wedge from 97m of abandoned hole ZMG 249.
RESULT Source of E.M. anomaly appears to be graphitic shales.

TOTAL DEPTH 289m
HOLE SIZE NQ 97-105m; BQ 105-289m
COMMENCED 29.11.83
COMPLETED 9.12.83
LOGGED BY G. Kary

03			02		
8-12 Footage	13-16 Direction	17-18-21 Dip	8-12 Footage	13-16 Direction	17-18-21 Dip
105m	Azimuth affected	-60°	225m	191° Mag	-56.5°
142m	By broken	-58°	287m	191° "	-56°
169m	NQ rods	-56°			

ORE DIP (8-12) COLLAR DIP (12-15) -60°
DIRECTION (16-18) 192° Mag
R.L. (20-23) 213m
COORDS. L2,800N/1,720E
LOCATION E.L. 4/78 Zeehwn - Nth Aust

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	04				ASSAY DATA							CORE REC'D	
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Ba g/t	RUN
0	97.0	SEE LOG OF ZMG 249														
97.0	104.3	CROTTY QUARTZITE														
97.0	97.4	Siltstone - grey/green, well bedded abundant coral/bryozoa fossils														
97.8	100.2	Sandstone - grey-green, mottled, tarnishes to a brown green colour, poorly bedded. Minor Py														
100.2	104.3	Siltstone - Band light and dark grey, moderately siliceous. Intensely slumped. Bedding at 0-45° to c.a.														
104.3	156.8	CORDON LIMESTONE EQUIVALENT														
104.3	107.3	Siltstone - grey, abundant small (5-10mm x 2mm) cigar shaped trace fossils														
107.3	108.5	Carbonate Vein - creamy white non reactive to warm or cold dilute HCL. Does not tarnish on exposure to air 5-10% SL, minor CN	107.3-108.2 2% SL in carbonate vein 108.2-108.5 10% SL minor CN in carbonate vein	59043	107.3	108.0	0.7m									
108.5	112.5	Siltstone - grey fine grained well bedded. Minor quartz carbonate veining. Bedding at 40° to c.a.														
112.5	129.2	Banded Sandstone-Siltstone - light grey siliceous sandstone and grey siltstone. Variably slumped. Moderate black shale fragments. Up to 2% Py with black shale fragments. Minor quartz-carbonate veining.	123.0-126.9 2% Py fragments associated with black shale fragments													
129.2	130.7	Sandstone - white to pink, fine to coarse grained Minor grit beds. Essentially quartz, minor black shale fragments.														

450066

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D	
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag pt	44-49 Au pt	50-55 Fe%	Ba %	RUN
130.7	135.3	Banded Sandstone-Siltstone - as in 112.5-129.2. Minor black shale fragments. Trace Py														
135.3	137.3	Dolomite Vein - creamy white as other veins, weak reaction to warm HCL. 1% SL	135.3-137.3 1% SL in dolomite vein	59045	135.3	136.3		1m								
				59046	136.3	137.3		1m								
137.3	142.8	Sandstone - light grey to white. Quartzite to quartz sandstone. Variably dolomitised i.e. cement and matrix is dolomite. Minor SL associated with dolomitisation.	141.3-142.8 Minor SL occurring with dolomitised zones	59047	141.8	142.8		1m								
142.8	144.0	Siltstone - dark grey, well bedded minor carbonate veins (dolomite). Bedding at 25-40° to c.a.														
144.0	150.5	Sandstone - light grey, mainly quartzite, minor thin grey siltstone beds. Minor slumping.														
150.5	153.7	Dolomite Vein - creamy white, mild reaction to HCL after core scored by penknife, 2% SL. Minor quartz veins	150.5-152.5 1% SL, rare GN in dolomite vein. SL is brown and forms in radiating clusters.	59048	150.5	151.5		1m								
				59049	151.5	152.5		1m								
				59050	152.5	153.0		0.5m								
				59051	153.0	153.7		0.7m								
156.8	209	<u>CRIMSON CREEK FORMATION</u>														
156.8	164.8	Sandstone - grey, fine grained, moderately bedded. Bedding at 40-60° to c.a.														
164.8	169.3	Siltstone-Mudstone - light and dark grey fine to coarse siltstone with moderate pale creamy green beds. Heavily slumped and brecciated.														
169.3	192.5	Siltstone-Wacke - grey well laminated siltstone, fine grained and fine green wacke. finely interbedded Minor slumping. Bedding at 40-55° to c.a.														
192.5	196.5	Silicified Unit - mottled dark grey to greeny grey Moderately veined by quartz. Moderately brecciated Completely silicified														
196.5	199.3	Banded Siltstone-Shale - grey siltstone and dark grey to black shale. Intensely slumped and brecciated Minor green fine wacke beds at 199.0-199.3m														

450067

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA						CORE REC'D	
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	RUN
199.3	227.7	Wacke-Siltstone-Shale - green to greeny grey fine grained wacke, grey siltstone and minor black carbonaceous shales. Minor slumping 217.2-217.3 shales very graphitic, intensely sheared. Minor quartz carbonate veining. Bedding at 20-40° to c.a.													
227.7	229.5	Shale - dark grey to black, variably carbonaceous Minor quartz-carb veins													
229.5	231.0	Wacke - pale grey, minor pale green mudstone fragments. Sharp upper and lower contacts. Contacts at 50° to c.a.													
231.0	232.2	Shale - dark grey to black, carbonaceous. Minor fragments of quartz.													
232.2	249.8	Mudstone-Siltstone - pale creamy green mudstone and green grey moderately bedded siltstones to fine wacke. Minor black shale lenses. Minor quartz veining. Bedding at 25° to c.a.													
249.8	262.3	Graphitic Shales - dark grey to black. Moderately to intensely sheared. Moderately fractured. Minor QV/SL, minor quartz carbonate veins.	249.8-262.3 trace QV/SL in quartz carbonate veins												
262.3	289	Siltstone - very finely laminated to tuffaceous, grey to light grey. Minor quartz carbonate veining Minor soft sediment deformation. Minor thin black carbonaceous beds. Bedding at 40-60° to c.a. 262m 40° 287m 60° END OF HOLE													

450068

067

ELECTROLYTIC ZINC CO. OF ASIA LTD.
ROSEBERY - TASMANIA

DIAMOND DRILL CORE RECORD

01
HOLE No 1377
ZAC 252 Sheet 1

LOCATION	E.L. A/78 - ZEEHAN J.V. L2700N/1,700E North Austral Grid	TOTAL DEPTH	157m	03						02	
OBJECTIVE	To test Pb/Zn mineralisation in limestone reported in old Montague Mine.	HOLE SIZE	52.1-63 HQ; 63-114.8 HQ	8-12 Footage	13-16 Direction	17-18-21 Dip	8-12 Footage	13-16 Direction	17-18-21 Dip	ORE DIP (8-11)	
RESULT	3-5% disseminated SL over 6m in Dolomitised/Silicified limestone.	COMMENCED	13.12.83	60m	196°Mag	-57°				COLLAR DIP (12-15) -55°	
		COMPLETED	23.12.83	110m	194°	-58.5°				DIRECTION (16-19) 193° Mag	
		LOGGED BY	G. Kary	157m	197°	-56.5°				R.L. (20-23) 210m	
										CO ORDS. L2,700N/1,700E	
										LOCATION North Austral Grid	

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	04										CORE REC'D		
FROM	TO			SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Bs g/t	RUN
0	52.1	NO CORE - HW casing advancer used														
52.1	93.7	CRITTY QUARTZITE														
52.1	55.9	Breccia - quartzite and quartz carbonate fragments in a grey highly sheared matrix.														
55.9	58.0	Sandstone - pale green, coarse grained, mainly quartz, minor black chert fragments. Dolomite cement/matrix. Moderate quartz-dolerite veining. Bedding at 40° to c.a.														
58.0	60.6	Quartzite - greeny grey, fine grained minor quartz veins.														
60.6	65.0	Grit - pink to pale green rounded to subangular coarse quartz, shale, siltstone fragments. Dolomitic cement. Bedding at 40° to c.a.														
65.0	71.0	Quartzite - white to pale green, fine grained minor coarse grained grit beds. Moderate quartz veining. Minor GN/SL is quartz veins. Minor carbonate veins. Bedding at 30° to c.a.	66.8-67.0 2-3% GN/SL in fine quartz veins 69.75-70.05 1% GN in fine quartz veins minor SL	59052	66.7	67.2	0.5m									
71.0	79.5	Siltstone - grey, well bedded, slightly calcareous tarnishes rapidly to a brown green colour. Minor fine dolomite veins. Bedding at 30° to c.a. 78.7-79.5 30% coral fragments														
79.5	81.0	Sandstone - grey, essentially quartz, high percentage dolomitic matrix, very porous where dolomite is weathered out. Tarnishes to a brown/green colour. Minor dolomite veins.														
81.0	83.9	Siltstone - light grey to grey, slightly calcareous well bedded. Tarnishes to a greeny/grey colour. Rare GN 81.9-83.3 - brecciated by intense calcite veining. Bedding at 25° to c.a.														

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068

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE RECD	ASSAY DATA							CORE RECD		
FROM	TO							Sample Length	20-25 Pb%	26-31 Zn%	32-37 Cu%	38-43 Ag g/t	44-49 Au g/t	50-55 Fe%	Be g/t	RUN	SHORT
83.9	85.2	Quartzite - light grey, very fine grained, minor micaceous carbonaceous laminae.															
85.2	93.7	Siltstone - grey fine grained slightly calcareous Tarnishes to a greeny/grey colour. Moderate dolomite/ quartz veining. Bedding at 20° to c.a. N.B. - cavities between 90.0 and 94.0m, core recovery 25%. Exact nature of Crotty/Gordon contact is not evident.															
93.7	157.0	GORDON LIMESTONE															
93.7	98.3	Limestone - grey to creamy tan slightly arenaceous to very fine grained. Moderate thin carbonaceous beds. Minor dark grey to black pisoliths. Trace Py. Moderate calcite veining. Bedding at 45° to c.a.															
98.3	101.2	Silty Limestone - grey, fine grained, poorly bedded Minor calcite veining. Bedding at 25° to c.a.															
101.2	102.3	Bioturbated Limestone - light grey to cream, fine to med grained, abundant small oolitic? calcite shapes. Minor calcite veining.															
102.3	107.3	Limestone - grey, fine grained, moderate thin dark grey carbonaceous beds with minor SL. Moderate calcite veining 104.9-105.0 grey oolitic limestone, sharp upper and lower contacts. 105.3-107.3 core badly broken and ground by bit. Poor recovery	102.3-105.3 Minor pink disseminated SL in thin black/dark grey carbonac- eous beds.	59054	102.3	103.3	1m										
				59055	103.3	104.3	1m										
				59056	104.3	105.3	1m										
107.3	113.3	Limestone Breccia - grey finely crystalline slightly carbonaceous limestone, minor coral fragments cut by Intense siderite/dolomite/quartz veining. Very dense 5-15% finely disseminated SL. Completely dolomitised/ silicified, abundant quartz and calcite line vugs. 107.3-108.9 moderate coral and shell fragments 112.9-113.3 gradational transition to non-altered limestone	107.3-113.3 5-15% finely disseminated SL, rare GN. s.l is pink to brown to pale yellow/cream -5% SL is obvious but density of core indicates a poss- ible higher percentage.	59057	107.3	108.3	1m										
				59058	108.3	109.3	1m										
				59059	109.3	110.3	1m										
				59060	110.3	111.3	1m										
				59061	111.3	112.3	1m										
				59062	112.3	113.3	1m										

450070

FOOTAGE		ROCK DESCRIPTION	MINERALISATION	SAMPLE No.	8-13 FROM	14-19 TO	CORE REC'D	ASSAY DATA							CORE REC'D	
FROM	TO							Sample Length	Zn-25 Pb%	Zn-31 Zn%	Cu-37 Cu%	Ag-43 Ag g/t	Au-49 Au g/t	SO-55 Fe%	Ba g/t	PLN
113.3	120.6	Limestone - finely bedded pale brown micrite and grey finely crystalline limestone. Abundant fine black carbonaceous laminae, minor stylolites, minor slumping, trace Py, rare Gv/Si. Minor calcite vein Bedding at 0-25° to c.a. 116.2-119.0 40% core recovery.	113.3-120.6 Rare Gv/Si in small calcite veins													
120.6	126.0	Quartzite - grey, fine grained minor black carbonaceous lamina. Finely fractured by quartz veins.														
126.0	143.5	Limestone - poorly bedded dark grey micrite and grey finely crystalline limestone. Abundant black carbonaceous laminae, minor stylolites. Moderate to intense calcite veining. Trace Py Bedding at 30-40° to c.a. 133.5-137.5 intense coarsely crystalline calcite veining.														
143.5	150.7	Sandstone/Siltstone - grey, finely bedded quartz sandstone, minor dark grey very finely bedded slightly calcareous siltstone, rare shale fragments. Minor micro-faulting and soft sediment deformation. Minor quartz veining. Bedding at 35-40° to c.a. Upper contact gradational with overlying limestone and lower contact gradational with underlying wacke														
150.7	153.8	Wacke - pale greeny/brown, poorly bedded, fine grained tuffaceous, minor grey siltstone beds 150.7-152.1. Sharp basal contact, minor load casting at basal contact.														
153.8	157.0	Shale - dark grey to black very finely bedded, variably carbonaceous to graphitic. Minor soft sediment slumping and micro-faulting. Minor Gv/Si in quartz carbonate veins. Bedding at 30° to c.a. END OF HOLE	156.2-156.6 1% Gv/Si in siderite vein	59063	156.0	157.0	1m									

450071

APPENDIX E. - Oceana Area - Drill Logs

OCEANA PROSPECT - SUMMARY OF DIAMOND DRILLING

FEBRUARY 1984

HOLE	CO-ORD	BEARING	DECLIN	DEPTH (m)	COORDINATES AZIMUTH DEFLECTION (at terminal depth)	RESULTS (* including)
ZT-79-2	3700N 1500E	270°G	-60°	235.90	Unknown (acid)	65-218=153m @ 5.10% Pb + 3.50% Zn + 41.7g/t Ag * 65-96= 31m @ 0.66% Pb + 3.28% Zn + 1.0g/t Ag 96-122= 26m @ 22.26% Pb +11.69% Zn + 203.4g/t Ag *103-118= 15m @ 33.29% Pb +19.22% Zn + 336.7g/t Ag 122-204= 82m @ 0.68% Pb + 1.01% Zn + 3.0g/t Ag *204-218= 14m @ 8.37% Pb + 2.95% Zn + 56.7g/t Ag
ZT-80-3	3200N 1515E	270°G	-60°	399.70	3075N 1335E	237-238= 1m @ 8.25% Pb + 0.39% Zn + 73.6g/t Ag
ZT-80-4	3420N 1490E	270°G	-66°	360.30	3370N 1350E	247-258= 11m @ 12.00% Pb + 4.0% Zn + 89g/t Ag *250-258= 8m @ 15.00% Pb + 5.40% Zn + 113g/t Ag 302-307= 5m @ 22.30% Pb + 1.99% Zn + 323g/t Ag *304-307= 3m @ 36.0% Pb + 3.2% Zn + 530g/t Ag
ZT-80-5	3600N 1590E	270°G	-65°	475.30	3530N 1350E	No visible mineralization
ZT-80-6	3650N 1350E	90°G	-60°	330	3658N 1506E	69- 72= 3m @ 1.52% Pb + 0.28% Zn + 13.3g/t Ag 112-117= 5m @ 1.76% Pb + 1.20% Zn + 6.6g/t Ag 126-134= 8m @ 1.22% Pb + 0.24% Zn + 5.5g/t Ag 212-220= 8m @ 0.45% Pb + 1.39% Zn + 1.0g/t Ag
ZT-80-7	3420N 1250E	037°G	-50°	250	3383N 1420E	167-169= 2m @ 12.0% Pb + 11.0% Zn + 70g/t Ag
ZT-80-8	3700N 1575E	270°G	-55°	228	3722N 1424E	160-167= 7m @ 0.6% Pb + 3.12% Zn + 13.7g/t Ag *165-167= 2m @ 1.7% Pb + 7.7% Zn + 29.0g/t Ag
ZT-80-9	3600N 1400E	006°G	-50°	200.20	3722N 1424E	1- 24= 23m @ 2.82% Pb + 2.12% Zn + 9.9g/t Ag * 4- 9= 5m @ 7.30% Pb + 1.88% Zn + 16.8g/t Ag 120-186= 66m @ 2.45% Pb + 0.82% Zn + 12.5g/t Ag *148-162= 14m @ 3.25% Pb + 0.4% Zn + 8.7g/t Ag 172-186= 14m @ 5.80% Pb + 1.28% Zn + 21.7g/t Ag *182-186= 4m @ 12.95% Pb + 3.09% Zn + 76.0g/t Ag
ZT-82-10	3415N 1560E	270°G	-67.5°	190.7	3411N 1595E	120.5-121=0.5m @ 0.08% Pb + 2.64% Zn + 4.0g/t Ag
ZT-82-10A	3415N 1562E	270°G	-65°	574.6	3369N 1346E	76- 77 = 1.0m @ 0.09% Pb + 5.8% Zn + 1.0g/t Ag 430-434 = 4.0m @ 3.5% Pb + 0.5% Zn + 41.5g/t Ag 445-447 = 2.0m @ 4.2% Pb + 0.3% Zn + 55.0g/t Ag 398.5-399.5 = 1.0m @ 2.15% Pb + 0.27% Zn + 13.0g/t Ag
ZT-82-11	3602N 1374E	090°G	-45°	87.9	Unknown	6- 11 = 5.0m @ 3.5% Pb + 2.7% Zn + 24.6g/t Ag 22- 26 = 4.0m @ 1.08% Pb + 1.06% Zn + 9.8g/t Ag 54- 70 =16.0m @ 3.0% Pb + 2.1% Zn + 14.0g/t Ag * 57- 59.5 = 2.5m @ 13.0% Pb + 1.3% Zn + 49.2g/t Ag 82- 83 = 1.0m @ 2.2% Pb + 2.3% Zn + 20.0g/t Ag
ZT-82-12	3605N 1230E	090°G	-64°	481.6	3594N 1444E	24-27 = 3.0m @ 0.02% Pb + 1.82% Zn + 1.0g/t Ag *374-377 = 4.0m @ 11.6% Pb + 0.3% Zn + 80.3g/t Ag 374-376 = 2.0m @ 18.6% Pb + 0.3% Zn +131.5g/t Ag 380-384 = 4.0m @ 1.4% Pb + 0.5% Zn + 7.0g/t Ag
ZT-82-13	3685N 1250E	090°G	-60°	346	N/A	146-148 = 2.0m @ 0.28% Pb + 0.3% Zn + 110g/t Ag 264-286 = 22m @ 7.5% Pb + 0.55% Zn + 65.9g/t Ag *272-286 = 14m @ 10.75% Pb + 0.74% Zn + 96.7g/t Ag *278-283 = 5m @ 21.16% Pb + 1.62% Zn + 205g/t Ag 335-336 = 1m @ 0.6% Pb + 2.2% Zn + 3.0g/t Ag 341-343 = 2m @ 1.0% Pb + 1.5% Zn + 34.0g/t Ag
ZT-83-14	3670N 1575E	090°G	-61°	172.2*	N/A	Not at target
ZT-W2	3600N 1415E	228°M	-45°	15 (abandoned)		3- 14 =11.0m @ 10.2% Pb + 3.3% Zn + 21.5g/t Ag *6.0m @ 16.2% Pb + 3.0% Zn + 31.7g/t Ag

DRILLHOLE DATA

ZT-82-10

Location : 3415N:1560E

Declination : 67.5

Azimuth : 270°G

Total Depth : 190.7m

Assay Results

120.5 - 121 = 0.5m @ 0.08% Pb + 2.64% Zn + 4.0g/t Ag



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
81.70	84.30	CONT: sequence. The bedding laminations are enhanced by carbonaceous filled stylolites parallel to bedding. Core is moderately calcite veined with trace siderite. Bedding 15° to ea @ 83.8 metres.												
84.30	85.50	SOFT SEDIMENT DEFORMED INTERBEDDED DOLOMITE, CALCUTITE. Soft sediment deformed, bed cast folded interbedded fine grained, unfossiliferous calcutites and uniformly crystalline sugary textured dolomite. Core moderately calcite veined, minor siderite. Core becoming increasingly veined and brecciated downhole. Trace sphalerite as thin veinlets associated with calcite veining.	Trace sphalerite as thin veinlets.											
85.50	90.00	TECTONIC ANGULAR CALCITE HEALED BRECCIA. Calcutites and dolomites appear to have been brecciated in situ with angular fragments occurring within a calcite cement. Numerous fragments are shot through with myriads of calcite veinlets. Both the footwall and hanging wall sections of the breccia have disseminated fine grained galena and a trace sphalerite as disseminations, blebs or as stringers rimming angular fragments. Estimates range up to 1% gn + sl. Minor pyrite is also associated with it. The calcite is coarsely crystalline. Minor stylolites carbonaceous infilled.	Disseminated galena and trace sphalerite up to 1% sl.	79701	85	86	1	30	2250	2000	—	5650		
				79702	86	87	1	15	1150	560	1	1.35%		
				79703	87	88	1	15	1400	1500	—	5500		
				79704	88	89	1	20	2650	1250	1.5	6000		
				79705	89	90	1	20	3450	2300	4.5	6000		
90.00	94.30	STRONGLY VEINED, INTERBEDDED CALCUTITE AND THIN DOLOMITES. Massive, fine grained weakly fossiliferous, weakly pyritic calcutites interbedded with thin (< 1.5 cm wide) black, crystalline,	Trace sphalerite as blebs in thin calcite veinlets.											

450078 077



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
90.00	94.30	CON'T: pyritic dolomite. Bedding contacts invariably stylolitized, show signs of load casting and are faulted by thin < 1cm wide calcite veins. Minor brecciation within calcite veins. Bedding 30° to ca @ 92m.												
94.30	97.70	TECTONIC ANGULAR BRECCIA. Host rock calcutites have been literally blown apart by infusion of calcite cement as thin veinlets generally < 5mm in width. Core strongly calcite cemented with minor zones of thicker veining present (1-5cm in width). Minor brecciated dolomite interbeds present < 1.5cm in width.												
97.70	104.50	COARSE GRAINED CALCITE VEIN. Coarsely crystalline, white calcite containing minor zones of brecciated limestone and larger blocks of calcite veined calcutites. Minor carbonaceous veining.	Trace galena.											
104.5	105.9	INTERBEDDED CALCUTITE, DOLOMITE. Massive, generally weakly to unfossiliferous, competent, extremely fine grained pyritic calcutites varying in width from 4-10cm, interbedded with thin, < 1cm in width, black weakly carbonaceous, fine grained, pyritic (fine grained) dolomite. Core moderately calcite veined and stylolitized. Bedding 45° to c.a @ 104.80 metres.	Pyrite in both calcutite and dolomite.	79706	105	106	1	20	1350	3150	6	2300		
105.9	106.75	BRECCIA: Pb-Zn MINERALIZED. The breccia is composed of both large and very small fragments (2-5cm in width down to < 1mm) predominantly of dolomite and calcutite which would have to have been moved into position as the surrounding rocks couldn't have supplied	Galena, sphalerite as fine grained disseminations within matrix and around fragment boundaries. ≈ 1.5% Cu-St.	79707	106	107	1	25	1750	3200	6.5	3000		

450079

078



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
105.9	106.75	CON'T: the material. The matrix appears to be a combination of ground dolomite and calcutite with only minor calcite. Galena and sphalerite occur as blebs and disseminations throughout but occur near fragment boundaries more often than not. Extremely fine grained pyrite occurs in the matrix also. Calcite veining appears to have cut the core later. Fragments are both angular to sub-angular possibly indicating movement. The overall appearance is of a dark coloured breccia very similar to that observed in ZT-81A-7 @ 50.2 to 52.2m.																		
106.75	114.10	INTERBEDDED CALCULITE, DOLOMITE, CALCARENITE. Massive to well bedded calcutites are interbedded with very fossiliferous (shells up to 1.5cm in diam, minor coral fragments, pellets and other debris) horizons of bioclastic calcarenite generally 5cm in width. Thinner < 1cm wide, black dolomite beds occur sporadically throughout. Core strongly calcite veined and weakly sideritic. Siderite occurs as thick units to very thin < 1 mm veinlets. Siderite rim fragments, found with veins and disseminated sphalerite occasionally occurs with the siderite. Bedding 30° to core @ 112.5m. Lot of bedding attitudes disturbed by stylolitization and by cleavage, shearing out bedding. Very competent, good recoveries.	Trace sphalerite.																	
114.10	117.70	TECTONIC BRECCIA. Very competent, good recoveries. Predominantly calcutite fragments with minor dolomite, they are very angular, show signs of complete invasion and brecciation by																		



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
114.10	117.70	CON'T: calcite veining, set within a calcite (coarsely crystalline, white, minor carbonaceous lamellae and to a lesser degree pale yellow siderite) matrix. The siderite appears to post date the calcite veining.												
117.70	118.80	VEINED CALCULUTITE. Moderately calcite veined massive calcutite lying in between two zones of intense calcite veining and brecciation.												
118.80	122.70	INTENSELY VEINED AND BRECCIATED CALCULUTITE, DOLOMITE. An interbedded sequence of calcutite/dolomite/ generally unfossiliferous has been subjected to intense calcite veining and in the process, brecciation zones within the unit could be classified as tectonic breccias. All bedding attitudes have been obliterated. Minor siderite occurs within the zone. A patch of coarsely crystalline galena (av ~ 4% Gn-St over 1/2 m) sphalerite occurs at 120.5 m. Further fine grained disseminated sphalerite occurs around this zone. A further zone of sphalerite-galena occurs @ 121.40m average ~ 2% Gn-St over 0.5 metre.	Coarsely crystalline yellow/pink sphalerite with minor galena occurs at 120.5 av ~ 4% gn/st over 0.5m.	79645	120.0	120.5	0.5	5	795	3150	2.5	2150		
				79646	120.5	121.0	0.5	10	875	2.64%	4.0	2200		
				79647	121.0	121.5	0.5	<1	865	2550	0.5	2900		
122.70	132.10	INTERBEDDED SLUMPY TEXTURED CALCULUTITES, CALCARENITES, DOLOMITE. Strongly calcite veined, interbedded massive calcutites and thickly bedded calcarenites (comprised of corals, stromatoporoids, oolites and pellets and shelly debris) with minor thin dolomitic interbeds. Bedding very chaotic early on in the unit (possibly due to slumping) however, becoming very												

450081 080



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
122.7	132.1	CON'T: apparent with sharp contacts towards the base of the unit. Zone weakly stylolitized. More intense veining from 126.9 - 130.0 m. Bedding 40° to ca @ 131.2 metres.																		
132.1	138.8	VEINED AND BRECCIATED INTER-BEDDED CALCULITE DOLOMITE. An interbedded sequence of massive unfossiliferous calcutites, generally < 5cm in width minor weakly fossiliferous thin calcarenites and thin black carbonaceous dolomites (usually < 1cm in width) has been invaded by pulses of calcite veining causing brecciation and intense local veining. Areas devoid of veining show weak soft sediment deformation: 35° to ca @ 135.7. Stickeniding and the formation of carbonaceous films occur in certain veins. Core badly broken - good recovery																		
138.8	142.8	RHYTHMICALLY INTERBEDDED CALC-LUTITE/DOLOMITE/MINOR CALCARENITE 5 to 15 cm wide, massive to weakly bedded, weakly fossiliferous (shaly debris aligned parallel to bedding) calcutites interbedded with thin (< 1cm width) black carbonaceous and pyritic dolomite interbeds and minor thin (< 2cm wide) very shelly bielastic calcarenites. Unit well bedded, contacts intensely stylolitized, minor soft sediment deformation. Bedding 45° to ca @ 139.4 m, 50° to ca. @ 141.40. Minor crystalline dolomite occurs pervasively throughout the unit - dolomitization secondary? Moderate calcite veining throughout.	Disseminated pyrite throughout thin dolomite interbeds																	



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
144.8	153.0	CONT: base of unit (150.5-153.0) cleavage parallel to core ^{axis} at 145.2 as is bedding? Core weakly calcite veined (generally <2mm diam)																		
153.0	163.6	VEINED AND BRECCIATED CALCULITE / CALCARENITE / DOLOMITE. The sequence at the top of the unit is predominantly massive calculites with thin interbeds of dolomite (<0.5m wide). Core shows signs of soft sediment deformation. Core from 155 to 159.7m is intensely calcite veined and brecciated with only strong to moderate veining surrounding this zone. Carbonaceous infilling occurs throughout the badly veined section of core. Core from 159.7 to 163.6m is predominantly dolomite with calculite and calcarenite interbeds. Large coral fragments and fossiliferous zones occur in a chaotically interbedded sequence indicative of stumping. Small ovoid clasts within calcarenites are filled with a sparry calcite matrix. Sections of dolomite very pyritic.	Dolomite occasionally pyritic.																	
163.6	164.6	LAMINAR CALCULITE / CALCARENITE / DOLOMITE. Very laminar and thinly interbedded massive calculite, fossiliferous calcarenites (with fossil fragments and rock fragments? dolomitized and set in a black brown pyritic matrix) and black argillaceous dolomite lamellae. Trace crystalline, brown coloured sphalerite disseminated throughout. Bedding 25° to ea at 164.0 metres.	Trace sphalerite.																	
164.6	175.4	SOFT SEDIMENT DEFORMED CALCULITE / CALCARENITE / DOLOMITE. Interbedded, moderately soft sediment deformed, unfossiliferous calculites and very fossiliferous (bioclastic - shells, ooncolites)	Trace sphalerite and pyrite within calcite vein @ 175.45m																	



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS											
From	To				From	To	Length												
164.6	175.4	<p>CON'T: and pellets) calcarenites with a carbonaceous and very pyritic matrix occasionally showing pervasive dolomitization. Interbedded within this are thin beds (1-5cm in width) of laminar to massive medium grained carbonaceous dolomite. Core is mod. to strongly calcite veined, trace siderite. Numerous bedding attitudes are stylolitized and carbonaceous infilled. Bedding 38° to ca @ 168.9 m, 42° to ca @ 175.6m, Minor tectonic breccia @ 176.85 - 176.95m comprised of angular calcite and host rock fragments set within a black carbonate matrix.</p>																	
175.4	180.45	<p>INTERBEDDED DOLOMITE/CALCULITE. Dark grey to black massive, thickly bedded (15-20cm) very pyritic (diss. and as veinlets) carbonaceous fine crystalline dolomite is interbedded with pelletal (concretionary layered pellets up to 0.6 cm diam., occasionally alternating layers comprised of pyrite, some have a nucleus of calcite, others none) and fossiliferous (bryozoan frags, shelly debris) laminar to massive (foliated or soft sediment slumped?) pyritic calc-lutites and calcarenites. Overall unit is very dark, distinctly dolomitic. Unit is well bedded with sharply defined contacts: 40° to ca @ 176.7m. Minor to moderate calcite veining occurs as veinlets <1cm in width generally later infilled by cream coloured siderite. The dolomite shows zones of rounded to ellipsoidal frags, paralleling bedding set within a dolomite matrix (possibly rip up clasts?).</p>	<p>Trace sphalerite. Abundant pyrite 1-4% within dolomite and calcutite. Pyrite blebs generally occur with calcite. Diss. Pyrite on its own.</p>																

450085 084



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS											
From	To				From	To	Length												
180.45	185.5	<p>CALCAREOUS QUARTZ ARENITE.</p> <p>Soft sediment slumped (zones containing very laminar and cross bedded fragments set in a laminar matrix), laminar calcareous fine grained quartz arenites containing rip-up clasts and flame structures. Unit mottled light and dark grey in colour. Core showing no distinct clear cut bedding due to slumping. Core moderately calcic veined and brecciated containing minor siderite infilling. Tectonic breccia 185.0 - 185.2 metres.</p>																	
185.5	186.7	<p>SLUMPED PYRITIC NODULAR CALCULITE DOLOMITE.</p> <p>Rounded to subrounded clasts and deformed beds of very nodular (pelletal) - concretionary layered, usually with pyritic layers, some with calcite nuclei, and fossiliferous calculite and calcarenite set within a matrix of black fine grained very pyritic carbonaceous dolomite. Numerous pellets are also rimmed by pyrite or in the clast boundaries. Dolomite matrix decreases down hole.</p>	Minor to 1-3% Pyrite																
186.7	189.6	<p>LAMINAR INTERBEDDED CALCULITE / DOLOMITE.</p> <p>Pale grey massive to finely laminar calculites with minor thin interbeds of dolomite containing ovoid clasts of sparry calcite. Grading down hole into a 60/40 ratio of calculite and darker dolomite with interbeds generally < 0.5 cm and average from 1 to 3 mm. Bedding 28° to c.a. @ 189.4 metres. Stylolization parallel to bedding is very evident - Weak calcite veining.</p>	Minor pyrite																

450086

085

DRILLHOLE DATA

ZT-82-10A

Location : 3415N:1562E

Declination : 65°

Azimuth : 270°G

Total Depth : 574.6m

Assay Results

76 - 77	= 1.0m @ 0.09% Pb + 5.8% Zn + 1.0g/t Ag
398.5 - 399.5	= 1m @ 2.15% Pb + 0.27% Zn + 13.0g/t Ag
430 - 434	= 4.0m @ 3.5% Pb + 0.5% Zn + 41.5g/t Ag
445 - 447	= 2m @ 4.2% Pb + 0.3% Zn + 55.0g/t Ag



PROJECT ZEEHAN - TASMANIA NO 7860	ELEVATION 181	COMMENCED 27-10-82	BORE HOLE SURVEY								
PROSPECT OCEANA	DIP COLLAR -65 G.W.	COMPLETED 11-11-82	Depth	Blp	Bearing	Depth	Blp	Bearing	Depth	Blp	Bearing
CO-ORDINATES 3415 N 1562 E	CORE SIZE HQ, NQ	TOTAL LENGTH 574.6 m	325	68	215	200	68	212	350	67	202
BEARING 270 G 217 M 228 T	LOGGED BY P.A.J.	ADD F 32 WINDRILL DIAMOND DRILL.	400	68	215.5	251	68	210	450	67	198
			500	68.5	214.5	300	68	205.5	575	66.5	194.5
			575	68.5						189	

METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
0.00	39.00	HW ROLLER BIT Interbedded siltstone, quartzite, shale and cw to hw limestone.												
39.00	46.50	SOFT SEDIMENT DEFORMED CALCULITE DOLOMITE Tectonic breccias @ 45.1 - 45.3, poor ground conditions and recovers from zone 40.6 - 44.7m.	Pyrite in calcite vein @ 45.00 m.											
46.50	47.10	INTERBEDDED CALCULITE / DOLOMITE Bedding 27° to ca @ 46.80m, becoming very fossiliferous towards the base of the unit (possible biostatic calcarenite).												
47.10	53.10	RHYTHMICALLY INTERBEDDED FOSSILIFEROUS CALCARENITES, DOLOMITES AND CALCULITES. Bedding 42° to ca @ 47.40m, 15° to ca @ 50.6m.												
53.10	75.80	CW DOLOMITE AND CALCULITE. Virtually no recovery through badly weathered zone, however, moderate to good recoveries in ZT-82-10 through same zone.												
75.80	80.00	SOFT SEDIMENT DEFORMED INTERBEDDED CALCULITE / CALCARENITE / DOLOMITE. Core moderately calcite veined and brecciated calcite healed and weakly brecciated zone from 76.10 - 76.70m contains coarsely crystalline reddish grey sphalerite as blebs and stringers with	76.10-76.70 Est contain 7% sl, 1% gn.	79708	76.0	76.5	0.5	32	630	7.0%	1	9400		
				79709	76.5	77.0	0.5	20	1200	4.5%	1	8100		

450089 088



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
75.80	80.00	CON'T. only trace amounts of galena.												
80.00	83.60	VEINED AND BRECCIATED CALCULITE DOLOMITE. Strongly calcite veined and brecciated interbedded sequence of calculites and dolomites. The unit has been brecciated in situ and later heated by an infusion of calcite. Minor zones of stylolitization occur with a carbonaceous infill.												
83.60	93.50	INTERBEDDED DOLOMITE/CALCULITE. Soft sediment deformed, interbedded dolomites and calculites. Bedding 20° to ca @ 86.50 metres.												
93.50	106.6	CALCITE VEINED, BRECCIATED CALCULITE DOLOMITE. Gray weakly fossiliferous calculite, minor calcarenite with thinly interbedded black carbonaceous sparry dolomite. Unit intensely calcite/siderite veined with subsequent brecciation and dolomitization. Disseminated pale yellow/pink sphalerite and trace galena (disseminated) associated with veining. Minor very fine grained blebby pyrite associated with veining and more dolomite rich units. Veins and veinlets show offsetting when cutting carbonaceous filled stylolites indicating later movement. Major calcite veins occur at high angle to ca. averaging 20 to 30° to ca.	Minor diss. pale yellow pink sl and trace gr. Minor very fine grained blebby pyrite.											
106.6	113.4	TECTONIC BRECCIA? Angular fragments of carbonaceous sparry dolomite, siderite, dolomitized calculites set within a matrix of sparry and micritic dolomite with	Minor py, trace sl.											



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
137.3	144.0	CALCITE VEINED, FRACTURED CALC-LUTITE MINOR DOLOMITE. Massive to weakly bedded, gray calcutites heavily stylolitized with minor thin <1cm width stylolitized argillaceous dolomites. Core extensively fractured, minor brecciation and calcite healing, minor siderite. Minor veining up to 8-10 cm in width perpendicular to bedding. Unit becoming more fissile and cleaved due to increasing argillaceous dolomite content.												
144.0	148.2	BRECCIATED STYLOLITIZED DOLOMITE, CALC-LUTITE. Thinly bedded pyritic argillaceous micritic dolomite interbedded with thin bedded calcutites. Bedding and cleavage? contacts heavily stylolitized. Zones of heavy brecciation and massive infilling of calcite to heal the myriads of fractures.	Minor pyrite generally through dolomite units, fine grained and blebby.											
148.2	160.0	BRECCIATED, DOLOMITIZED SLUMPY CALC-LUTITES, DOLOMITE Heavily tectonically brecciated (major infilling being calcite, minor siderite after calcite) and veined slumply interbedded calcutites, dolomites and minor calc-arenites.	Trace pyrite.											
160.0	160.50	LAMINAR CALC-LUTITE MINOR DOLOMITE. Very laminar to finely bedded grey calc-micrite and calc-lutite with minor dolomite. Birds-eyes, calcite infilled and averaging <2mm across sporadically. Bedding 45° to c.s. @ 160.3 m. Moderate to heavy stylolitization along bedding contacts.												



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
160.5	174.5	SOFT SEDIMENT DEFORMED CALCULITE, DOLOMITE, CALCARENITE. Dominantly soft sediment deformed grey, fine grained, massive calcutites (showing minor birds-eye and sparry filled lensoidal lites) interbedded with dark grey to black fine grained massive to weakly laminar dolomites, argillaceous, weakly pyritic interbedded with minor fossiliferous calcarenites. Bedding attitudes in general deformed due to soft sediment deformation. Zone weakly to moderately calcite veined. Very minor siderite. Interface between calcutite and dolomite heavily stylotized. Minor brecciation present. Bedding 38° to c.n. @ 169 metres.	Mnor pyrite.											
174.5	175.0	CAVITY - NIL CORE RECOVERY												
175.0	181.0	SLUMPY ARGILACEOUS DOLOMITE / SILTY CALCULITE. Slumpy textured, heavily foliated, load casted argillaceous laminar dolomite interbedded with light grey silty calcutite. Dolomite progressively becomes more abundant down-hole until almost entirely dolomitic. Dolomite is pyritic and weakly dolomitized. Minor calcite veins and veinlets rimmed by siderite. Bedding 40° to ca @ 178.7 m. Minor slickensiding with chlorite surfaces on movement planes.												
181.0	187.2	MASSIVE TO LAMINAR CALCULITE. Interbedded sequence of massive, birds-eyed' weakly dolomitized light grey calcutites with very laminar, finely bedded calcutites, calcarenites and minor dolomites. Moderate stylotization. Minor calcite veining. Bedding 36° to c.n. @ 183.4 m.												

450093

092



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS							
From	To				From	To	Length								
187.2	200.85	SLUMPED CALCULITE, MINOR DOLOMITE. Massive to weakly laminar grey, birds-eyed and occasionally pelletal calcutite interbedded with thin (<1.5cm) black argillaceous heavily stylolitized dolomites. Minor calcite veining. Tectonic breccia @ 195.4 ~ 10cm width containing host rock angular fragments set in a calcite minor siderite matrix. Unit has overall slumpy texture with nodular development.													
200.85	203.8	LAMINAR CALCULITE, DOLOMITE. Very finely bedded laminar light grey calcutites and dark grey to black dolomites. Minor stylolitization. Unit becomes predominantly dolomite downhole. Bedding 32° to calc @ 201.6m.													
203.8	213.7	MASSIVE DOLOMITE, MINOR CALCULITE. Dark grey massive, becoming laminar downhole, argillaceous dolomite with minor thin interbeds of grey laminar calcutites. Calcite healed tectonic breccia 206.4 - 207.6m. Minor skeletal fossil horizons in calcutites becoming more evident down hole along with increased evidence of slumping.													
213.7	258.0	DEBRIS FLOW BRECCIA. Chaotic sequence of debris flow breccias - angular to rounded fragments, rip up clasts, stromatopores, oolites, pellets minor coralline debris set in a black argillaceous dolomite fine grained stylolitized matrix. Fragments in breccia up to 10cm in width, however, generally finer grained and average less than 3cm width. Sections of breccia	Trace py. Trace St (yellow) 256.9 to 257.5m.												

450094

093



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
213.7	258.0	CON'T: comprised entirely of coarse grained pellets and oolites set in a skeletal fossil matrix with grey calcutite cement. Breccia is clast supported with matrix <15% of tot. vol. Minor siderite associated with calcite veining.												
258.0	263.6	SLUMPED MASSIVE CALCUTITE MINOR DOLOMITE. Grey slumped moderately soft sediment deformed massive calcutites with minor thin streaky, lenticular and nodular beds of dark grey coarsely crystalline dolomite. Interface between the two heavily stylolitized. Zone becomes progressively more slump brecciated downhole and grades into following unit over a couple of metres. Minor calcite veining.												
263.6	287.0	DEBRIS FLOW BRECCIA. Predominantly clast supported, coarse grained (< 5cm) debris flow (rip up clasts, angular to rounded fragments, oolites, minor corals) breccias with finer grained breccias generally < 3cm in width for fragments. Minor calcite veining. Minor dolomitization.	Trace pyrite.											
287.0	304.5	INTERBEDDED CALCUTITE MINOR DOLOMITE. Massive to weakly bedded grey, occasionally birds-eyed calcutites interbedded with dark grey to black finely laminar argillaceous heavily stylolitized and weakly pyritic dolomite. Minor calcite veining generally < 2mm width at high angle to bedding. Bedding: 31° to ca. @ 296.1 metres.	Trace pyrite.											

450095

094



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
304.5	308.3	SOFT SEDIMENT DEFORMED CALC-LUTITE MINOR DOLOMITE. Soft sediment deformed (slumpy) interbedded calcutite dolomite 75:25. Beds show formation of pellets due to deformation and/or slumping. Core very massive and becoming less deformed downhole, passing into next unit gradually.												
308.3	312.7	INTERBEDDED CALCUTITES/DOLOMITES. Massive grey, occasionally birds-eyed (312.0 - 312.7m) minor birds-eye sparry matrix - replaced by yellow sphalerite, calcutite interbedded with very minor, thin < 1cm width argillaceous and very pyritic dolomite. Minor calcite / carbonaceous filled veins.	Trace sphalerite - yellow, very pyritic dolomite.											
312.7	313.6	DEBRIS FLOW BRECCIA? Large angular to sub rounded rip up clasts and host rock (containing very fossiliferous sections - predominantly shelly) set in a matrix of minor dolomite and calc-lutite.												
313.6	359.6	SLUMP BRECCIATED CALCUTITE MINOR DOLOMITE. Sequence of interbedded massive, generally unfossiliferous calcutites and black massive to weakly laminar argillaceous dolomites. Sections of core are more slump brecciated than others - varying from mildly load casted and wavy bedded to intensely slumped with nodular and oolitic and minor debris flow breccias (330.5 - 331.9m) containing abundant coralline debris. Minor intervals in calcarenite and	Trace yellow sphalerite. Pyrite becoming abundant as thin stratiform layers within dolomites											

450096

095



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
313.6	359.6	CON'T : calcutite contain very fossiliferous skeletal debris and fine oolitic textures towards the base of the sequence. Core weakly calcite veined. Heavy stylolitization between dolomite and calcutite as well as around fragment boundaries.												
359.6	385.6	INTERBEDDED CALCUTITE, DOLOMITE Massive and laminar grey unfossiliferous to highly fossiliferous (shelly fragments, and whole shells) calcutites rhythmically interbedded with very laminar, pyritic, argillaceous dolomites. Contacts between rock types generally heavily stylitized. Minor zones show signs of soft sediment deformation. Bedding 22° to ca @ 368.3 m.	Abundant pyrite as thin layers parallel to bedding within dolomites.											
385.6	395.5	SLUMP BRECCIA Sequence of slumpy and brecciated shelly and birds-eyed grey calcutites with minor dolomites and thin < 1 m width intervals of debris flow breccias containing rip up clasts, fossil debris, and minor oolites. Minor calcite veining with trace sphalerite.	Trace sphalerite in calcite veins.											
395.5	398.5	MASSIVE TO WEAKLY BEDDED CALC- LUTITE MINOR DOLOMITE. Dark grey, massive to weakly laminar, pyritic unfossiliferous calcutite with thin (< 1cm) interbeds of black argillaceous dolomite. Contacts are heavily stylitized some of which are infilled by pink coloured sphalerite and minor diss. galeua. Tectonic breccia @ 397.5: 5cm in width with calcite matrix. Sequence becomes heavily dolomitized and contains abundant siderite at contact with mineralized sequence downhole.	Pink sphalerite of minor galeua in stylolites and as diss. fine blebs.											

450097 096



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
395.5	398.5	CON'T: Contact appears to be conformable. Bedding 25° to ca @ 396.7m												
398.5	399.5	Pb-Zn MINERALIZATION WITHIN SIDERITE DOLOMITE HOST. Layered coarse grained crystalline siderite, minor carbonaceous material, containing blebs and aggregates of fine grained galena and pink sphalerite, trace pyrite. Bedding 28° to ca @ 399m.	2% Pb-Zn as fine disseminations and aggregates of galena and pink sphalerite.	79748	398.5	399.5	1	20	215%	2700	13	70%		
399.5	430.4	BEDDED MUDDY CALCULITE AND MINOR DOLOMITE. Rhythmically bedded calcinites, dolomites, and minor shelly calcarenites becoming predominantly calcutite downhole. Sections of unit show weak signs of slumping (minor nodular texture + oncolites). Minor calcite veining, trace siderite. Sequence invariably contains finely disseminated pink sphalerite. Minor veinlets contain pink sphalerite and galena. Bedding 34° to ca @ 405.1 m, 30° to ca @ 424.4 m.	Minor sphalerite as disseminations and trace galena in veinlets. Pyrite associated with dolomite.											
				79729	429.5	430	0.5	10	1950	1400	4			
				79730	430	431	1	46	8.45%	3100	84			
				79731	431	432	1	8	340	350	<1			
				79732	432	433	1	36	2.75%	1.50%	39			
430.4	447.4	Pb (Minor zinc) IN SIDERITE DOLOMITE HOST. Coarsely crystalline siderite layered parallel to bedding and containing both fine grained speckled grey black dolomite, minor black shale bands (silicified?) and minor amounts of galena, trace sphalerite. Zone badly fractured in places, minor vugs, with minor calcite occurring on both footwall and hangingwall sides of mineralized body. Best intercepts lie between 430-434 m @ 3% Pb-Zn and 445-447 metres @ 4% Pb-Zn. Layering at 432.6 m - 33° to ca, 38° to ca @ 437.2 metres.	Thinly bedded, blocky and diss. aggregates of galena with trace to minor sphalerite within coarsely crystalline siderite and fine grained dolomites. 3% Pb-Zn 445-447 = 2m @ 4% Pb-Zn.											
				79733	433	434	1	34	2.55%	600	43			
				79734	434	435	1	8	510	490	<1			
				79735	435	436	1	8	4400	430	3			
				79736	436	437	1	6	120	720	<1			
				79737	437	438	1	32	8850	440	14			
				79738	438	439	1	6	1400	310	1			
				79739	439	440	1	8	169	820	<1			
				79740	440	441	1	6	90	410	<1			
				79741	441	442	1	6	260	1050	<1			
				79742	442	443	1	6	190	1000	<1			
				79743	443	444	1	8	540	1200	1			
				79744	444	445	1	8	940	880	1			
				79745	445	446	1	85	7.4%	3000	104			
				79746	446	447	1	14	1.08%	2800	6			
				79747	447	447.5	0.5	14	7600	4700	6			

450098 097



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn.		
447.4	452.0	WELL BEDDED CALCARENITES / CALC LUTITES / MINOR DOLOMITES. Well bedded shelly calcarenites (shelly dolos) massive to weakly laminar calcutites and black dolomites. Bedding 31° to ca @ 447.6 m. Moderate to heavy stylolitization at contacts and cross-cutting to bedding.												
452.0	465.6	SOFT SEDIMENT DEFORMED CALC LUTITE MINOR DOLOMITE. Slumpy textured, wavy bedded, deformed thinly interbedded calcutites and argillaceous dolomites. Mod calcite veining. Minor zones of birds-eye and stromatolites at 460.3m, 462.6m. Minor thin shelly horizons. Trace siderite veining.												
465.6	482.4	SEDIMENTARY BRECCIA. Sequence of polymictic sedimentary breccia, chaotic crudely layered assemblage of subrounded to ragged clasts from micro-clastic to 5cm width, comprised of grey weakly fossiliferous limestone, minor bioclastic calcarenites, colonial corals, bryozoa, in a matrix of brown black argillaceous dolomite. Mixture of clast and matrix support - Not chaotic breccia as no net bedding present. Minor siderite veining present with trace sphalerite and galena.	Trace sphalerite and galena in siderite veins.	91583	472	474	2	6	610	850	2	1600		
				91584	474	476	2	6	1450	770	2	5300		
				91585	476	478	2	6	600	960	2	1800		
				91586	478	480	2	6	280	740	2	1650		
				91587	480	482	2	6	140	420	2	480		
482.4	487.6	INTERBEDDED CALC LUTITE, DOLOMITE. Rhythmically interbedded massive grey calcutites and grey brown weakly laminar argillaceous dolomite. Argillite weakly foliated + streaky, weak stylolitization. Bedding 33° to ca @ 486.2 m.	Minor pyrite, trace sphalerite, galena.	91588	482	484	2	6	3300	570	3	2150		
				91589	484	486	2	10	1700	430	2	1550		
				91590	486	488	2	8	580	500	2	790		

450099 098



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
487.6	493.6	SLUMPY TEXTURED INTERBEDDED CALCULITE, DOLOMITE. Slumpy textured weakly brecciated, disturbed sequence of ragged nodular (oncaltic) fossiliferous (shelly debris) calculites in a dark grey argillaceous dolomite matrix. Minor calcite siderite veinlets.		91591	488	490	2	16	60	120	1	450
				91592	490	492	2	6	700	730	1	1100
493.6	513.2	RHYTHMICALLY BEDDED WEAKLY DEFORMED CALCULITE, DOLOMITE. Rhythmically interbedded weakly to highly fossiliferous (more fossiliferous downhole with increasing number of gastropods) grey weakly soft sediment deformed wavy bedded nodular textured, calcutite, bioclastic calcarenite and dark grey black thin heavily foliated, weakly hyaline argillaceous dolomite. Minor graded bedding in bioclastic calcarenites. Core moderately calcite veined. Bedding 27° to ca @ 507.9 metres.	Pyrite as blebs and stringers parallel to the foliation.	91593	492	495	3	8	2300	1450	2	1950
513.2	515.2	SEDIMENTARY BRECCIA Ragged clasts of infossiliferous grey limestone, stromatolactis, shelly and minor coral debris, weakly layered and set in a matrix of dark grey to black fine grained pyritic argillaceous dolomite.	Fine grained and blebby pyrite within dolomite.									
515.2	523.6	SLUMPY TEXTURED CALCULITE MINOR DOLOMITE. Slumpy textured light grey massive, birds eyed (minor stromatolactis) calcutite, wavy bedded, showing nodular texture interbedded with thin very wavy heavily stylolitized argillaceous dolomite. Zones have distinctive intervals of stromatolactis from 520.6-523.6m.										

450100

099



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
515.2	523.6	CON'T: Core weakly calcite veined.												
523.6	556.8	INTERBEDDED CALCULUTITE, DOLOMITE Well layered muddy grey unfossiliferous calc- lutites interbedded with bioclastic speckled calcareonites and black to dark grey argill- aceous dolomites. Argillaceous dolomites become more prominent down hole at the expense of clean limestone. Core shows some signs of soft sediment deformation, nodular development foliated contacts heavily stylolitized etc. Bedding 33° to ca. @ 526.5, 30° to ca @ 535.6 m.	Minor blebby py. Trace sphalerite (yellow)											
556.8	558.2	LAMINAR CALCULUTITE. Thinly laminated fine grained light grey calculutite minor dolomite. Bedding 27° to ca @ 557.6 metres.												
558.2	559.6	NODULAR CALCULUTITE. Light grey, nodular (on calcitic) limestone fine grained with minor recrystallization. - stromatolites? Fossil debris fairly common, abundant stylolites.												
559.6	569.1	SOFT SEDIMENT DEFORMED WEAKLY FOSSILIFEROUS CALCULUTITES. Fine grained, grey calculutites inter- bedded with thin, impersistent argill- aceous dark grey to black dolomite. Ragged clasts of stromatolites? 564.2 m.												
569.1	570.3	THINLY BEDDED CALCULUTITE. Fine grained light grey thinly laminated unfossiliferous calculutite. Tectonic breccias angular fragments set in a matrix of calcite and siderite occur as thin units												

450101

100

DRILLHOLE DATA

ZT-82-11

Location : 3602N:1374E

Declination : 45°

Azimuth : 090°

Total Depth : 87.9m

Assay Results

6 - 11	=	5.0m @ 3.5%	Pb + 2.7%	Zn + 24.6g/t	Ag
22 - 26	=	4.0m @ 1.08%	Pb + 1.06%	Zn + 9.8g/t	Ag
54 - 70	=	16.0m @ 3.0%	Pb + 2.1%	Zn + 14.0g/t	Ag
*57 - 59.5	=	2.5m @ 13.0%	Pb + 1.3%	Zn + 49.2g/t	Ag
82 - 83	=	1.0m @ 2.2%	Pb + 2.3%	Zn + 20.0g/t	Ag
85 - 86	=	1.0m @ 0.14%	Pb + 1.8%	Zn + 1.0g/t	Ag



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS					
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn	
PROJECT ZEEHAN - TASMANIA NO 7860		ELEVATION	COMMENCED 4-11-82		BORE HOLE SURVEY								
PROSPECT OCEANA.		DIP COLLAR - 45	COMPLETED 17-11-82		Depth	Dip	Bearing	Depth	Dip	Bearing	Depth	Dip	Bearing
CO-ORDINATES 3602 N 1374 E		CORE SIZE HQ	TOTAL LENGTH 87.90										
BEARING 090 6 037 M 048 T		LOGGED BY P.A.J.	ADD 10L MINDRILL DIAMOND DRILL										
0.00	3.50	ALLUVIAL GRAVELS AND DOLOMITE. Sequence of fluvio-glacial gravels overlying CW black argillaceous dolomites.		79710	2	3	1	14	9600	4700	6	24	
3.50	8.50	INTERBEDDED BROWN, GREY, MOTTLED C.W. LIMESTONE. Sequence of CW mottled grey, brown and olive coloured textureless argillaceous clays. Minor sulphidic smelting zones and relict pyrite possibly paralleling relict laminar bedding? Slightly weathered zones of galena aggregates and trace sphalerite = 8.00 metres.	Minor pyrite and fine grained aggregates of galena: 1-2% Pb-Zn 6-8.5 metres.	79711 79712 79713 79714 79715 79716	3 4 5 6 7 8	4 5 6 7 8 9	1 1 1 1 1 1	14 12 24 38 30 80	1600 1000 1000 3.75% 5.05% 8.40%	5500 3600 4800 2.50% 3.20% 3.10%	1 <1 3 34 24 38	16 12 28 28 36 95	
8.50	12.90	LAMINAR TO THINLY BEDDED CW LIMESTONE. Relict laminations and bedding planes cut core at \approx 40 to 45° to c.a. Fine layers of pyrite and galena/ trace sphalerite occur parallel to bedding. Minor brecciation textures? CW limestone composed entirely of grey to dark grey argillaceous clays.	Pyrite and galena/ sphalerite parallel to bedding? and as coarser grained aggregates = 3% Pb-Zn 8.5-12.0 metres.	79717 79718 79719 79720	9 10 11 12	10 11 12 13	1 1 1 1	30 26 20 22	3400 1600 1750 2800	1.30% 3.30% 7000 4600	12 15 5 6	90 1650 2.7% 2.5%	
12.90	14.00	MOTTLED H.W. SIDERITE BRECCIA. Mottled orange, black, brown, breccia containing HW siderite fragments with trace galena.	Minor galena 12.9 to 14.0 metres = 1.5% Pb.	79721	13	14	1	18	1.35%	7100	8	4.15%	
14.00	17.60	KARSTIC COLLAPSE BRECCIA. Moina formation rounded quartzite pebbles (pink coloured) set within highly argillaceous and carbonaceous dolomite matrix. Both pyrite and galena are observed as fine grained disseminations and aggregates. Sequence contains abundant fine grained quartz sand.	Trace galena and minor pyrite.	79722 79723 79724 79725	14 15 16 17	15 16 17 18	1 1 1 1	14 12 20 12	2000 3500 1.0% 1800	3300 560 6000 6800	4 4 5 3	300 150 570 2.5%	



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
17.60	26.40	MOTTLED ORANGE/BLACK CLAYS AND WEAKLY MINERALIZED SIDERITE. Mottled brecciated? orange and black CW Dolomite containing numerous horizons of HW siderite weakly galena (minor sphalerite) mineralized. Core very sulphide smelling. Mineralized siderite @ 18.9 - 20.4 m. (recovery = 20%) 21.9 - 23.4m (≥ 15% recovery) 24.9 - 26.4 m. (≥ 10% recovery).	Minor galena (trace sphalerite) and pyrite within sideritic host.	79726	18	19	1	22	6900	1.5%	8	1.15%
				79727	19	20	1	22	3600	2.0%	4	10.0%
				79728	20	21	1	28	300	3000	<1	2.1%
				79749	21	22	1	36	880	7600	3	1.85%
				79750	22	23	1	18	1.29%	6700	11	8.80%
				79951	23	24	1	16	1.26%	150%	11	8.80%
				79952	24	25	1	16	2600	7800	5	9.30%
				79953	25	26	1	18	1.54%	1.30%	12	7.90%
				79954	26	29	3	20	1500	4200	2	1.90%
				79955	29	30	1	20	920	1300	2	1.85%
		79956	30	31	1	20	85	150	1	3100		
26.40	48.90	GREY HW - CW LIMESTONE. Weakly mottled light grey to grey CW clays with minor relict HW fragments of massive calcinites and bioclastic calcarenites with minor dolomitization and minor disseminated galena throughout. Galena does replace certain fossil fragments @ 33.5 metres.	Trace galena.	79957	31	32	1	20	165	1100	2	1.40%
				79958	32	33	1	24	1100	2700	3	1.10%
				79959	33	34	1	20	4700	9600	5	2.20%
				79960	34	35	1	16	300	2000	6	1.10%
				79961	35	36	1	16	330	1300	4	9200
				79962	36	38	2	16	130	1200	2	1.00%
				79963	38	39	1	16	95	1100	1	6800
				79964	39	40	1	16	280	2500	1	1.75%
				79965	40	41	1	16	70	2300	1	1.10%
				79966	41	42	1	12	160	1650	1	1.50%
48.90	60.90	GALENA/SPHALERITE MINERALIZATION - SIDERITE/DOLomite HOST. Sequence of crudely layered (≈ 40° to ca.) finely grained vuggy grey crystalline dolomite. Vugs filled by cream coloured siderite and minor veining of siderite. Galena/sphalerite (pink) occurs as coarse grained aggregates and veinlets within dolomite host occasionally parallel to bedding. Bad recoveries from 59.4 - 60.9 m. ≈ 5-10%. Minor zones contain coarsely crystalline Dolomite with associated disseminated galena. Core very broken.	53.5 - 59.5 = 6m Est @ 5% Pb-Zn.	79967	42	43	1	14	210	1600	1	5400
				79968	43	44	1	16	50	1300	1	9800
				79969	44	45	1	12	32	280	1	6900
				79970	45	46	1	12	42	130	1	6100
				79971	46	47	1	10	46	175	1	8200
				79972	47	48	1	10	180	1600	1	2.05%
				79973	48	49	1	16	160	1100	1	3.20%
				79974	49	51	2	16	2800	3000	2	9.80%
				79975	51	52	1	12	1700	1900	2	9.90%
				79976	52	53	1	12	2900	1100	3	11.00%
				79977	53	54	1	22	5900	2200	5	10.20%
				79978	54	55	1	85	1.65%	6.2%	15	9.10%
				79979	55	56	1	10	9350	3000	6	8.40%
60.90	63.30	GREY/BROWN CW LIMESTONE/DOLomite. Massive brecciated CW grey, brown argillaceous limestone - dolomite.		79980	56	57	1	18	1.61%	1.3%	9	8.90%
				79981	57	58	1	44	3.65%	1.4%	18	8.80%
				79982	58	59.5	1.5	120	19.20%	1.20%	70	9.00%
				79983	61	62	1	22	6300	1.00%	6	5.40%
				79984	62	63	1	18	2900	3.80%	3	6.90%

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn.
63.30	72.90	GALENA/SPHALERITE MINERALIZATION - FINE GRAINED DOLOMITE HOST. Minor galena sphalerite (pink) occurs as fine grained disseminations and wispy veinlets within a fine grained sideritic veined and vugh infilled dolomite. Core very broken with poor recoveries from 68 to end of unit.	66.0-68.0m = 2m	79985	63	64	1	10	3300	1.60%	3	8.90%
			est. 2% Pb-Zn.	79986	64	65	1	18	3900	4.00%	3	11.20%
			79987	65	66	1	12	6300	1.60%	4	9.00%	
			79988	66	67	1	42	3.80%	1700	26	9.60%	
			79989	67	68	1	70	5.40%	5.00%	23	9.10%	
			79990	68	69	1	6	2400	3.30%	2	8.60%	
			79991	69	70	1	6	1300	2.60%	1	8.10%	
			79992	70	71	1	6	480	1.20%	1	6.20%	
72.90	81.00	CW AND HW BLACK-GREY LIMESTONE. CW black and grey argillaceous clays containing fossil debris and minor relict HW fragments of dolomitized (fine to medium grained) shelly limestone.		79993	71	74	3	10	700	1.30%	1	4.60%
			79994	74	75	1	16	150	1350	1	1.00%	
			79995	75	76	1	16	120	560	1	4400	
			79996	76	77	1	14	110	690	<1	3000	
			79997	77	78	1	14	310	3600	1	1.15%	
			79998	78	80	2	6	95	950	<1	4600	
81.00	83.50	SIDERITE VEINED AND INFILLED LEAD ZINC MINERALIZED LIMESTONE. Patches of coarsely crystalline pale cream coloured siderite and siderite veinlets containing pink sphalerite and galena set within a matrix of fine grained grey dolomitized limestone. Minor colloform banding in patches of siderite. Core badly broken.	81.0-83.0 = 2m	80000	80	81	1	16	870	4800	1	9400
			Est @ 2.5% Pb-Zn.	91551	81	82	1	12	4000	3200	4	7.9%
			91552	82	83	1	32	2.15%	2.25%	20	4.9%	
			91553	83	84	1	14	7400	5300	5	3.60%	
83.50	86.70	CW BLACK AND GREY LIMESTONE/DOL. CW sequence of black and dark grey argillaceous clays with minor ferruginous clasts and relict HW fragments of very fossiliferous bioclastic calcarenite.		91554	84	85	1	16	2800	4400	2	2.9%
			91555	85	86	1	30	1350	1.80%	1	3500	
86.70	87.90	HW TO MW SEDIMENTARY BRECCIA. Ragged clasts of coralline, stromatoporoid and oncolites and other skeletal debris set within a grey fine grained weakly argillaceous calcareous matrix. Minor calcite and siderite veining with associated minor galena / sphalerite / pyrite - trace chalc. pyrite ?? END OF HOLE	86.7-87.9m = 1.2m	91556	86	87.9	1.9	16	230	900	<1	2950
		Est @ 1% Pb-Zn.										

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DRILLHOLE DATA

ZT-82-12

Location : 3605N:1230E

Declination : 64°

Azimuth : 090°

Total Depth : 481.6m

Assay Results

24 - 27 = 3.0m @ 0.02% Pb + 1.82% Zn + 1.0g/t Ag
373 - 377 = 4.0m @ 11.6% Pb + 0.3% Zn + 80.3g/t Ag
*374 - 376 = 2.0m @ 18.6% Pb + 0.3% Zn + 131.5g/t Ag
380 - 384 = 4.0m @ 1.4% Pb + 0.5% Zn + 7.0g/t Ag



PROJECT ZEEHAN - TASHANIA No 7860	ELEVATION	COMMENCED 17-11-82	BORE HOLE SURVEY								
PROSPECT OCEANA	DIP COLLAR - 64° GE	COMPLETED 05-12-82	Depth	Dip	Bearing	Depth	Dip	Bearing	Depth	Dip	Bearing
CO-ORDINATES 3605 N 1230 E	CORE SIZE HQ, NQ	TOTAL LENGTH 481.6 m	60	65	034	229	63.5	040	349	62	042.5
BEARING 090 G 037 M 048 T	LOGGED BY PA.J.	ADD F52 MINDRILL DIAMOND DRILL	106	63	039	292	63.5	039	398	63	041.5
			146	62.5	040	334	62.0	042.5	443	63	043
									480	65	044.5

METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE No	METERAGE			ASSAYS					
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn	
0.00	16.60	CW GREY LIMESTONE		91558	6	7	1	26	460	4200	2	70	
		Sequence of completely weathered grey to black (relict laminations) argillaceous and sulphide smelling clays - cw limestone.		91559	7	8	1	30	65	800	<1	26	
				91560	8	9	1	26	170	1900	1	38	
				91561	9	10	1	24	340	8200	1	18	
				91562	10	11	1	32	90	560	<1	46	
16.60	31.80	MOTTLED ORANGE, GREY, BROWN C.W. LIMESTONE.		91563	11	12	1	20	70	3700	<1	20	
		Sequence of interbedded, mottled orange brown grey argillaceous cw limestone (clays) showing relict laminations and occasional zones of dolomitization (massive, dense, fine grained, silicified? oxidised brown rock) - 28.0m. Minor Hw calcite veining evident.		91564	12	13	1	14	140	2100	<1	20	
				91565	13	14	1	48	840	920	<1	26	
				91566	14	15	1	20	180	2600	1	22	
				91567	15	16	1	22	80	1800	1	5700	
				91568	16	17	1	18	150	2400	1	5600	
				91569	17	18	1	14	55	1700	1	1.30%	
				91570	18	19	1	14	730	4600	2	2.10%	
				91571	19	20	1	20	1400	6700	2	1.40%	
				91572	20	21	1	22	1350	7300	3	7800	
31.80	36.40	TECTONIC BRECCIA.		91573	21	22	1	22	920	7800	2	1.30%	
		Moderately to highly weathered tectonic breccia with ragged angular host rock fragments set in an argillaceous cement of dolomite and coarsely crystalline calcite. Minor siderite veining.		91574	22	23	1	12	620	3900	3	320	
				91575	23	24	1	14	240	5000	1	9900	
				91576	24	25	1	36	190	1.75%	1	4300	
				91577	25	26	1	32	90	1.40%	1	6600	
				91578	26	27	1	32	350	2.30%	1	1000	
				91579	27	28	1	12	65	2900	1	2.40%	
36.40	43.40	SEDIMENTARY BRECCIA.		91580	28	29	1	8	470	2200	2	1.60%	
		Sedimentary brecciated and deformed bi-clastic calcarenites and calcilitites with ragged fragments and clasts including some brachiopods set in a matrix of fine grained argillaceous dolomite. Core moderately to strongly calcite, minor siderite veined. Coarse layering evident.		91581	29	30	1	6	380	650	1	4800	
				91582	30	31	1	18	1600	1.40%	5	6.80%	
43.40	47.00	BRECCIATED CALCULITE MINOR DOLOHITE.											
		Weakly brecciated, massive, grey, unfossiliferous calcilitites interbedded with wispy											

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
43.40	47.00	CON'T: thin argillaceous dolomite. Core moderately to heavily stylolitized especially along bedding planes.																		
47.00	57.40	INTERBEDDED QUARTZOSE CALC-RUDITE AND CALCARENITES. Interbedded grey speckled fine grained calcirudites (conglomerates!) containing abundant rounded to ellipsoidal shaped quartz eyes further surrounded by recrystallized calcite lying in a weakly laminar calcareous arenite matrix, with medium grained calcutites, bioclastic calcarenites and minor wispy beds of argillaceous dolomite. Minor soft sediment brecciation and minor tectonic brecciation 55.4 - 55.6m (with secondary calcite, coarse grained cement). Minor siderite veining. Bedding 35° to c.a.																		
57.40	85.30	SLUMPY TEXTURED WEAKLY FOSSILIFEROUS CALCULUTITES. Sequence of slumped and soft sediment deformed weakly to unfossiliferous grey calcutites and minor argillaceous weakly brecciated dolomites. Moderate to Strong Stylolitization parallel to bedding planes infilled with black carbonaceous material. Zones of tectonism @ 60.6-64.6m, 65.5m, 74.6-76.2 (possible fault zone) associated with calcite and quartz veining trace siderite. Bedding 45° to ca @ 66.0m, 39° to ca @ 70.6m.																		
85.30	85.70	SHEAR ZONE. Coarse grained calcite, siderite infilled shear zone with minor argillaceous component. Shear @ ~ 15° to c.a.																		

450109

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS											
From	To				From	To	Length												
104.8	133.9	CON'T: poorly fossiliferous (minor encalites, corals, shelly debris). Sections of core show pelletal or nodular development. Core moderately to strongly calcite minor siderite veined. Abundant pyrite (fine grained) between 131.0-131.4 m.																	
133.9	136.0	FINE GRAINED QUARTZ CONGLOMERATE. Rounded to sub-rounded grey to white quartz pebbles varying from clast to matrix support and varying from 1mm to 6mm in diameter set within a sandy and mica rich matrix. Minor calcite veining, weak layering present.																	
136.0	148.6	SLUMPY TEXTURED BIOCLASTIC CALCARENITE/CALCLUTITE/DOLOMITE. soft sediment deformed and slump textured weakly brecciated, nodular calcarenite and argillaceous dolomite with bioclastic calcarenites (containing corals, gastropods, shelly debris, minor quartz pebbles) becoming more prominent downhole. Cavity 141.4 - 142.4 m. Very poor recoveries in broken and ferruginous (pyritic) zone 142.4 to 148.6 (Recoveries <10%).																	
148.6	153.5	LIGHT GREY WEAKLY FOSSILIFEROUS CALCLUTITE. light grey weakly fossiliferous, occasionally porous calcarenite with minor wavy laminae of argillaceous dolomite. Laminae heavily stylolitized and also stylolitization, cross cutting to bedding. Minor calcite veining. Minor pyrite on cleavage surfaces.	Minor pyrite on cleavage surfaces.																

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
153.5	163.6	TECTONIC BRECCIA - FAULT ZONE Black to dark grey clay zone containing abundant relict angular dolomitized fragments, siderite and other host rock fragments as well as fine grained pyrite fragments. Minor calcite veining.	Fine grained pyrite.											
163.6	175.6	SLUMPY TEXTURED SANDY BIOCLASTIC CALCARENITES AND DOLOMITES. Sequence of quartz sandy bioclastic calcarenites (shelly debris, gastropods) minor sandy calcutites and argillaceous dolomites, slumpy textured and showing nodular development. Sections of core weakly brecciated, matrix support. Minor thin zones of calcite filled tectonic breccias < 10cm in width. Some zones of porous (M.W) white due to leaching?												
175.6	180.2	TECTONIC BRECCIA. Angular and ragged fragments of argillaceous, sandy bioclastic dolomitic calcarenites and dolomites set in a matrix of coarsely crystalline white calcite. Minor siderite fragments.												
180.2	196.2	SOFT SEDIMENT DEFORMED CALCULITE, BIOCLASTIC CALCARENITE. Sequence of soft sediment deformed, nodular textured, weakly brecciated bioclastic (shelly) calcarenites, massive grey calcutites and minor wavy bedded argillaceous dolomites. Core extensively calcite veined with minor thin zones of tectonic brecciation. (calcite healed). Minor quartz component (rounded clasts) throughout unit. Bedding 40° to α 183.8m.												

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
196.2	202.6	LIGHT GREY LAMINAR CALCULOTITE Light grey weakly fossiliferous (shelly) calc-lutites cut by thin argillaceous black dolomite laminae. Core badly broken and in pieces NW to SW due to fault zone from 202.6 - 204.1 m. Bedding 40° to ca @ 195.5																		
202.6	204.1	FAULT ZONE Sequence of brecciated, calcite holed, minor siderite, NW sandy limestones. Zones of very poor recoveries.																		
204.1	220.6	INTERBEDDED SLUMP TEXTURED CALCULOTITES / DOLOMITES Nodular to pelletal slump textured predominantly unfossiliferous calcutites and argillaceous black dolomites. Minor zones of more laminar and less disturbed calcutite 218-219 m. Core extensively broken from 204.1 to 211.0 m. Minor calcite veining.																		
220.6	238.6	MASSIVE TO LAMINAR CALCULOTITES AND SOFT SEDIMENT DEFORMED CALCULOTITE MINOR DOLOMITE Sequence of interbedded light grey poorly fossiliferous (shelly) limestones containing minor wavy thin argillaceous dolomite laminae. Sections of more laminar to thinly bedded calcutites show signs of soft sediment deformation (nodular). Minor zones of stromatolites - 232.7 m. Bedding 47° to ca @ 229.6 m. Minor calcite veining.																		
238.6	259.6	SOFT SEDIMENT DEFORMED UNFOSSILIFEROUS CALCULOTITES / DOLOMITE Sequence of interbedded unfossiliferous	Minor pyrite on cleavage surfaces.																	



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
238.6	259.6	CON'T: grey and dark grey (muddy) limestone and bioclastic (shelly) calc arenites and minor black argillaceous dolomites. Sections of core show moderate soft sediment deformed and nodular to pelletal formation. Weakly calcite veined. Bedding 45° to ca. @ 239.6 m, 40° to ca. @ 257.6 m.																		
259.6	265.6	CRUSH ZONE Section of badly broken ground, moderately to heavily weathered, clayey, brecciated and slickensided laminar calcutites. Minor pug zones.																		
265.6	268.0	SLUMPY TEXTURED FOSSILIFEROUS CALCUTITE / DOLOMITE. Sequence of bioclastic calcarenites and weakly fossiliferous calcutites interbedded with thin (<1.5 cm) black argillaceous dolomites. Minor movement between dolomites and limestones and contacts moderately stylolitized. Bedding 29° to c.a. @ 267.9 m.																		
268.0	270.6	LAMINAR GREY UNFOSSILIFEROUS CALCUTITES. Sequence of laminar grey unfossiliferous occasionally speckled (birds-eyes) calcutites with interlaminations of green grey argillaceous dolomite.																		
270.6	285.8	THICKLY BEDDED CALCUTITE / DOLOMITE. Thickly bedded, generally unfossiliferous dark grey calcutites interbedded with from 1 to 3 cm wide argillaceous dolomite horizons. Contacts weakly soft sediment deformed and wavy.																		



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
270.6	285.8	CON'T: Minor zones showing nodular development. Prominent section of core 280.3 to 280.7m having algal breccia appearance with minor coral fragments. Minor siderite found replacing sections of algal laminae. This section of core having moderate to heavy calcite veining.																		
285.8	292.6	BLACK AND DARK GREY SHALEY AND ARGILLACEOUS DOLOMITES. Heavily foliated and cleaved sequence of black shaley and argillaceous dolomites. Laminar sections being partially replaced by siderite. Core badly broken due to carbonaceous component. Possible slumping or soft sediment deformation. Bedding 40° to ca. @ 289.9m.																		
292.6	337.5	SLUMPY TEXTURED POORLY TO UN-FOSSILIFEROUS CALCULITE. Streaked out and slumpy textured, nodular limestone predominates, interbedded with minor bioclastic shelly calcarenites and thin laminae of argillaceous dolomite. Core weakly calcite veined. Cavity 320.10 to 323.0m, 336.0 to 336.7 metres.																		
337.5	360.8	INTERBEDDED SPECKLED CALCARENITE / DOLOMITE / CALCULITE. Weakly soft sediment deformed, interbedded unfossiliferous grey calcinites, speckled bioclastic calcarenites and bioclastic argillaceous dolomite. Minor nodular development. Colonial coral fragment 355.9 and 358.4m. Minor siderite veining @ 359.0m. Bedding 43° to ca @ 348.7m, 36° to ca @ 358.6m.																		



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
360.8	367.0	BIODASTIC CALCREOUS SANDSTONE. Speckled grey brown, broken, soft sediment deformed, nodular bioclastic calcareous sandstone. Very poor recoveries core quite soft and friable. Siderite veined at 370m.												
367.0	372.1	BRECCIATED DOLOMITIZED LAMINAR LIMESTONE. Grey brown brecciated (sedimentary?) very laminar dolomitized and weakly sideritic limestone. Poor recoveries \approx 35%. Colonial coral fragment @ 370.4m.												
372.1	383.6	Pb-Zn MINERALIZATION WITHIN A SIDERIC DOLOMITE HOST. Very fine grained galena (trace pink sphalerite) occurs as thin laminations and as aggregates or clusters as well as veinlets set within a finely to coarsely crystalline argillaceous dolomite/auberite host which has been pervasively sideritized with coarsely crystalline cream sideritic. Where galena is abundant it tends to be banded at \approx 42° to e.a. From 375.6 to 379.2m siderite very abundant at expense of galena. From 379.2 to 380.0 there is minor interstitial galena, abundant siderite, from 380 - 381.6m siderite or auberite fills cavities in recrystallized dolomite, minor pink sphalerite is associated with the siderite - but no galena.	373-377 = 4m @ Est 10% Pb-Zn. 380-383.6 = 3.6m @ Est 2% Pb-Zn.	91597 91598 91599 91600 91601 91602 91603 91604 91605 91606 91607 91608 91609 91610 91611 91612 91613 91614	368 370 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388	370 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 6 6 38 105 430 14 12 10 16 16 8 8 34 8 20 6 22	260 330 3900 7.90% 16.60% 20.60% 1.13% 2300 1400 3800 1.46% 1.32% 990 2.60% 5000 430 130 850	1350 2600 1400 1400 3200 2200 4700 9300 2500 6200 3700 3600 4500 7000 5400 9500 1200 1950	1 1 2 40 75 200 6 3 2 3 6 2 12 3 1 1 1	2.7% 7.3% 8.0% 8.0% 6.5% 3.8% 4.2% 4.2% 9.00% 8.9% 7.6% 9.0% 9.0% 6.9% 8.4% 3.45% 3.7% 1.4%		
383.6	388.8	BRECCIATED DOLOMITIZED LAMINAR LIMESTONE. Grey brown, brecciated (sedimentary?) - with very rounded fragments of varying lithologies) laminar dolomitized argillaceous limestone. Poor recoveries. \approx 40%.		91615 91616	388 389 390	389 390	1 1	8 8	430 2400	3300 6600	1 2	3.0% 4.3%		

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
388.8	405.9	DOLOMITIZED GREY BROWN SLUMPED LIMESTONES. Floor recovers from a zone of HW to CW black brown and dark grey argillaceous clays and grey brown massive to laminar fragments of dolomitized limestone occasionally showing slump textures. Lot of core appears to be cave material from further up the hole prior to and including the mineralized sequence.		91767	391	393	2	210	2500	7000	3	4.5%
				91768	393	394	1	800	500	3000	3	2.25%
				91769	394	395	1	24	360	1000	1	2.5%
				91770	395	397	2	18	180	760	1	1.1%
				91771	397	398	1	16	150	3800	2	2.1%
				91772	398	400	2	10	550	5000	2	2.6%
				91773	400	402	2	10	670	4800	2	2.15%
405.9	481.6	SLUMPY TEXTURED BIOCLASTIC CALCARENITES, CALCLUTITES, DOLOMITES. Sequence of unfossiliferous grey calcarenites interbedded with minor bioclastic calcarenites (shelly; gastropods) and minor argillaceous dolomites. Core shows slumpy texture, nodular development. Core mod. to strongly calcite and siderite veined (438.6-442.6) generally in association with tectonic brecciation. Minor zones of clay infilling and leaching. Zone of stromatolites from 470.2 to 472.4 m. Bedding 30° to ca @ 423, 30° to ca @ 471.6 m. Major breccia @ 438.5 to 440.5 with associated calcite and siderite cement. Other breccias 460.8-462.7 and 469.6 - 469.9 m. END OF HOLE 481.60 metres.										

DRILLHOLE DATA

ZT-82-13

Location : 3685N:1250E

Declination : 60°

Azimuth : 090°

Total Depth : 346m

Assay Results

146 - 148	= 2.0m @ 0.28%	Pb + 0.03%	Zn + 110g/t	Ag
264 - 286	= 22m @ 7.5%	Pb + 0.55%	Zn + 65.9g/t	Ag
*272 - 286	= 14m @ 10.75%	Pb + 0.74%	Zn + 96.7g/t	Ag
*278 - 283	= 5.0m @ 21.16%	Pb + 1.62%	Zn + 205g/t	Ag
335 - 336	= 1.0m @ 0.6%	Pb + 2.2%	Zn + 3.0g/t	Ag
341 - 343	= 2.0m @ 1.0%	Pb + 1.5%	Zn + 34.0g/t	Ag



PROJECT ZEEHAN - TASMANIA NO 7860	ELEVATION	COMMENCED 12-12-82	BORE HOLE SURVEY			EASTMAN SINGLE SHOT CAMERA					
PROSPECT OCEANA	DIP COLLAR -60	COMPLETED 16-2-83	Depth	Dip	Bearing	Depth	Dip	Bearing	Depth	Dip	Bearing
CO-ORDINATES 3685 N 1250 E	CORE SIZE HQ, NQ, BQ	TOTAL LENGTH 346 m.	122	58	034	282	60	027.5			
BEARING 090 G 037 M 048 T	LOGGED BY PJS	ADD FBZ MINOR DRILL DIAMOND	218	60	030	290	59	026			
			250	60	029	317	59	026			

METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS														
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn										
0.00	43.60	MOINA FORMATION. Micaceous light grey to green nodular siltstone, HW to CW, shumpy textured, with minor argillaceous sandstone interbeds. Tectonic breccias and clay filled crush zones @ 13-16m, 23.3-24.5m, 28.3-29.5m, 33-36.3m. Bedding 20° to e.a. @ 43.5m.																				
43.60	67.00	INTERBEDDED MICACEOUS LAYERED AND MASSIVE SANDSTONES. Layered and massive yellow brown (minor grey) micaceous argillaceous sandstones, minor shales and quartzites, minor zones of nodular argillaceous sandstone. Tectonic breccias @ 53.2-53.45, 58.3-63.3 (minor malachite staining?). Bedding 15° to e.a. @ 48.00 metres, 10° to e.a. @ 65.0 m.	Trace Malachite?																			
67.00	80.60	QUARTZ CONGLOMERATE. - GORDON LIMESTONE. White quartz pebbles, with minor Moina fragments set in a quartz sandstone, muscovite minor argillite matrix. Core very broken. Sequence appears to be recrystallized and silica cemented.	Trace pyrite.																			
80.60	95.50	CW QUARTZ GRIT AND ARGILLITES. Yellow to light creamy grey quartz grit containing minor conglomerate fragments and quartz grit set within a clay matrix. Minor sections of HW grey green argillaceous fine sandstone.		91692	91	92	1	80	1000	770	1	150										
				91693	92	93	1	210	4200	780	1	70										
				91694	93	94	1	350	4300	720	3	110										
				91695	94	95	1	470	3700	1900	14	135										
				91696	95	96	1	90	1900	140	25	14										



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
95.50	98.00	MOTTLED CLAYSTONE. Mottled grey and crimson coloured claystone.		91697	96	97	1	28	2000	190	4	8
				91698	97	98	1	34	2300	40	18	6
				91699	98	99	1	80	3800	1700	7	48
				91700	99	100	1	160	5200	900	3	50
98.00	121.30	INTERBEDDED GREY BROWN AND CRIMSON COLOURED CW. CLAYSTONE. Interbedded mottled orange, brown, grey, and minor crimson coloured clays. Minor zones of ironstone (nodular) from 103-108 m and 115-118 m. Core recovery variable - average 25-30%.		91774	100	101	1	105	5000	170	2	26
				91775	101	102	1	48	1800	420	1	28
				91776	102	103	1	100	1400	1400	3	60
				91777	103	104	1	100	1600	1600	2	130
				91778	104	105	1	75	1900	1400	5	90
				91779	105	106	1	70	2900	3400	3	200
				91780	106	107	1	60	3100	5100	1	210
				91781	107	108	1	80	2200	3400	1	280
121.30	131.50	BROWN CLAYSTONE. Ferruginous yellow orange clays, last metre having minor nodules of massive brown goethite.		91782	108	109	1	42	1350	1200	1	50
				91783	109	110	1	70	2100	1300	1	200
				91784	110	111	1	80	2600	2250	1	490
				91785	111	112	1	120	2600	3400	1	900
				91786	112	113	1	70	3000	730	<1	65
131.50	140.50	GREY TO WHITE CLAYSTONE. Light gray to white claystones with minor zones of pale yellow claystones containing minor nodules of goethite.		91787	113	114	1	110	3200	1300	1	120
				91788	114	115	1	130	3300	1900	1	310
				91789	115	118	3	110	3700	7000	2	350
				91622	118	119	1	60	2400	2050	1	240
				91623	119	120	1	50	1300	1500	1	190
140.50	143.60	MOTTLED CLAYSTONE. Mottled brown, red, white claystone.		91624	120	121	1	60	1750	1750	1	480
				91625	121	122	1	90	2250	2350	1	1050
				91626	122	123	1	70	2150	3350	1	880
143.60	181.50	INTERBEDDED LAMINAR DARK GREY CLAYS AND BROWN SILICIFIED DOLOMITE. Laminar grey to black, argillaceous and sandy clays, showing intense deformation and folding (locally) interbedded with brown ferruginous? massive to weakly laminar and in part brecciated dense dolomite (silicified). 151.3-152.6 m, 152.8-166.0 m. Possible relict bedding laminations 37° to ca @ 150 m, 45° to ca @ 169 metres.	Abundant fine grained pyrite in dark clays.	91627	123	124	1	70	2700	3150	1	640
				91628	124	125	1	60	2050	1800	1	610
				91629	125	126	1	70	1900	2750	3	240
				91630	126	127	1	90	3500	3750	2	460
				91631	127	128	1	80	2500	3350	1	880
				91632	128	129	1	90	2400	3250	1	1000
				91633	129	130	1	80	2100	2650	1	1100
				91634	130	131	1	80	2500	3000	1	890
				91635	131	132	1	44	1550	960	1	420
				91636	132	133	1	60	1600	3100	2	960
				91637	133	134	1	60	1650	1500	2	220
				91638	134	135	1	95	2400	1200	2	210
				91639	135	136	1	150	3650	1150	7	160
				91640	136	137	1	65	1450	2550	3	540

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
181.50	212.80	INTERBEDDED BROWN SILICIFIED DOLOMITE BRECCIA? AND GREY CLAYS. Sequence of heavily brecciated, massive brown, fine grained dense silicified dolomites within a grey clay matrix. Minor vugs in dolomite breccia and minor quartz grains.		91641	137	138	1	165	2600	2900	2	1050
				91642	138	139	1	280	4050	1250	2	300
				91643	139	140	1	70	1300	300	15	110
				91644	140	141	1	34	1550	1000	2	200
				91645	141	142	1	30	1550	1050	3	330
				91646	142	143	1	80	2300	1700	3	330
				91647	143	144	1	70	1750	1500	3	210
				91648	144	145	1	60	1850	510	10	195
212.80	230.00	DARK GREY GRAPHITIC CLAYSTONE. Weakly laminar dark grey graphitic and argillaceous clays containing minor HW fragments of silicified grey dolomite. Core between 214.3-217.0m, either cavity or washed away during drilling.		91649	145	146	1	80	2050	760	6	260
				91650	146	147	1	280	2350	550	105	280
				91790	147	148	1	190	3200	110	115	80
				91791	148	149	1	38	9700	460	2	130
				91792	149	150	1	26	2300	3100	1	210
				91793	150	151	1	42	340	6100	1	50
				91794	151	152	1	10	40	3300	1	1.1%
230.00	242.00	HW to CW QUARTZ SILTSTONE AND INTERBEDDED SANDSTONE. Mottled grey and brown massive siltstones with brown interbeds of medium grained sandstone.		91795	152	153	1	16	150	4300	1	1.5%
				91796	153	154	1	10	220	5700	2	1.9%
				91797	154	157	3	6	110	1.05%	2	3.7%
				91798	157	159	2	6	340	1.65%	2	4.5%
				91799	159	163	4	8	80	1.75%	2	5.5%
				91800	163	166	3	10	34	2.40%	2	4.05%
242.00	253.30	INTERBEDDED GREY WEAKLY SILICIFIED SILTSTONES AND FINE GRAINED SANDSTONES. Sequence of siltstones and sandstones partially silicified with minor zones of brecciation and brecciated brown silicified dolomites towards the base of the unit.		91801	166	167	1	14	80	3200	2	3.15%
				91802	167	168	1	18	40	4000	1	1.6%
				91803	168	169	1	16	60	5400	2	2.4%
				91804	169	172	3	100	1850	2100	3	145
				91805	172	173	1	18	160	1.15%	1	7000
				91806	173	174	1	16	110	2.10%	1	1.1%
				91807	174	175	1	26	350	4500	2	140
253.30	255.30	BRECCIA - TECTONIC? Angular fragments up to 2cm in width set within a dark brown silicified argillaceous? dolomite matrix. Breccia is clast support.		91808	175	178	3	360	1900	2700	4	130
				91809	178	179	1	40	740	4500	3	125
				91810	179	180	1	30	390	0.85%	3	1.5%
				91811	180	181	1	20	270	1.10%	2	3.2%
				91812	181	182	1	6	75	1.45%	2	6.0%
255.30	286.90	Pb-Zn MINERALIZATION WITHIN SIDERITIC DOLOMITE HOST, 255.3-259.9m: coarse grained siderite, minor galena in silicified dolomite. 259.9-263.0m: matrix support breccia angular fragments of silicified dolomite.	264-286 = 22m Est @ 10% Pb-Zn	91813	182	183	1	6	34	1.00%	2	6.6%
				91814	183	184	1	8	60	7300	2	6.2%
				91815	184	185	1	8	110	6600	2	5.9%
				91816	185	186	1	20	200	6300	2	2.3%
				91817	186	187	1	18	110	7200	2	2200
				91818	187	188	1	18	70	7800	2	3.9%

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
255.3	286.9	CONT: Pb-Zn mineralized siderite in argillaceous silicified dolomite host. 263.0 - 273.5 m: Siderite veinlets and cavity fillings with medium to coarse grained argillaceous recrystallized dolomite, minor galena possibly replacing dolomite. 273.5m - 283.3m: Abundant galena with less dolomite. Siderite as cavity fillings and irregular patches. Galena and less sphalerite is coarse grained and shows evidence of shearing. 283.3 - 286.9m: Galena becomes less abundant and siderite and dolomite increases.		91819	188	189	1	20	50	4400	2	4.0%
				91820	189	190	1	14	28	2700	2	3.6%
				91866	190	191	1	16	120	3900	2	3.5%
				91867	191	192	1	12	120	5200	2	3.7%
				91868	192	193	1	10	140	6400	3	4.1%
				91869	193	194	1	10	160	5600	2	3.9%
				91890	194	195	1	10	70	3300	2	3.4%
				91871	195	196	1	8	55	3400	2	3.9%
				91872	196	197	1	12	300	3300	3	3.3%
				91873	197	198	1	10	160	4000	2	3.4%
				91874	198	199	1	8	120	2800	3	3.6%
				91875	199	200	1	14	290	2600	4	2.8%
				91876	200	201	1	14	120	2200	4	2.3%
		91877	201	202	1	10	300	3200	3	3.6%		
286.9	287.2	TECTONIC BRECCIA. Matrix supported, tectonic breccia? with very angular siderite, dolomite and calcite fragments set in a silicified argillaceous grey dolomite matrix.		91878	202	203	1	10	220	2800	3	2.9%
				91879	203	204	1	10	650	2000	4	3.8%
				91880	204	205	1	8	440	2600	3	3.8%
				91881	205	206	1	8	240	1250	3	3.5%
				91882	206	207	1	12	660	2300	3	2.5%
				91883	207	208	1	26	1200	4800	5	1.65%
287.2	304.8	MOINA FORMATION, - BRECCIATED SANDSTONE / SPHALERITE MINERALIZED. Brecciated Pelletal grey fine to medium grained sandstone, recemented matrix of siderite minor sphalerite. Minor tectonic breccias 293-295, 296-301.5, lot of Siderite veining in breccias. #48 - Minor redrilled mineralized rock. Bedding 40° to core 301.6m. Core very broken with poor recoveries.	Minor sphalerite.	91884	208	217	9	12	190	1400	3	2.95%
				91885	217	221	4	12	210	1150	2	1.05%
				91886	221	223	2	32	230	2800	2	7300
				91887	223	226	3	12	120	3100	2	1.4%
				91888	226	227	1	14	230	1300	2	1.65%
				91889	227	229	2	16	100	3000	2	1.45%
				91890	229	231	2	10	46	4200	2	2.4%
				91891	231	232	1	8	42	2600	1	1.4%
				91892	232	233	1	16	180	2000	2	1.4%
				91893	233	238	5	12	80	1950	1	1.3%
				91894	238	240	2	14	330	4600	3	2.6%
304.8	305.9	QUARTZ LITHIC CONGLOMERATE. Fine grained quartz, lithic, conglomerate with sandy matrix, minor muscovite. Minor galena and pyrite along fractures.	Minor galena/pyrite along fractures.	91895	240	242	2	12	250	2400	2	1.4%
				91896	242	244	2	20	380	6000	3	1.55%
				91897	244	245	1	14	460	1750	2	2.7%
				91898	245	246	1	20	770	2900	3	2.35%
				91899	246	247	1	16	540	2600	2	3.4%
				91900	247	248	1	18	330	4300	2	3.3%
				91901	248	249	1	14	290	5100	3	3.1%
		91902	249	250	1	8	290	4600	3	3.7%		

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METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn
305.9	325.0	INTERBEDDED GREY GREEN SILTSTONE MINOR SANDSTONE. Interbedded sequence of grey green slumpy textured micaceous siltstones and beige coloured medium grained sandstones. Minor quartz and siderite veining. Matrix support breccias from 324.7 to 325 with light brown angular sandstone fragments set in a grey siltstone matrix. Bedding 45° to ca @ 318m.		91903	250	251	1	10	300	2200	2	1.85%
				91821	251	252	1	18	205	1.1%	2	2.9%
				91822	252	253	1	12	420	9500	2	3.7%
				91823	253	254	1	14	860	7600	3	3.6%
				91824	254	255	1	10	2500	3000	3	7.2%
				91825	255	256	1	10	7650	3000	6	7.2%
				91826	256	257	1	10	1.55%	2600	10	7.4%
				91827	257	258	1	12	6450	1600	6	7.3%
				91828	258	259	1	10	6850	1250	6	7.9%
				91829	259	260	1	12	1.10%	1350	8	7.9%
325.0	328.6	INTERBEDDED GREY GREEN SHALES AND BROWN SANDSTONE. Interbedded grey green shales and fine grained beige sandstone. Bedding 35° to ca @ 326.5 m. Soft sediment deformation textures prominent.		91830	260	261	1	10	6200	2600	5	6.8%
				91831	261	262	1	12	4450	5300	5	6.1%
				91832	262	263	1	12	7950	3600	6	4.7%
				91833	263	264	1	6	1600	670	2	7.9%
				91834	264	265	1	10	5.15%	3100	23	8.2%
				91835	265	266	1	8	2600	2000	3	7.7%
				91836	266	267	1	8	1.22%	950	6	7.6%
328.6	329.2	POORLY SORTED QUARTZ LITHIC GRIT. Poorly sorted, white quartz fragments and honey brown sandstone fragments set within a micaceous sandy matrix. Crude layering at 35° to c.a.		91837	267	268	1	8	1.02%	460	7	7.6%
				91838	268	269	1	8	2.75%	690	15	7.9%
				91839	269	270	1	12	3.05%	1200	31	7.8%
				91840	270	271	1	14	7450	4500	6	7.5%
				91841	271	272	1	14	7650	5500	6	7.6%
				91842	272	273	1	16	2.10%	1950	14	7.4%
329.2	340.7	INTERBEDDED GREY GREEN SILTSTONE AND BEIGE SANDSTONE. Thinly bedded grey green siltstones and medium to fine grained beige sandstones with minor thick interbeds of massive brown well sorted medium grained sandstone. Minor soft sediment deformation. Bedding 33.8.5 m - 45° to ca. Minor quartz siderite veining - trace sphalerite.	Trace sphalerite in siderite veins.	91843	273	274	1	55	11.70%	1900	105	6.1%
				91844	274	275	1	75	7.75%	1550	75	7.6%
				91845	275	276	1	10	3.85%	590	23	7.9%
				91846	276	277	1	12	4.85%	460	25	7.7%
				91847	277	278	1	20	6.45%	740	36	7.1%
				91848	278	279	1	22	9.90%	1100	90	6.5%
				91849	279	280	1	12	19.30%	2600	200	5.8%
				91850	280	281	1	230	38.90%	5.6%	400	3.6%
				91851	281	282	1	24	16.00%	4100	135	7.4%
				91852	282	283	1	80	23.70%	1.70%	200	6.2%
				91904	283	284	1	12	3.75%	5300	20	7.1%
340.7	344.5	INTERBEDDED SILTSTONES AND SANDSTONES Similar to above units with patches of medium grained sandstone partially replaced by crystalline aggregates of pink sphalerite and minor pyrite. Zone	2cm wide galena sphalerite - massive at 341 m. Minor disseminated Sphalerite at 342.2%	91905	284	285	1	16	1.50%	7600	12	4.7%
				91906	285	286	1	6	2.80%	2300	19	5.9%
				91907	286	287	1	8	1500	1800	3	3.6%
				91908	287	288	1	8	1900	1800	3	4.2%
				91909	288	289	1	8	2200	1300	3	3.3%

450123

122



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS				
From	To				From	To	Length	Cu	Pb	Zn	Ag	Hg
340.7	344.5	CON'T : later cut by siderite veinlets carrying galena and pale yellow sphalerite. Core badly broken. Minor 2cm wide massive galena and sphalerite (sheared) intercept at 341 metres.		91910	289	292	3	8	1250	1700	2	31%
				91911	292	293	1	10	1100	1100	2	4.2%
				91912	293	294	1	10	1100	2400	2	4.4%
				91913	294	295	1	16	1.55%	3800	7	4.6%
				91951	295	296	1	30	6500	9000	5	3.8%
				91952	296	297	1	24	720	7800	2	2.95%
				91953	297	298	1	10	170	4600	1	1.45%
				91954	298	299	1	10	560	2200	1	2200
344.5	346.0	QUARTZ LITHIC GRIT. Coarse grained white quartz and honey brown sandstone, minor siltstone fragments set in a poorly sorted micaceous sand matrix.		91955	299	300	1	14	1200	1700	1	9300
				91956	300	301	1	30	8700	1.10%	9	1.15%
		END OF HOLE.		91957	301	302	1	16	1300	1950	2	4800
				91958	302	303	1	12	940	2900	2	5300
				91959	303	304	1	10	550	1350	2	7400
				91960	304	305	1	140	2500	2800	37	5200
				91961	305	306	1	18	4800	670	6	7100
				91962	306	307	1	8	580	480	2	1200
				91963	307	308	1	10	470	1050	2	2250
				91964	308	309	1	10	550	1800	2	4900
				91965	309	310	1	14	730	1700	3	3300
				91966	310	311	1	12	410	850	1	4000
				91967	311	312	1	8	430	1150	2	4700
				91968	312	313	1	110	490	700	2	4700
				91969	313	314	1	10	830	1200	2	3100
				91944	314	315	1	8	350	2900	1	7200
				91945	315	316	1	10	380	600	1	5500
				91946	316	317	1	6	260	540	1	5500
				91947	317	318	1	8	460	920	1	7600
				91948	318	319	1	6	340	580	1	5200
				91949	319	320	1	8	100	520	1	2200
				91950	320	321	1	8	450	1700	1	1450
				91970	321	322	1	195	1250	3400	8	3650
				91971	322	323	1	14	730	970	3	5300
				91972	323	324	1	26	750	1150	3	6700
				91973	324	325	1	70	580	1150	8	7700
				91974	325	326	1	140	270	1100	4	1750
				91975	326	327	1	14	50	580	2	750
				91976	327	328	1	60	180	300	2	1700
				91977	328	329	1	46	50	330	1	1100
			91978	329	330	1	12	46	470	1	680	

450124

123



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length	Cu	Pb	Zn	Ag	Mn		
				91979	330	331	1	24	60	260	1	880		
				91980	331	332	1	48	90	510	1	1300		
				91981	332	333	1	26	46	280	1	620		
				91982	333	334	1	24	44	140	1	850		
				91983	334	335	1	34	110	330	3	1200		
				91984	335	336	1	22	5700	2.20%	3	1.05%		
				91985	336	337	1	10	700	3100	2	8600		
				91986	337	338	1	22	560	1400	3	4400		
				91987	338	339	1	18	200	700	2	1200		
				91988	339	340	1	20	230	540	2	1500		
				91989	340	341	1	12	520	1100	2	5100		
				91990	341	342	1	155	1.90%	1.90%	63	1.10%		
				91991	342	343	1	20	1750	1.15%	5	1.30%		

450125

124

DRILLHOLE DATA

ZT-83-14

Location : 3670N:1575E

Declination : 61°

Azimuth : 090°

Total Depth : 172.2m * Pre-collar only

Assay Results

Not at target



PROJECT	ZEEHAN - TASMANIA NO 7860	ELEVATION		COMMENCED	15-2-83	BORE HOLE SURVEY			Eastman			Single shot			Camera		
PROSPECT	OCEANA.	DIP COLLAR	-61°	COMPLETED	04-3-83	Depth m	Dip	Bearing	Depth	Dip	Bearing	Depth	Dip	Bearing	Depth	Dip	Bearing
CO-ORDINATES	3670 N 1575 E	CORE SIZE	HQ, NQ	TOTAL LENGTH	172.20 m	97	61°	214°									
BEARING	090° G 217° M 228° T	LOGGED BY	P.A.J.	ADD IDL	MINDRILL	156	61½°	214°									
					DIAMOND DRILL												

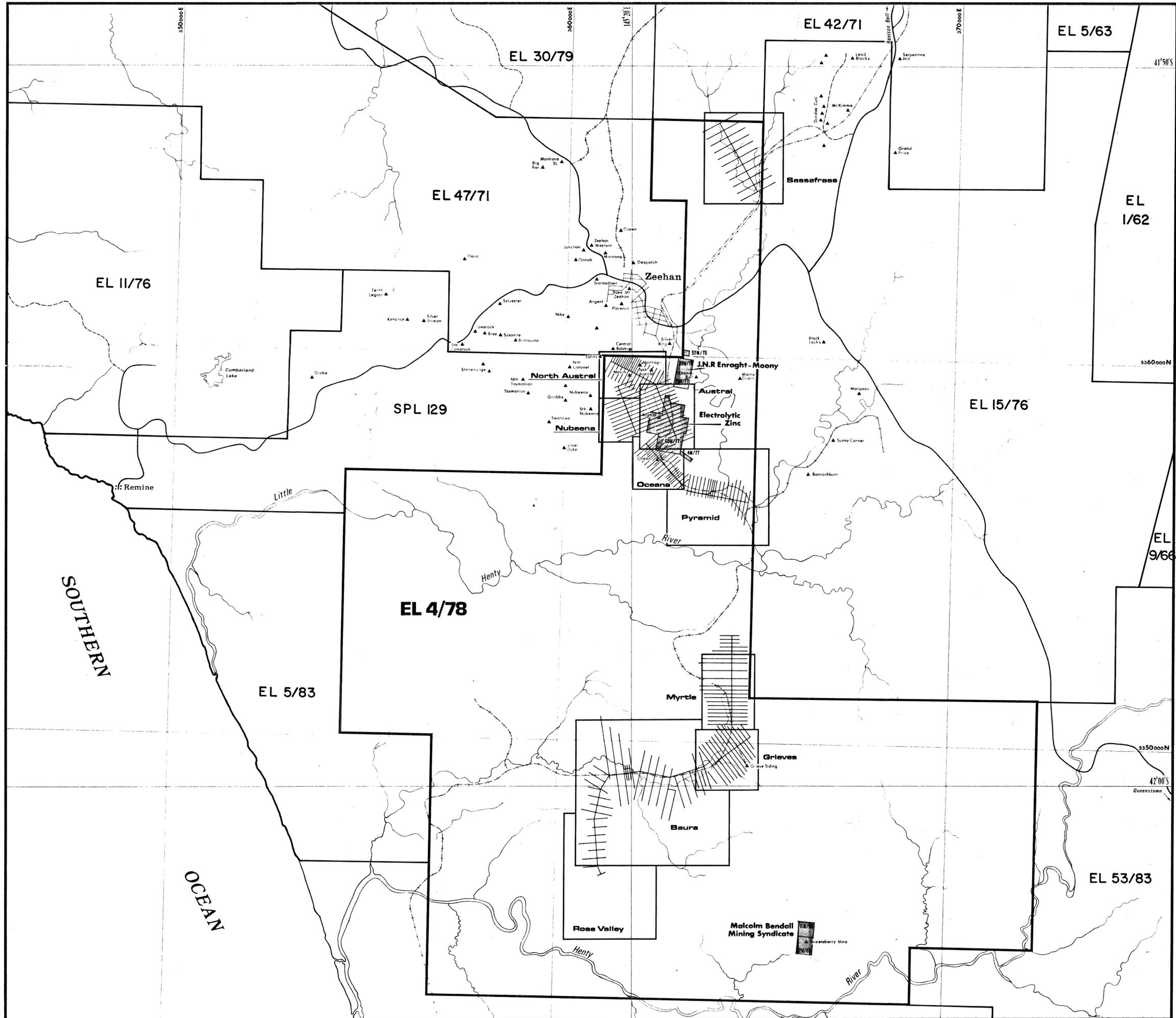
METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS									
From	To				From	To	Length										
0.00	24.00	CASING ADVANCER - TRICONE Argillaceous Clays.															
24.00	46.20	INTERBEDDED CALCUTITE/DOLOMITE/ MINOR CALCARENITE. Unfossiliferous grey calcutite, interbedded with thin (av < 1.5cm width) black argillaceous dolomites and grey speckled bioclastic calcarenite. Bedding contacts wavy and wackly soft sediment deformed. Minor calcite veining. Bedding 47° to ca @ 39.9m															
46.20	94.00	WEAKLY SILICIFIED AND DOLOMITIZED CLAY ZONE - MINE FAULT ?? Sequence of very poor recoveries (< 10%), drill washed most of core away (Fault Zone - clay matrix) Recovered fragments are silicified, weakly dolomitized fine grained muddy limestones and possibly argillaceous dolomites. Minor calcite veining.															
94.00	100.00	INTERBEDDED ARGILLACEOUS DOLOMITE / CALCUTITE. Soft sediment deformed argillaceous black dolomite interbedded with light grey sandy? calcutite. Minor soft sediment deformation and moderate stylolization.															
100.00	106.80	DEBRIS FLOW BRECCIA. Weakly layered, matrix support breccia with subangular to rounded fragments of host rock limestones and dolomites as well as conalline and stromatoporoid fragments set in a black fine grained speckled bioclastic argillaceous dolomite matrix. Layering 46° to ca @ 104.50m															



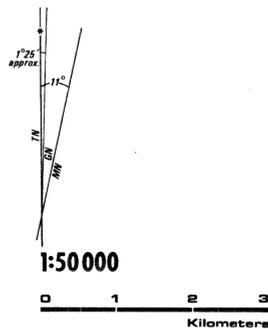
METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS						
From	To				From	To	Length							
106.80	110.40	LAMINAR CALCUTITE. Unfossiliferous light grey calcutites with dark grey argillaceous dolomite laminae. Bedding 45° to ca @ 109.4m. Minor 'birds-eye' structures filled by sparry calcite.												
110.40	115.20	DEBRIS FLOW BRECCIA. Angular to subrounded large and small fragments of limestone, dolomite, corals and other bioclastic debris set in an argillaceous black dolomite matrix. Clast boundaries heavily stylolitized. Minor calcite veining.												
115.20	132.00	INTERBEDDED FOLIATED MUDDY CALCUTITES AND DOLOMITES. Predominantly unfossiliferous dark grey muddy, foliated, calcutites interbedded with black argillaceous dolomites. Very minor thin bands of bioclastic calcarenites. Core weakly soft sediment deformed rather than foliated towards base of sequence. Bedding 30° to ca @ 129.5m.												
132.00	136.30	INTERBEDDED SLUMPY CALCUTITE/DOLOMITE/SEDIMENTARY BRECCIA. Unfossiliferous grey calcutite interbedded with black argillaceous dolomite and bioclastic (oolitic, minor coral, host fragments set in an argillaceous dolomite matrix) sedimentary breccia. Clasts vary from rounded to strip like fragments (rip-up clasts). Speckled texture to fine grained bioclastic debris in matrix.												
136.30	172.20	DEBRIS FLOW BRECCIA. Layered sequence of chaotic breccias, bioclastic lithic calcarenites and soft sediment deformed calcarenite and argillaceous dolomites.												



METERAGE		DESCRIPTION	MINERALIZATION	SAMPLE NO	METERAGE			ASSAYS												
From	To				From	To	Length													
136.3	172.2	CON'T.																		
		136.3 - 146.3 : Massive sequence of matrix support slump breccias with fragments of green shale, white and grey limestone, grey argillaceous dolomite and minor corals, stromatoproid fragments and other pelletal and bioclastic debris set in a light grey to black limestone and dolomite matrix - minor stromatolactis present.																		
		146.3 - 148.3 : Soft sediment deformed unfossiliferous grey muddy calcilites inter-bedded with black argillaceous dolomite. Wavy bedded due to soft sediment deformation.																		
		148.3 - 156.8 : As for interval 136.3 - 146.3 with increased content of coralline and stromatoproid debris and the breccia is more clast support with less argillaceous dolomite matrix. Minor calcite and siderite veining.																		
		156.8 - 165.2 : Matrix support sedimentary breccia containing rounded to sub-angular fragments of grey limestone and minor bioclastic debris set in a dark grey limestone matrix. Minor calcite veining, trace siderite. Minor tectonic breccia (61.5m).																		
		165.2 - 172.2 : Chaotic Debris Flow Breccia (Fossil Breccia). Mixture of matrix and clast support breccias with abundant fossiliferous detritus (corals - solitary and colonial, stromatoproids, shelly debris) and fragments of white to grey limestone and black dolomite within an argillaceous dolomite matrix. Core extensively sideritic (as replacements and thin veinlets) from 168 to end of hole.																		
		END OF HOLE 172.2 metres.																		



Location



Compiled from enlargement of Zeehan 1:63360 scale and Strahan 1:50000 scale geologic maps. Transverse Mercator Projection



Amoco Minerals Australia Company

E.Z. REPORT T 177 Fig. 2

Project	ZEEHAN	Nº A-78-60
Project Partner	84-2104	
Zeehan EL 4/78		
PROSPECT LOCATION		
Map Ref. ANG	K-55-5	Latitude 42°00'S Longitude 145°20'E
Surveyed	Date	Scale 1:50000
Drawn	S.F., R. Smyth-King	Date August 1981 Drawing Nº M80-1476

Report 353



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
bnd - brecciated	fer - ferruginous
clvd - cleaved	int - intense
shrd - sheared	wk - weak
calc - calcareous	v - very
carb - carbonaceous	pb - pebbly
lam - laminated	cb - cobble
xbd - cross bedded	tr - trace
tn bd - thin bedded	in bd - inter bedded
th bd - thick bedded	tbl - tabular
vs - veins, veining	frct - fractured

ROCK TYPE

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

MINERALOGY or ALTERATION

qz - quartz	py - pyrite
gls - gilsonite	sp - sphalerite
lim - limonite	cp - chalcopyrite
cid - carbonated	sl'd - silicified
c - calcite	

ORDER

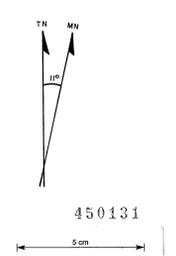
Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils.

e.g.
dk gy mg foss SST or gy calc SH py or pl gy LST sl'd.

TOPOGRAPHICAL

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

H = Hand Auger
 J = Jacob Auger
 P = Power Auger
 X = Sample collected, and analysed, but is probably of transported overburden.
 E = Excavator Sample



450131

ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: EL 4/78 ZEEHAN, TAS.
 84-2104.

PYRAMID GRID
BEDROCK GEOCHEMISTRY
Pb
 REPORT T 177 FIG. 35

Scale: 1:2500	Survey: I. MAT.	Revised:
Reference: M83-2053	Date: 21-11-'83	Ref. No.
Drawn: R. J. R.	Checked:	AO-532-0016



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
lf - light	dk - dark

TEXTURE

fg - fine grained	foss - fossiliferous
mg - medium grained	st - siliceous
cg - coarse grained	mic - micaceous
bd - brecciated	ferr - ferruginous
clvd - cleaved	int - intense
shd - sheared	wk - weak
calc - calcareous	v - very
carb - carbonaceous	pb - pebble
lam - laminated	cb - cobble
abd - cross bedded	tr - trace
tn bd - thin bedded	mbd - inter bedded
tk bd - thick bedded	tbl - tabular
vn - veins, veining	frct - fractured

ROCK TYPE

SST - sandstone	SLT - siltstone
LST - limestone	DLST - dolomite
BK - breccia	CGL - conglomerate
SH - shale	BSH - black shale
QZT - quartzite	LIM - limestone
GRIT - grit	CLY - clay
PUG - pug	GRA - gravel

MINERALOGY or ALTERATION

qt - quartz	sp - spathite
gn - galena	cp - chalcopyrite
lim - limonite	sl - silicified
cd - carbonated	
c - calcite	

ORDER

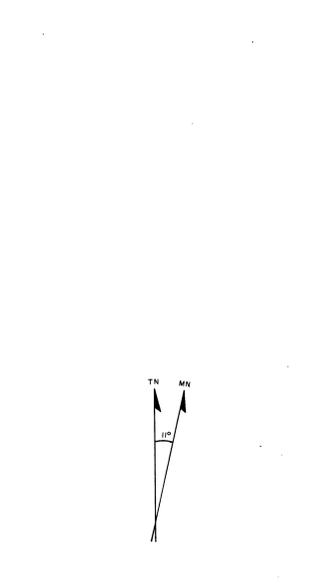
Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils

E.g. dk gy mg foss SST or gy calc SH py or pl gy LST s'd

TOPOGRAPHICAL

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

H = Hand Auger
 J = Jaco Auger
 P = Power Auger
 X = Sample collected and analysed, but is probably of transported overburden.
 E = Excavator Sample



450132

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: EL 4/78 ZEEHAN, TAS.

5 cm

PYRAMID GRID

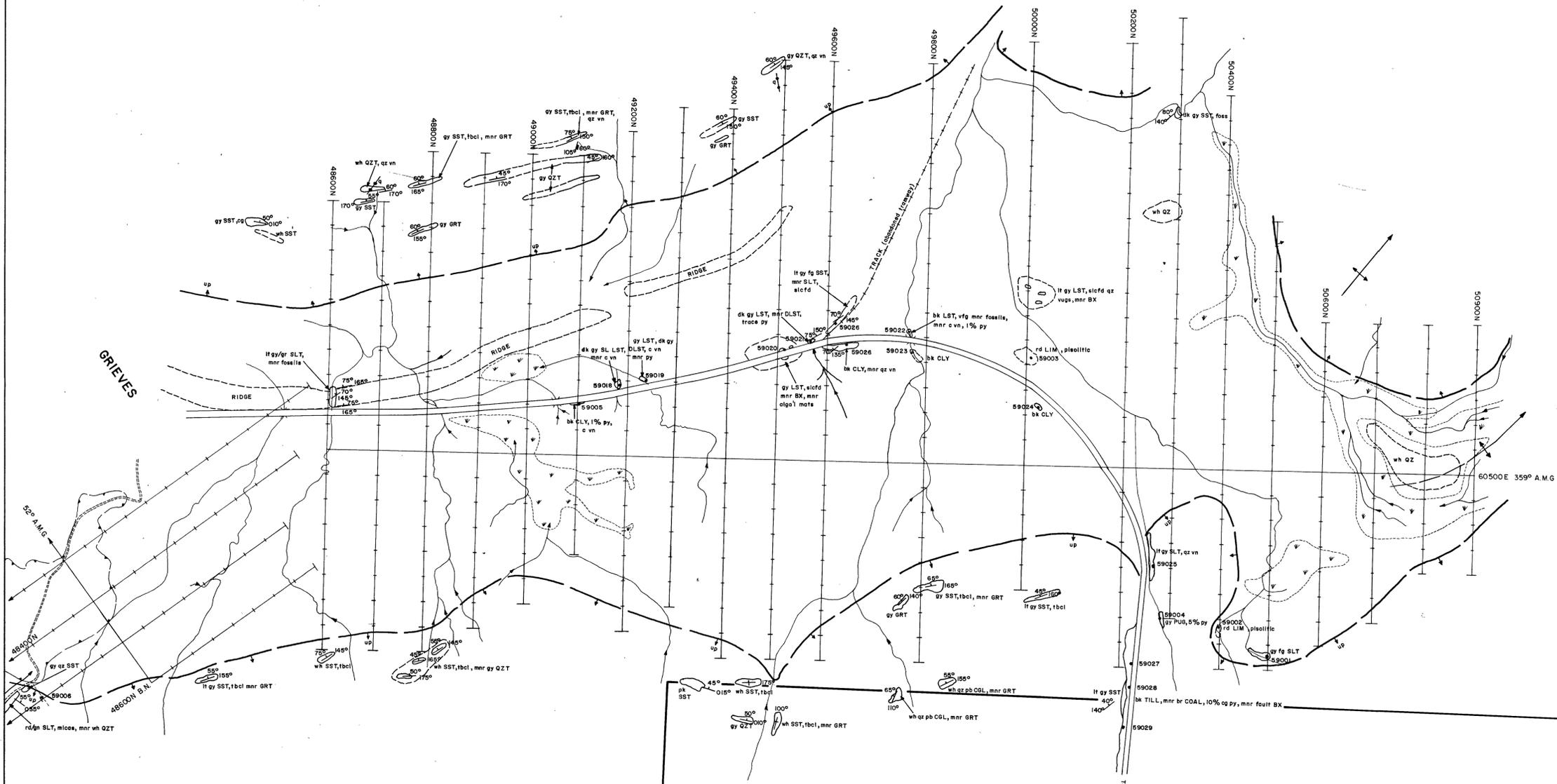
BEDROCK GEOCHEMISTRY

Zn

REPORT T 177 FIG. 4

Scale: 1:2500	Survey: I. MAT.	Revised:
Reference: M83-2053	Date: 21-11-83	Ref. No.
Drawn: R. J. R.	Checked:	AO-532-0015

E.L. 4/78 MYRTLE



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

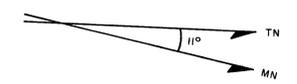
TEXTURE	
fg - fine grained	foss - fossiliferous
mg - medium grained	sil - siliceous
cg - coarse grained	mic - micaceous
bxd - brecciated	ferr - ferruginous
clvd - cleaved	int - intense
shrd - sheared	wk - weak
calc - calcareous	v - very
carb - carbonaceous	pb - pebble
lam - laminated	cb - cobble
xbd - cross bedded	tr - trace
tn bd - thin bedded	in bd - inter bedded
tk bd - thick bedded	tbcl - tubular
vn - veins, veining	frct - fractured

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

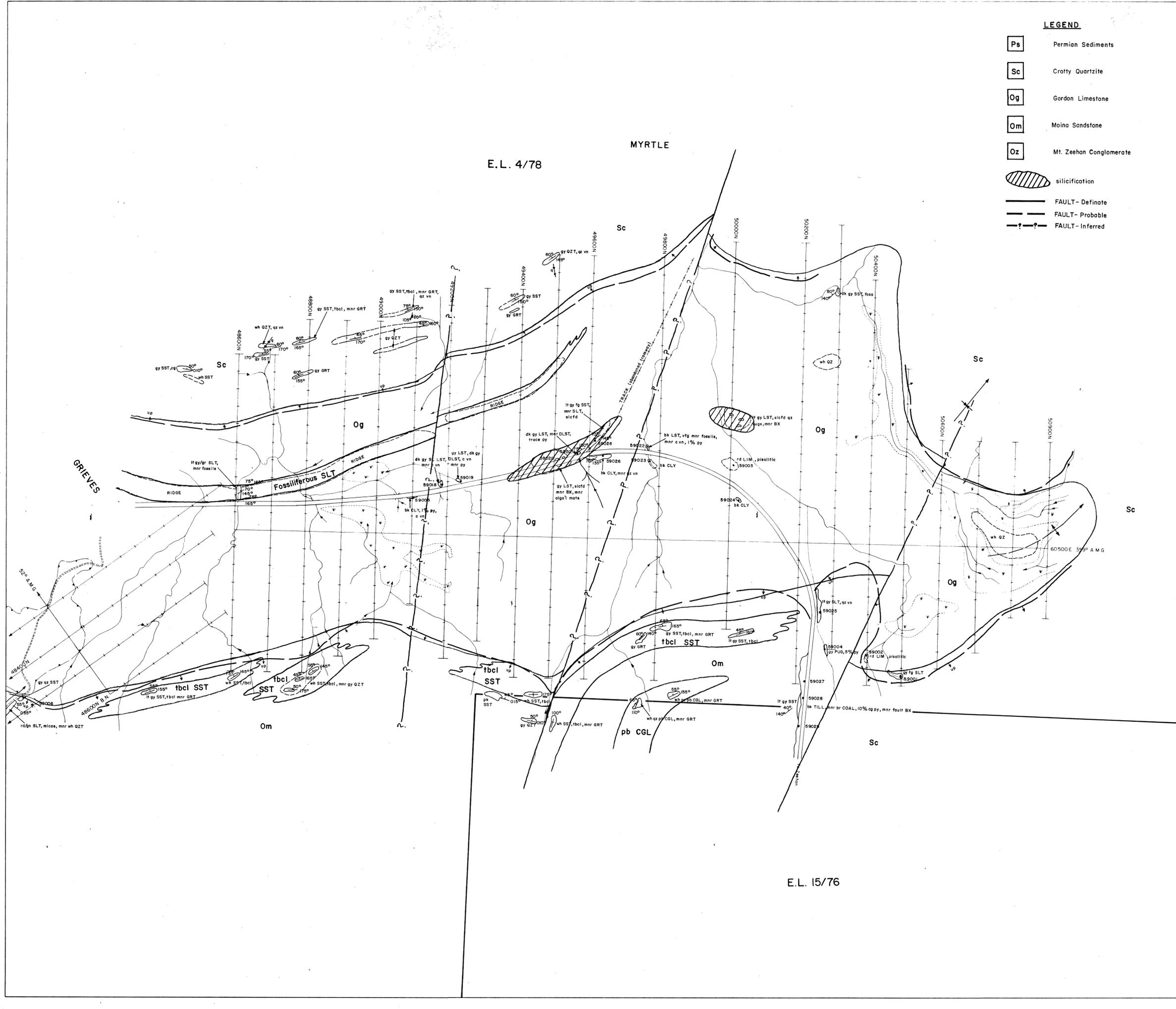
MINERALOGY or ALTERATION	
qz - quartz	py - pyrite
gn - galena	sp - sphalerite
lim - limonite	cp - chalcopyrite
cb'd - carbonated	si'd - silicified
c - calcite	

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 si'd.

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



ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: EL 4/78 ZEEHAN TAS.
 84-2104.
 5 cm
 MYRTLE GRID
 450133
 GEOLOGY (FACT)
 REPORT T 177 Fig. 5
 Scale: 1:5000 Survey: I. MAT. Revised:
 Reference: A-78-60B Date: 21-11-83 REF. No.
 Drawn: R. J. R. Checked: G. L. K. A1-532-0006



LEGEND

- Ps** Permian Sediments
- Sc** Crotty Quartzite
- Og** Gordon Limestone
- Om** Moina Sandstone
- Oz** Mt. Zeehan Conglomerate

- silicification
- FAULT-Definite
- FAULT-Probable
- FAULT-Inferred

LEGEND

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

- TEXTURE**
- fg - fine grained
 - mg - medium grained
 - cg - coarse grained
 - bxd - brecciated
 - clvd - cleaved
 - shrd - sheared
 - calc - calcareous
 - carb - carbonaceous
 - lam - laminated
 - xbd - cross bedded
 - tn bd - thin bedded
 - tk bd - thick bedded
 - vn - veins, veining
 - foss - fossiliferous
 - sil - siliceous
 - mic - micaceous
 - ferr - ferruginous
 - int - intense
 - wk - weak
 - v - very
 - pb - pebble
 - cb - cobble
 - tr - trace
 - in bd - inter bedded
 - tbcl - tubular
 - frct - fractured

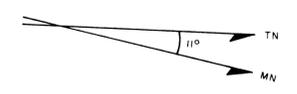
- ROCK TYPE**
- SST - sandstone
 - LST - limestone
 - BX - breccia
 - SH - shale
 - QZT - quartzite
 - GRIT - grit
 - PUG - pug
 - SLT - siltstone
 - DLST - dolomite
 - CGL - conglomerate
 - BSH - black shale
 - LIM - ironstone
 - CLY - clay
 - GRA - gravel

- MINERALOGY or ALTERATION**
- qt - quartz
 - gn - galena
 - lim - limonite
 - cbd - carbonated
 - c - calcite
 - py - pyrite
 - sp - sphalerite
 - cp - chalcopyrite
 - sid - 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 sid

TOPOGRAPHICAL

- cut grid lines
- roads
- tracks
- tramways
- power lines
- rivers, creeks
- swampy area
- 090° joint
- 090° joint - vertical
- 090° overturned
- 090° bedding
- 090° bedding - vertical
- quarries



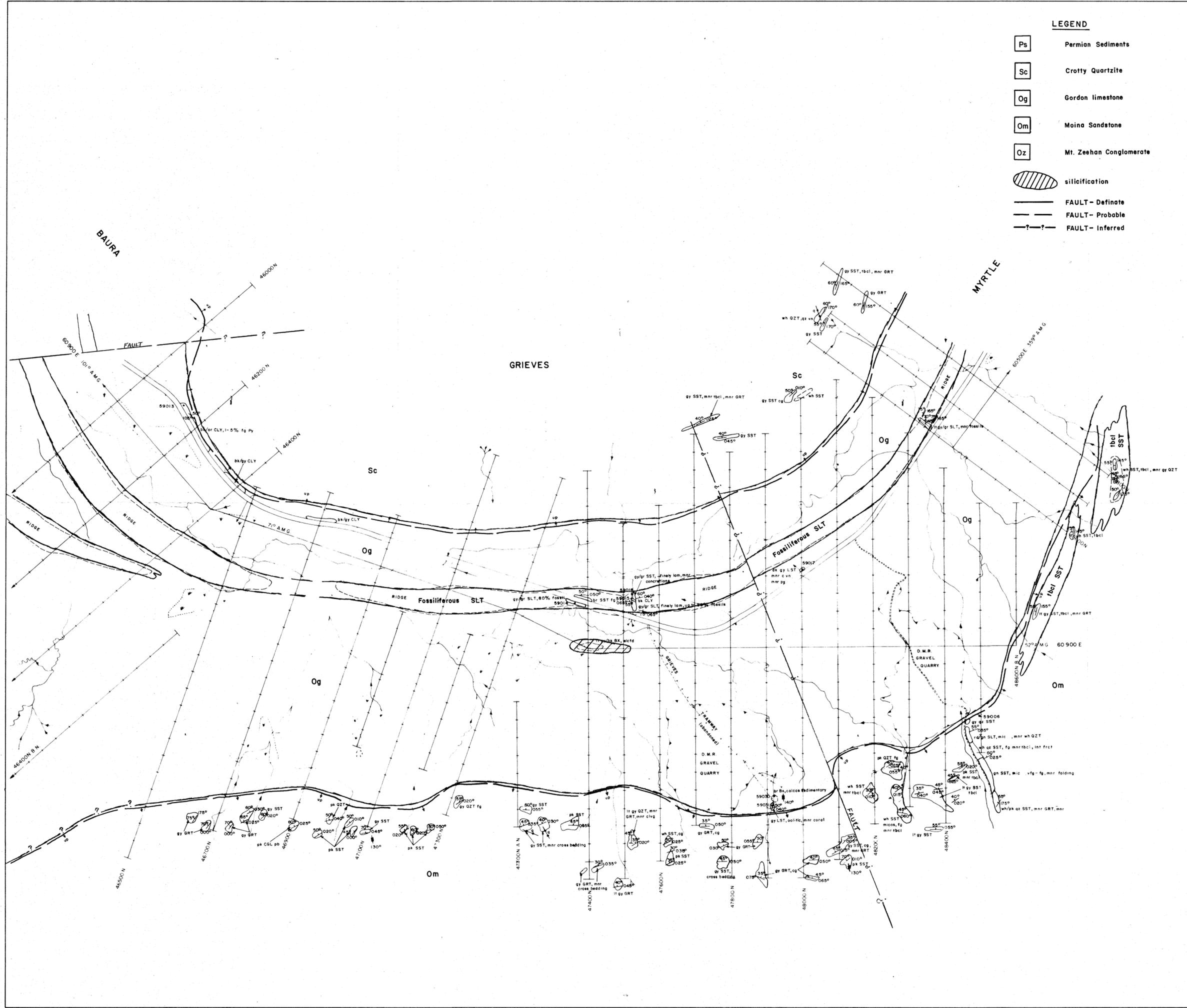
ELECTROLYTIC ZINC CO. OF ASIA LTD.
PROJECT: EL 4/78 ZEEHAN TAS.

5 cm

MYRTLE GRID
450134
GEOLOGY (INTERP)

REPORT T 177 Fig. 6

Scale 1:5000	Survey 1 MAT	Revised
Reference A-78-60B	Date 21-11-83	REF No
Drawn R.J.R.	Checked G.L.K.	AI-532-0052



LEGEND

- Ps Permian Sediments
- Sc Crotty Quartzite
- Og Gordon limestone
- Om Maina Sandstone
- Oz Mt. Zeehan Conglomerate
- silicification
- FAULT- Definite
- FAULT- Probable
- FAULT- Inferred

LEGEND

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

- TEXTURE**
- fg - fine grained
 - mg - medium grained
 - cg - coarse grained
 - bxd - brecciated
 - clvd - cleaved
 - shrd - sheared
 - calc - calcareous
 - carb - carbonaceous
 - lam - laminated
 - xbd - cross bedded
 - rn bd - thin bedded
 - tk bd - thick bedded
 - vn - veins, veining
 - foss - fossiliferous
 - sil - siliceous
 - mic - micaceous
 - ferr - ferruginous
 - int - intense
 - wk - weak
 - v - very
 - pb - pebble
 - cb - cobble
 - tr - trace
 - in bd - inter bedded
 - fbcl - tubular
 - frct - fractured

- ROCK TYPE**
- SST - sandstone
 - LST - limestone
 - Bx - breccia
 - SH - shale
 - QZT - quartzite
 - GRT - gneiss
 - PUG - pug
 - SLT - siltstone
 - DLST - dolomite
 - CGL - conglomerate
 - BSH - black shale
 - LIM - ironstone
 - CLY - clay
 - GRA - gravel

- MINERALOGY or ALTERATION**
- qtz - quartz
 - gn - galena
 - lm - limonite
 - cbd - carbonated
 - q - calcite
 - py - pyrite
 - sp - sphalerite
 - cp - chalcopyrite
 - s'd - 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 s'd

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

ELECTROLYTIC ZINC CO. OF ASIA LTD.

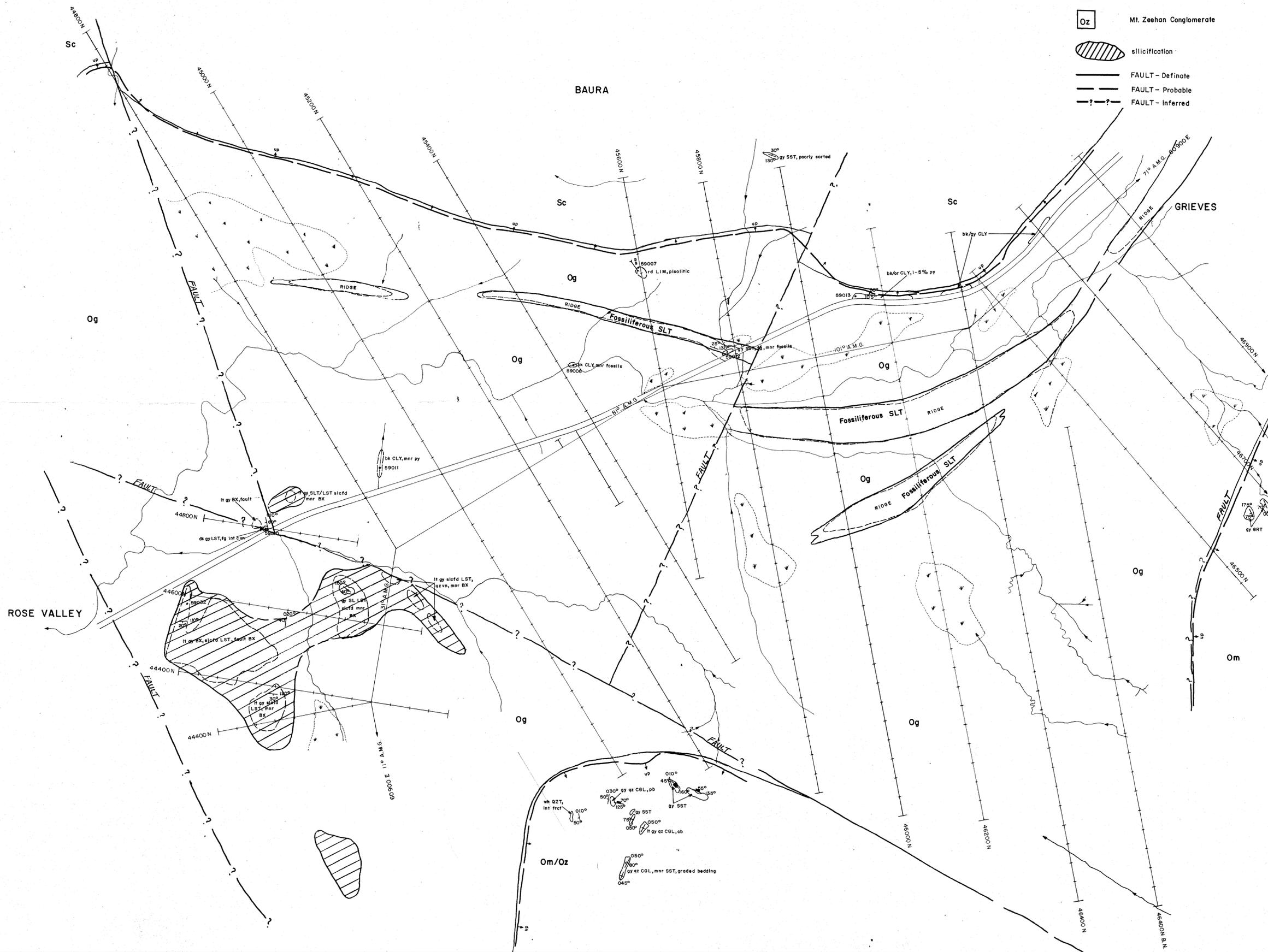
PROJECT: EL 4/78 ZEEHAN TAS.

5 cm

GRIEVES GRID
450136
GEOLOGY (INTERP.)

REPORT T 177 Fig. 8

Scale 1:5000	Survey I.M.A.T.	Revised
Reference A-78-60B	Date 16-11-83	REF No
Drawn R.J.R.	Checked G.L.K.	AI-532-0051



LEGEND

- Ps Permian Sediments
- Sc Crotty Quartzite
- Og Gordon Limestone
- Om Moina Sandstone
- Oz Mt. Zeehan Conglomerate
- silicification
- FAULT - Definite
- FAULT - Probable
- FAULT - Inferred

LEGEND

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

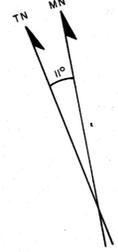
- TEXTURE**
- fg - fine grained
 - mg - medium grained
 - cg - coarse grained
 - bx - brecciated
 - clvd - cleaved
 - shrd - sheared
 - calc - calcareous
 - carb - carbonaceous
 - lam - laminated
 - xbd - cross bedded
 - tn bd - thin bedded
 - tk bd - thick bedded
 - vn - veins, veining
 - foss - fossiliferous
 - sil - siliceous
 - mic - micaceous
 - ferr - ferruginous
 - int - intense
 - wk - weak
 - v - very
 - pb - pebble
 - cb - cobble
 - tr - trace
 - in bd - inter bedded
 - tblc - tubular
 - frct - fractured

- ROCK TYPE**
- SST - sandstone
 - LST - limestone
 - BX - breccia
 - SH - shale
 - QZT - quartzite
 - GRT - grit
 - PUG - pug
 - SLT - siltstone
 - DLST - dolomite
 - CGL - conglomerate
 - BSH - black shale
 - LIM - ironstone
 - CLY - clay
 - GRA - gravel

- MINERALOGY or ALTERATION**
- qz - quartz
 - gn - galena
 - lim - limonite
 - cbd - carbonated
 - c - calcite
 - py - pyrite
 - sp - sphalerite
 - cp - chalcopyrite
 - sid - 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 sid

- TOPOGRAPHICAL**
- cut grid lines
 - roads
 - tracks
 - tramways
 - power lines
 - rivers, creeks
 - swampy area
 - 090° joint
 - 090° joint - vertical
 - 090° overturned
 - 090° bedding
 - 090° bedding - vertical
 - quarries



ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS. 84-2104

5 cm

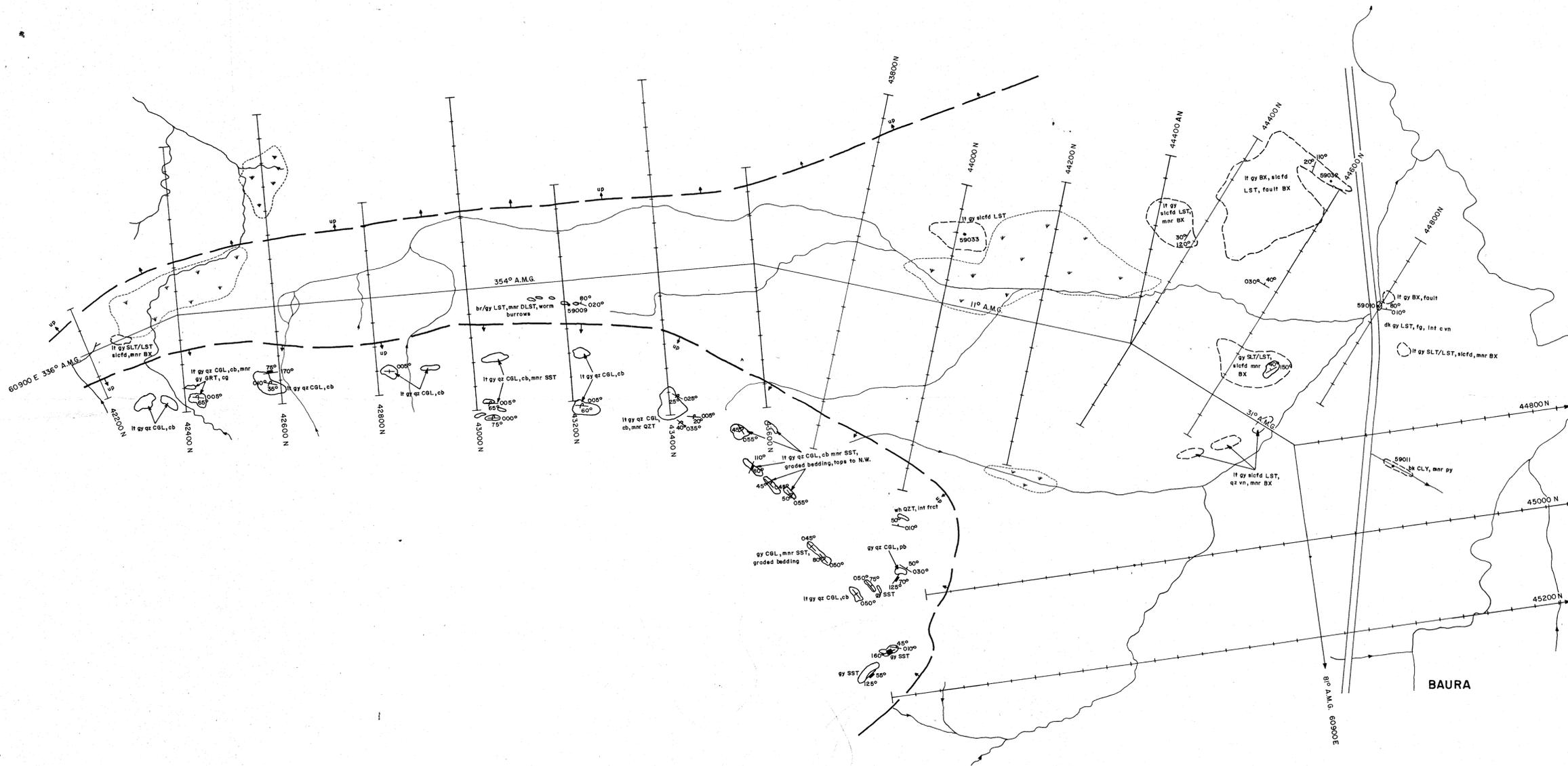
BAURA GRID
450138

GEOLOGY (INTERP)

REPORT T 177 Fig. 10

Scale: 1:5000	Survey: I. MAT.	Revised:
Reference: A-78-60B	Date: 16-11-'83	REF No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0050

ROSE VALLEY



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

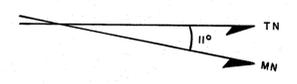
TEXTURE		
fg - fine grained		foss - fossiliferous
mg - medium grained		sil - siliceous
cg - coarse grained		mic - micaceous
bx - brecciated		ferr - ferruginous
clvd - cleaved		int - intense
shrd - sheared		wk - weak
calc - calcareous		v - very
carb - carbonaceous		pb - pebble
lam - laminated		cb - cobble
xbd - cross bedded		tr - trace
tn bd - thin bedded		in bd - inter bedded
tk bd - thick bedded		fbcl - tubular
vn - veins, veining		frct - fractured

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

MINERALOGY or ALTERATION		
qz - quartz		py - pyrite
gn - galena		sp - sphalerite
lim - limonite		cp - chalcopyrite
cbd - carbonated		si'd - silicified
c - calcite		

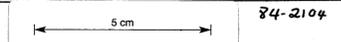
ORDER
 Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils.
 e.g.
 dk gy mg foss SST. or gy calc SH py. or pl gy LST si'd.

TOPOGRAPHICAL		
cut grid lines	— 090°	joint
roads	— 090°	joint - vertical
tracks	— 090°	overturned
tramways	— 090°	bedding
power lines	— 090°	bedding - vertical
rivers, creeks		quarries
swampy area		



ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS.



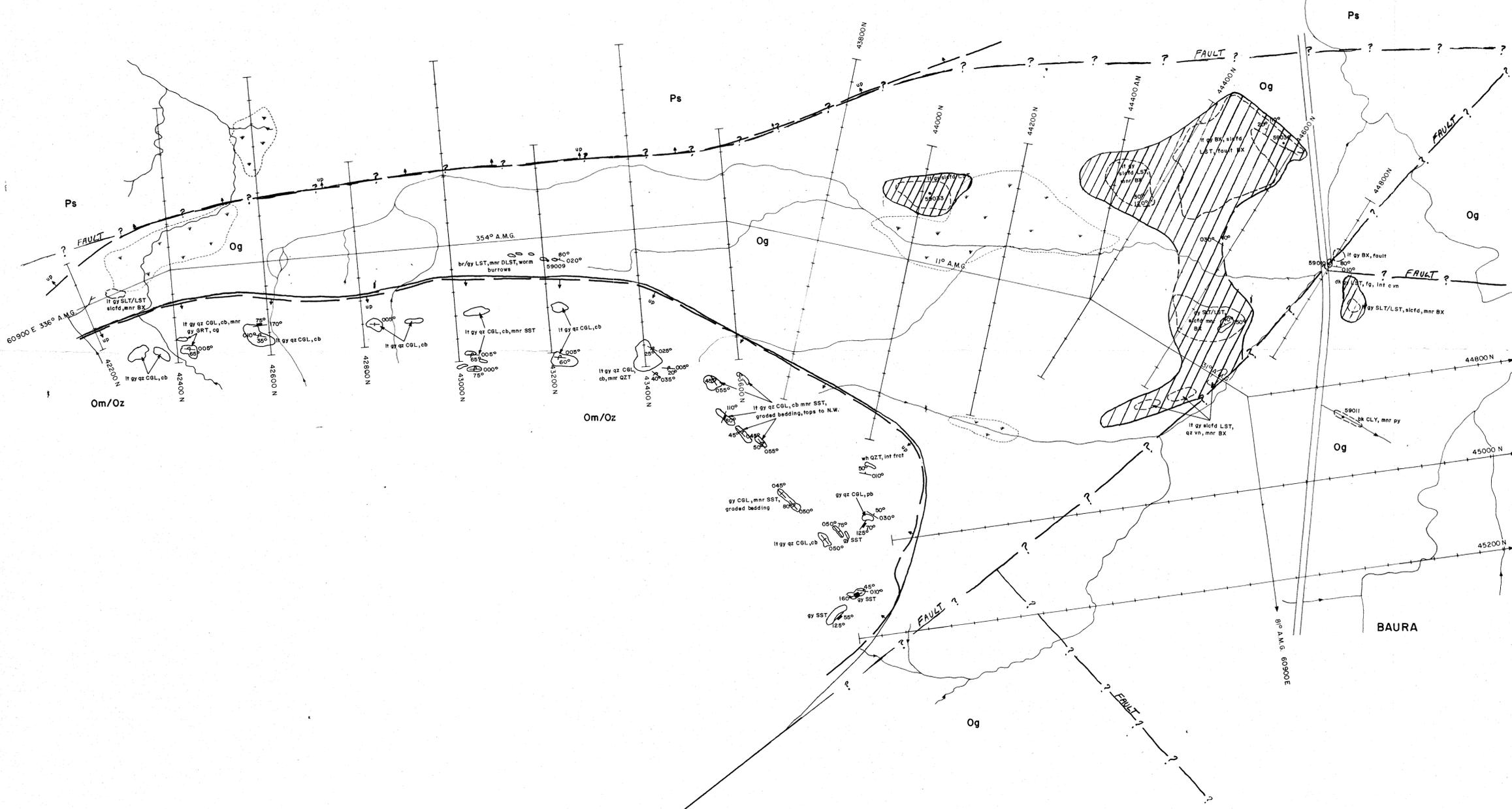
ROSE VALLEY GRID

GEOLOGY (FACT)
 450139

REPORT T177 Fig. 11

Scale : 1:5000	Survey: I.MAT.	Revised:
Reference: A-78-60B	Date: 16-11-83	REF. No.
Drawn: R.J.R.	Checked: G.L.K.	AI-532-0003

ROSE VALLEY



LEGEND

- Ps Permian Sediments
- Sc Crotty Quartzite
- Og Gordon Limestone
- Om Maina Sandstone
- Oz Mt. Zeehan Conglomerate



- FAULT - Definite
- FAULT - Probable
- FAULT - Inferred

LEGEND

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

- TEXTURE**
- fg - fine grained
 - mg - medium grained
 - cg - coarse grained
 - bxd - brecciated
 - clvd - cleaved
 - shrd - sheared
 - calc - calcareous
 - carb - carbonaceous
 - lam - laminated
 - xbd - cross bedded
 - tn bd - thin bedded
 - tk bd - thick bedded
 - vn - veins, veining
 - foss - fossiliferous
 - sil - siliceous
 - mic - micaceous
 - ferr - ferruginous
 - int - intense
 - wk - weak
 - v - very
 - pb - pebble
 - cb - cobble
 - tr - trace
 - in bd - inter bedded
 - tblc - tabular
 - frct - fractured

- ROCK TYPE**
- SST - sandstone
 - LST - limestone
 - Bx - breccia
 - SH - shale
 - QZT - quartzite
 - GR - granite
 - PUG - pug
 - SLT - siltstone
 - DLST - dolomite
 - CGL - conglomerate
 - BSh - black shale
 - LIM - limestone
 - CLY - clay
 - GRA - gravel

- MINERALOGY or ALTERATION**
- qt - quartz
 - gn - galena
 - lm - limonite
 - cbd - carbonated
 - c - calcite
 - py - pyrite
 - sp - sphalerite
 - cp - chalcopyrite
 - sil - 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 sil

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



450140

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS. 84-2104

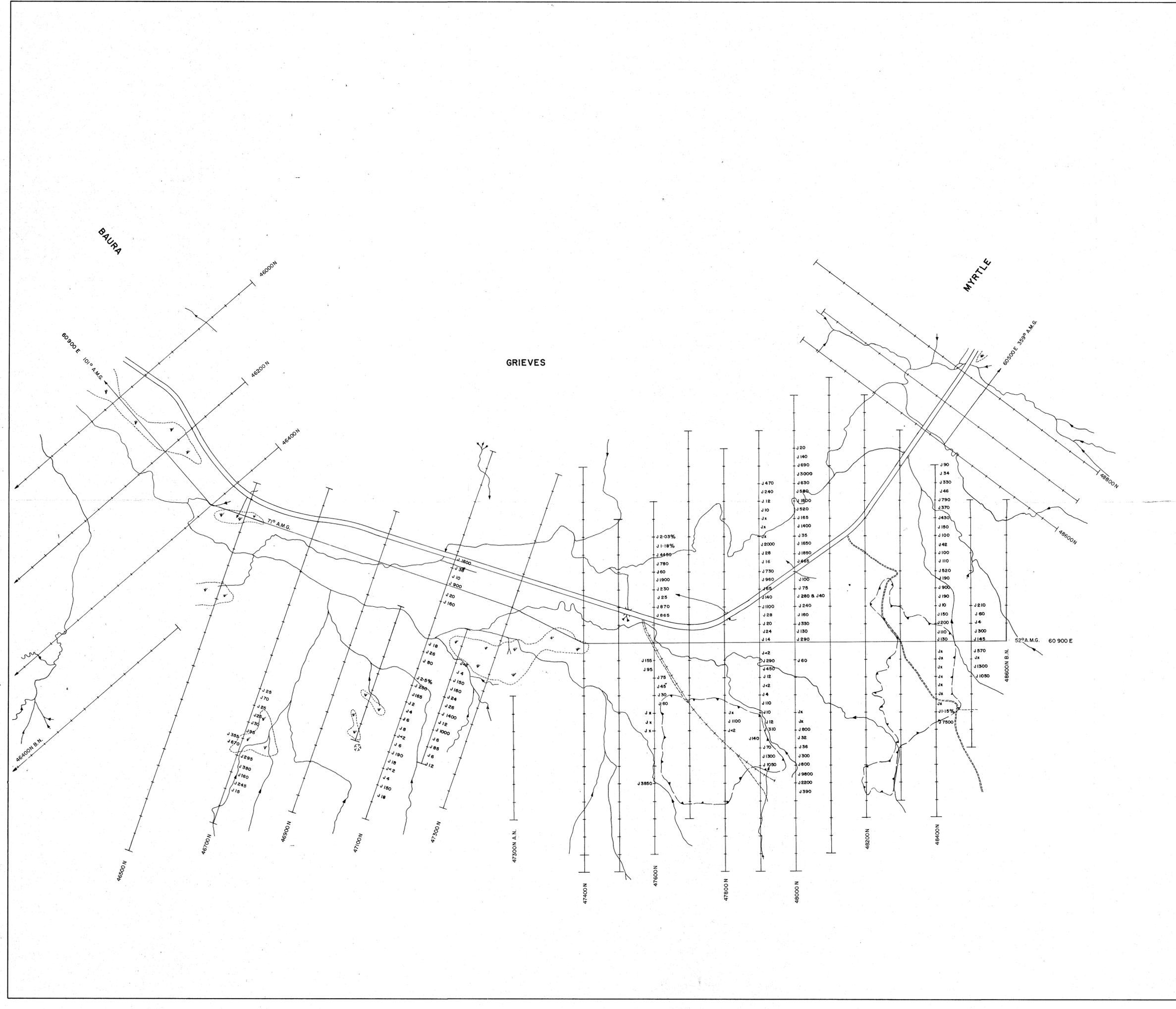
5 cm

ROSE VALLEY GRID

GEOLOGY (INTERP)

REPORT T 177 Fig. 12

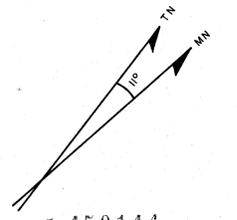
Scale: 1:5000	Survey: I.M.A.T.	Revised:
Reference: A-78-60B	Date: 16-11-83	REF. No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0049



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

H = Hand Auger
 J = Jacro Auger
 P = Power Auger
 X = Sample collected, and analysed, but is probably of transported overburden.



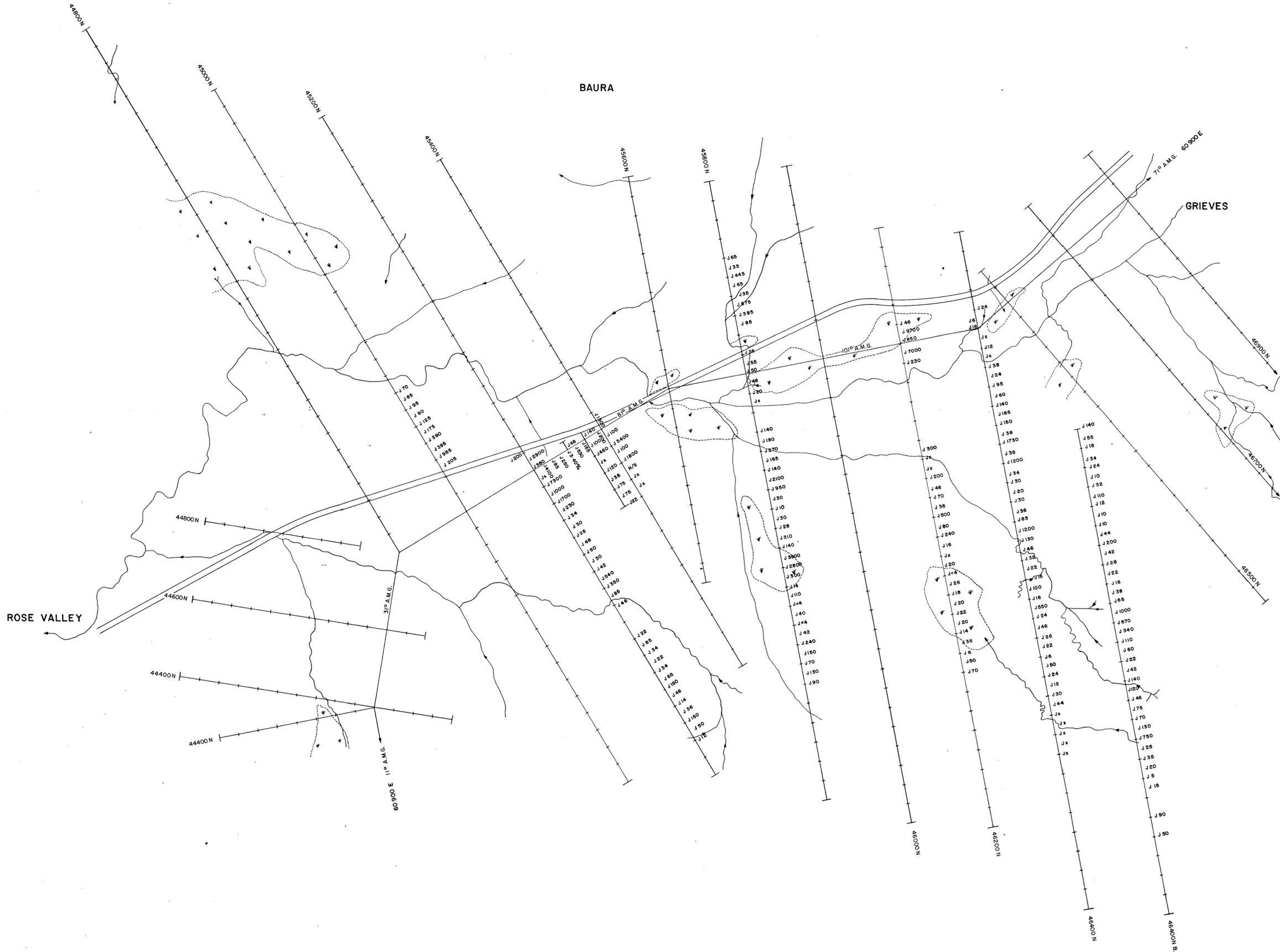
450144

ELECTROLYTIC ZINC CO. OF ASIA LTD.
 PROJECT: EL 4/78 ZEEHAN TAS.
 5 cm
 84-2104
 GRIEVES GRID
 BEDROCK GEOCHEMISTRY
 Zn
 REPORT T 177 Fig. 16

Scale : 1:5000	Survey : I.M.A.T.	Revised:
Reference: A-78-60B	Date : 16-11-83	REF. No.
Drawn : R. J. R.	Checked : G. L. K.	AI-532-0011

BAURA

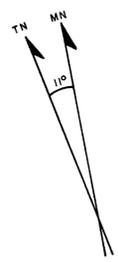
GRIEVES



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

- H = HAND AUGER
- J = Jacro Auger
- P = Power Auger
- X = Sample collected, and analysed, but is probably of transported overburden.



ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS.

5 cm

BAURA GRID
450145
BEDROCK GEOCHEMISTRY

Pb

REPORT T 177 FIG. 17

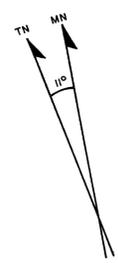
Scale : 1:5000	Survey: I. MAT.	Revised:
Reference: A-78-60B	Date: 16-11-'83	REF No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0010



LEGEND

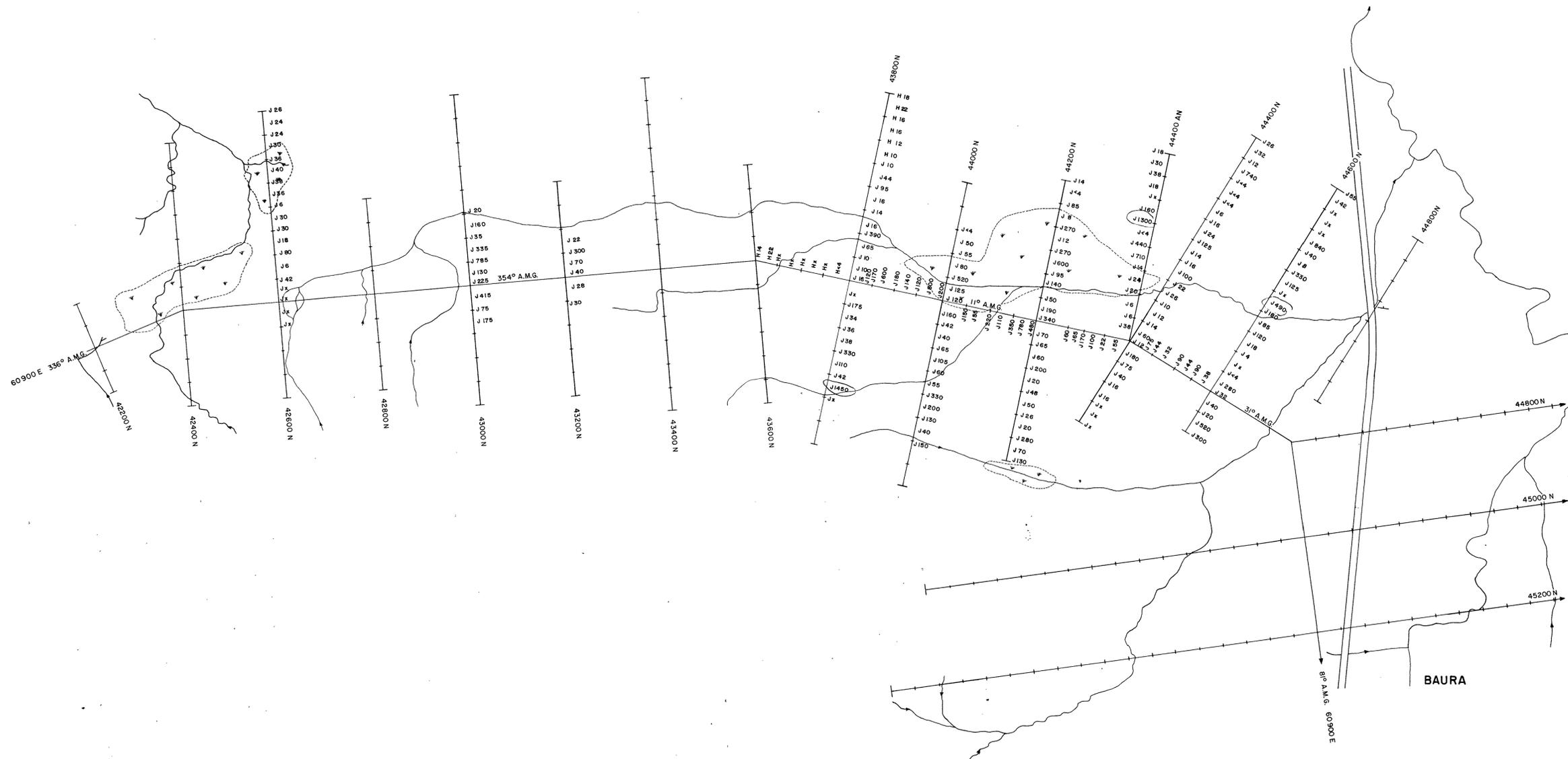
- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swamy Area

H = Hand Auger
 J = Jacro Auger
 P = Power Auger
 X = Sample collected, and analysed, but is probably of transported overburden.



ELECTROLYTIC ZINC CO. OF ASIA LTD.		
PROJECT: EL 4/78 ZEEHAN		TAS.
84-2104		
BAURA GRID 450146 BEDROCK GEOCHEMISTRY		
Zn REPORT T 477 Fig. 18		
Scale : 1:5000	Survey: I.MAT.	Revised:
Reference: A-78-60B	Date: 16-11-83	REF No.
Drawn: R.J.R.	Checked: G.L.K.	AI-532-0009

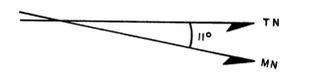
ROSE VALLEY



LEGEND

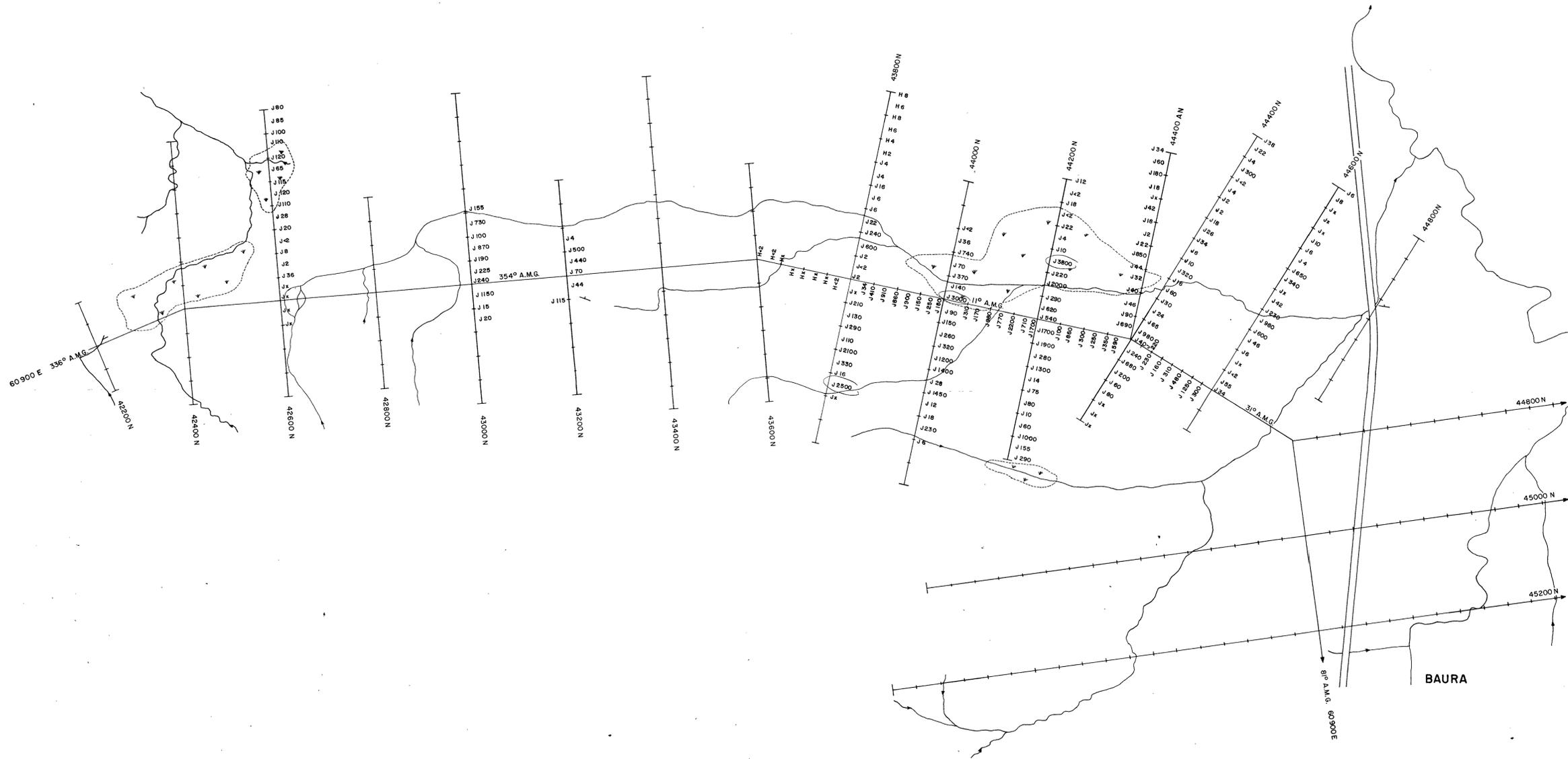
- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

- H = Hand Auger
- J = Jacro Auger
- P = Power Auger
- X = Sample collected, and analysed, but is probably of transported overburden.



ELECTROLYTIC ZINC CO. OF ASIA LTD.		
PROJECT: EL 4/78 ZEEHAN		TAS.
84-2104		
ROSE VALLEY GRID 450147 BEDROCK GEOCHEMISTRY		
Pb REPORT T177 Fig. 19		
Scale : 1:5000	Survey: I.MAT.	Revised:
Reference: A-78-60 B	Date: 16-11-'83	REF. No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0008

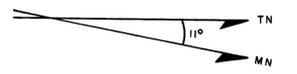
ROSE VALLEY



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

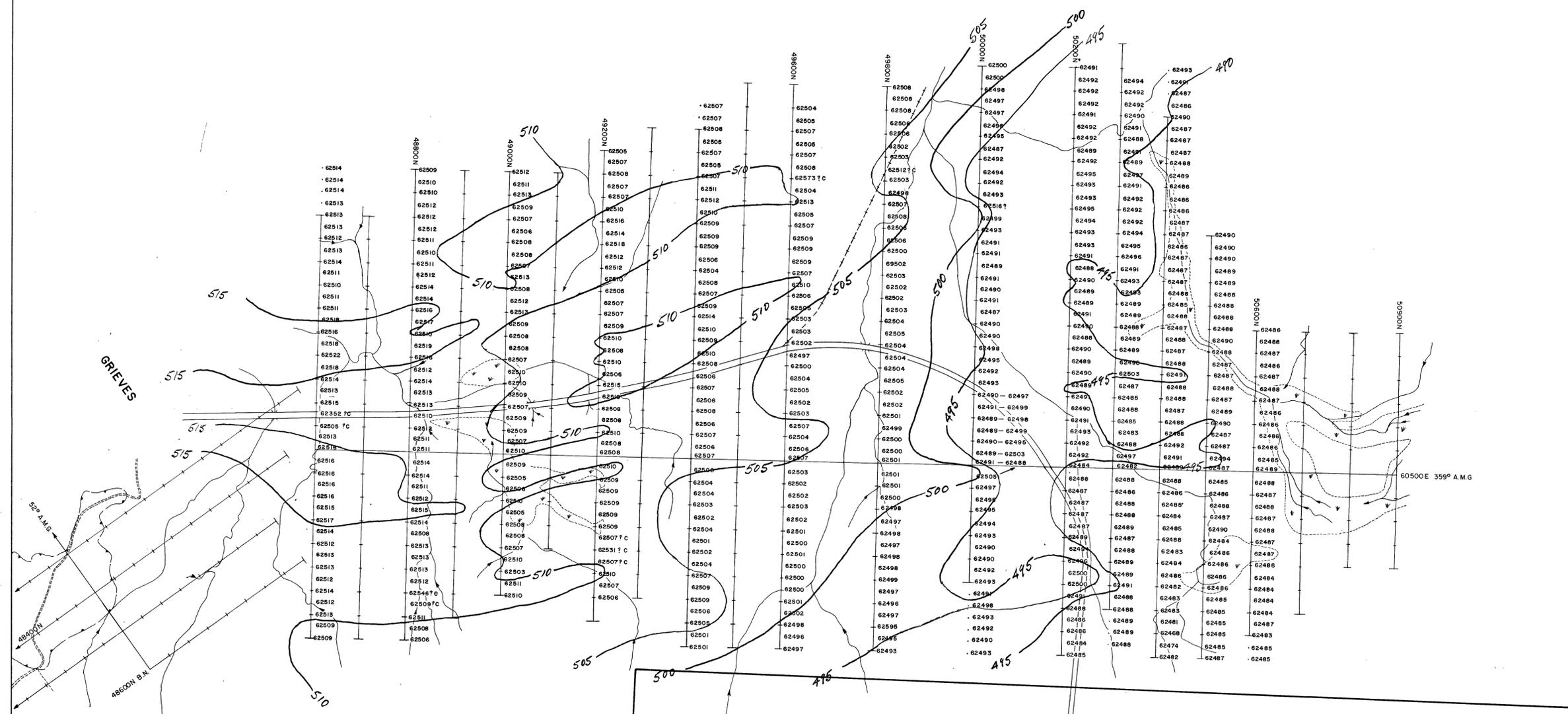
- H = Hand Auger
- J = Jacro Auger
- P = Power Auger
- X = Sample collected, and analysed, but is probably of transported overburden.



ELECTROLYTIC ZINC CO. OF A'ASIA LTD.		
PROJECT: EL 4/78 ZEEHAN		TAS.
ROSE VALLEY GRID 450148 BEDROCK GEOCHEMISTRY Zn REPORT T 177 Fig. 20		
Scale : 1:5000	Survey: I. MAT.	Revised:
Reference: A-78-60B	Date: 16-11-'83	REF. No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0007

MYRTLE

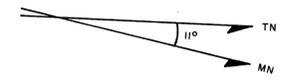
E.L. 4/78



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

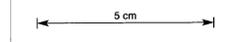
C = Cultural effect - culverts, broken augers, etc. - ignored when contoured.



450149

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS. 84-2104



MYRTLE GRID

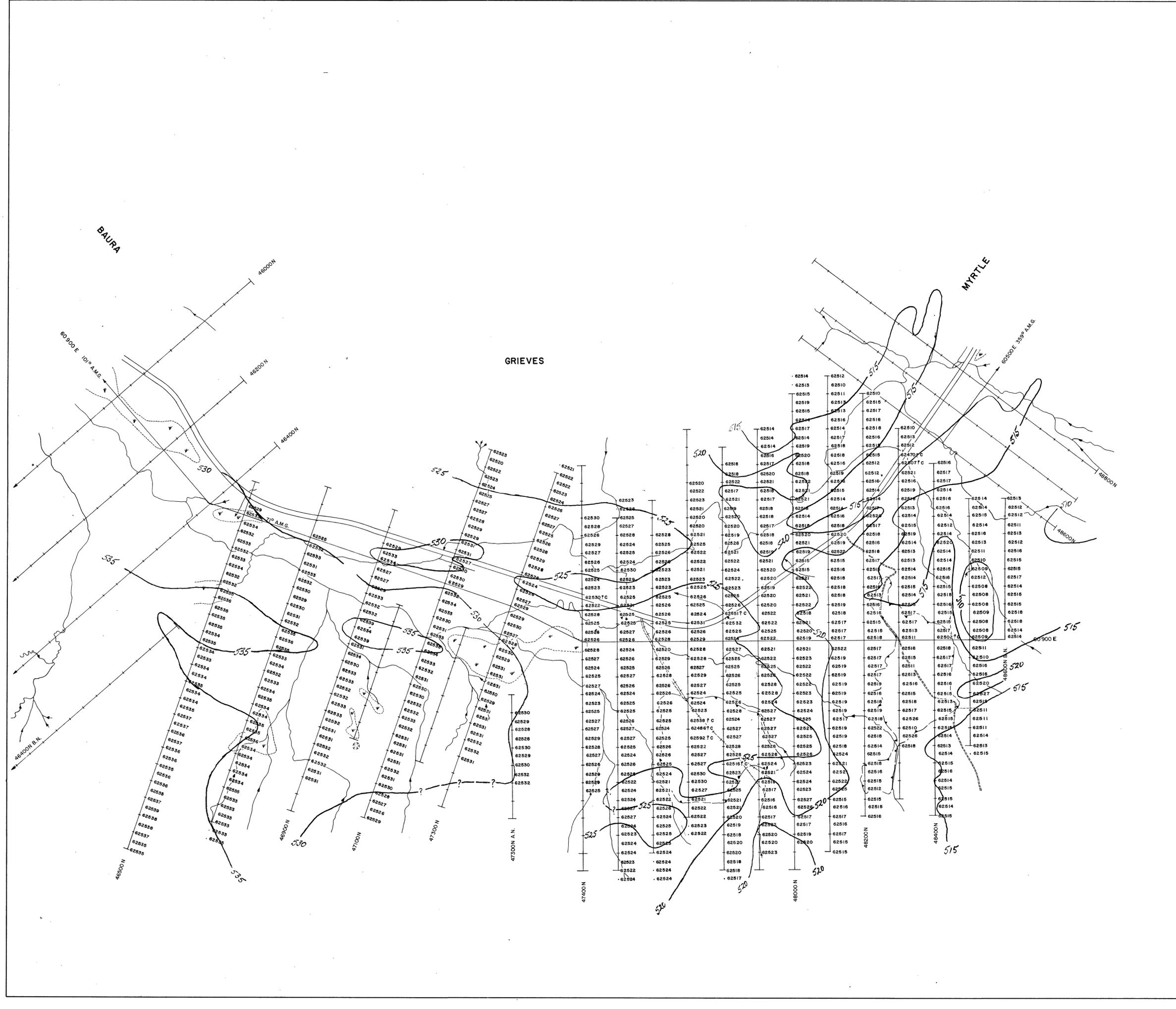
GEOPHYSICS

GROUND MAGNETICS

REPORT T 177 Fig. 21

Scale : 1:5000	Survey : I.M.A.T.	Revised :
Reference : A-78-60B	Date : 21-11-'83	REF No.
Drawn : R. J. R.	Checked : G. L. K.	A1-532-0028

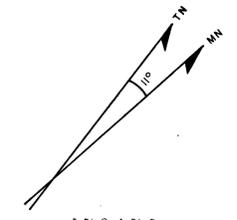
E.L. 15/76



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

C = Cultural effect-culverts, broken augers, etc.- ignored when contoured.



450150

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS.

84-2104

5 cm

GRIEVES GRID

GEOPHYSICS

GROUND MAGNETICS

REPORT T 177 Fig. 22

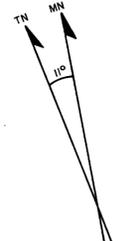
Scale : 1:5000	Survey : I.M.A.T.	Revised :
Reference : A-78-60B	Date : 16-11-83	REF No.
Drawn : R. J. R.	Checked : G. L. K.	A1-532-0027



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

C = Cultural effect - culverts, broken augers, etc. - ignored when contoured.

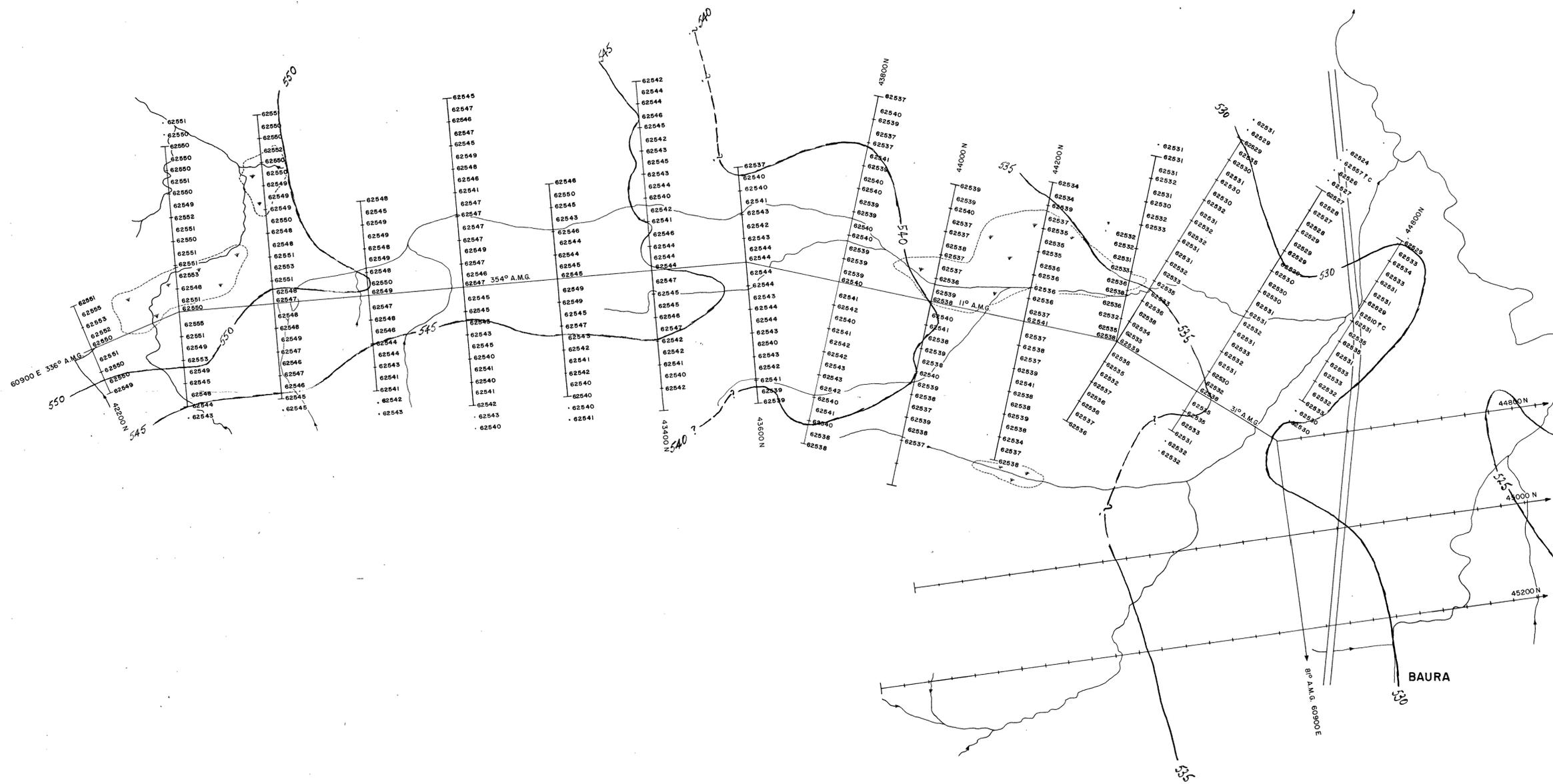


450151

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
 PROJECT: EL 4/78 ZEEHAN T.AS.
 84-2104
 BOURA GRID
 GEOPHYSICS
 GROUND MAGNETICS
 REPORT T 177 Fig. 23

Scale : 1 : 5000	Survey : I. MAT.	Revised :
Reference : A-78-60B	Date : 16-11-'83	REF No.
Drawn : R. J. R.	Checked : G. L. K.	AI-532-0026

ROSE VALLEY



LEGEND

- Cut Grid Lines
- Roads
- Tracks
- Tramway
- Power Lines
- Rivers, Creeks
- Quarries
- Swampy Area

C = Cultural effect - culverts, broken augers, etc. - ignored when contoured.



450152

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.

PROJECT: EL 4/78 ZEEHAN TAS. 84-2104



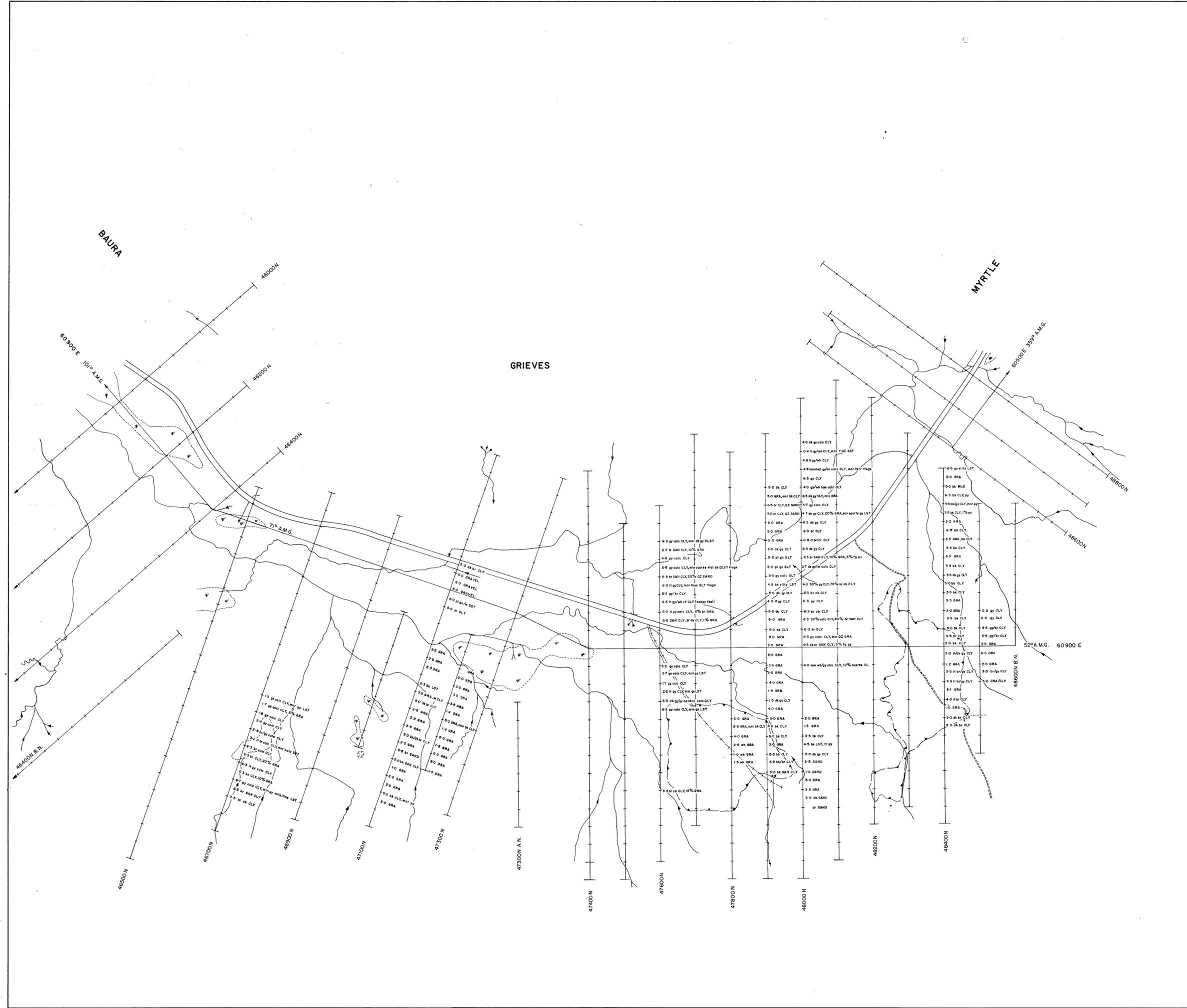
ROSE VALLEY GRID

GEOPHYSICS

GROUND MAGNETICS

REPORT T 177 Fig. 24

Scale : 1:5000	Survey: I.MAT.	Revised:
Reference: A-78-60B	Date: 16-11-83	REF. No.
Drawn: R. J. R.	Checked: G. L. K.	AI-532-0025



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	
bxd - brecciated		ferr - ferruginous	
clvd - cleaved		int - intense	
shrd - sheared		wk - weak	
calc - calcareous		v - very	
carb - carbonaceous		pb - pebble	
lam - laminated		cb - cobble	
xbd - cross bedded		tr - trace	
tn bd - thin bedded		in bd - inter bedded	
tk bd - thick bedded		tbal - tubercular	
vn - veins, veining		frct - fractured	

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

MINERALOGY or ALTERATION

qz - quartz		py - pyrite
gn - galena		sp - sphalerite
lim - limonite		cp - chalcopyrite
cbd - carbonated		sid - silicified
c - calcite		

ORDER

Colour, Texture, Rock Type, Mineralogy or Alteration, Fossils.
 e.g.
 dk gy mg foss SST. or gy calc SH py. or ply LST sid.

TOPOGRAPHICAL

— — — — —	cut grid lines	— — — — —	090° joint
— — — — —	roads	— — — — —	090° joint - vertical
— — — — —	tracks	— — — — —	090° overturned
— — — — —	or	— — — — —	60° bedding
— — — — —	tramways	— — — — —	090° bedding - vertical
— — — — —	power lines	— — — — —	quarries
— — — — —	or	— — — — —	
— — — — —	rivers, creeks		
— — — — —	or		
— — — — —	swampy area		

450154

ELECTROLYTIC ZINC CO. OF ASIA LTD.

PROJECT: EL 4/78 ZEEHAN	TAS.
24-2104	

5 cm

GRIEVES GRID

AUGER SAMPLES

REPORT T177 Fig. 26

Scale : 1:5000	Survey : I.MAT.	Revised :
Reference: A-78-60B	Date : 16-11-83	REF. No.
Drawn : R.J.R.	Checked : G.L.K.	AI-532-0044

025



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
bx - brecciated	fer - ferruginous
clv - cleaved	inf - intense
shrd - sheared	wk - weak
calc - calcareous	v - very
carb - carbonaceous	pb - pebble
lam - laminated	cb - cobble
xbd - cross bedded	tr - trace
tn bd - thin bedded	in bd - inter bedded
tk bd - thick bedded	fbal - tubular
vn - veins, veining	fract - fractured

ROCK TYPE

SST - sandstone	SLT - siltstone
LST - limestone	DLST - dolomite
BX - breccia	CGL - conglomerate
SH - shale	BSH - black shale
QZT - quartzite	LIM - ironstone
GRIT - grit	CLY - clay
PUG - pug	GRA - gravel

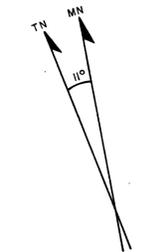
MINERALOGY or ALTERATION

qz - quartz	py - pyrite
gn - galena	sp - sphalerite
lim - limonite	cp - chalcopyrite
cbd - carbonated	sid - silicified
c - calcite	

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 sid.

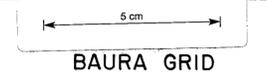
TOPOGRAPHICAL

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



450155

ELECTROLYTIC ZINC CO. OF A'ASIA LTD.
PROJECT: EL 4/78 ZEEHAN TAS.



AUGER SAMPLES

REPORT T 177 Fig. 27

Scale : 1:5000	Survey : I. MAT.	Revised :
Reference : A-78-60B	Date : 16-11-83	REF. No.
Drawn : R. J. R.	Checked : G. L. K.	AI-532-0043

